



Moach Rotel  
Design Document  
Cogworks, LTD  
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**Coggworks Ltd.**

Philadelphia, PA  
19104

## **Moach Rotel:**

### **A Simulation in Household Takeover**

#### ***Overview***

“Moach Rotel” is a fast-paced, story driven, first-person adventure game that puts you into the body of Corky, your everyday, common, household cockroach, trying to exact revenge on Chip Gritcastle, an old and dirty homeowner who murdered Corky's parents. With the help of your friends, Flapsvergen and Percy, players will adventure through multiple levels filled with gritty, expansive environments, hilarious dialog and challenging puzzles to overcome through teamwork and ingenuity.

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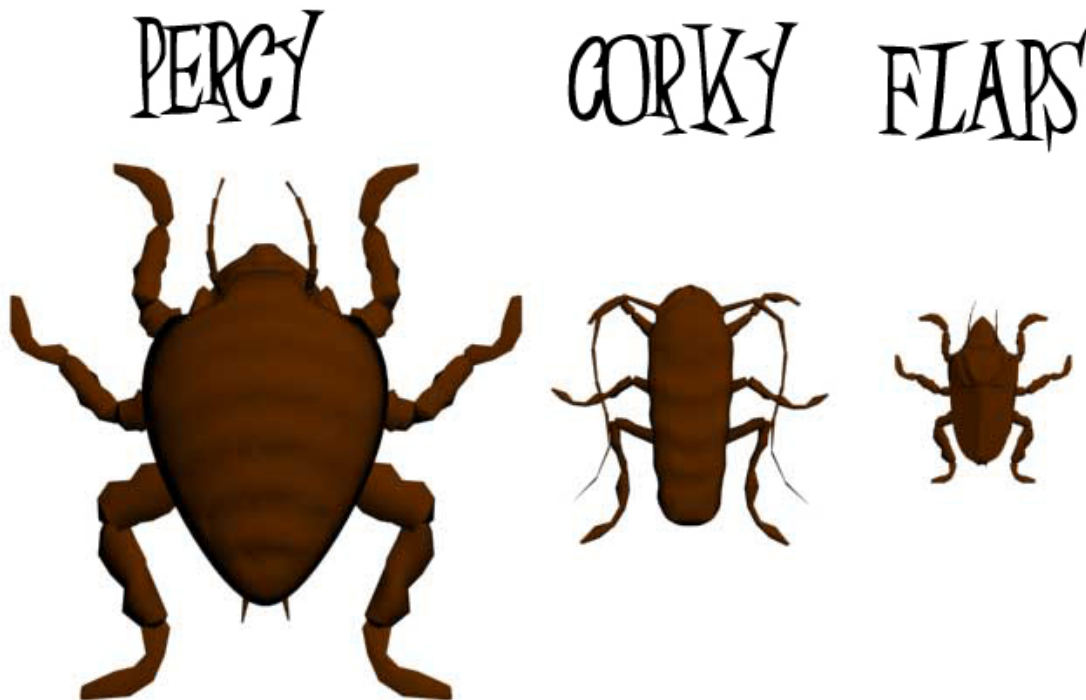
# I. Characters

# I. Characters

## A. Main Characters

Throughout the game, players will be able to choose between three different cockroaches, all with their own strengths and weaknesses. Players must carefully utilize this team of tiny adventurers to conquer the tasks that lie ahead.

You will be able to switch between the three at every egg drop point and safe area in the level you currently control.



### Power/Damage Chart:

	Speed	Insecticide	Stomp	Special Ability
<b>Corky</b>	Fast	30%-50%	100%	Sprint
<b>Flapsvergen</b>	Medium	50%-100%	100%	Flight
<b>Percy</b>	Very Slow	20%-25%	30%-50%	Hissing, Strength

## 1. Corky

As a child, Corky's parents were killed by Chip, the owner of the house/trailer. Following the incident Corky swore revenge and will stop at nothing to defeat him.

You start and must finish every level with Corky.

Special Abilities:

- The Player begins every level with Corky.
- The Player must finish every level with Corky.
- His Special is Sprinting, greatly increasing movement speed for a short period.
- Weakness: Low strength and Durability.





## 2. Chip Gritcastle

*"The Evil Homeowner"*

Chip is the Corky's arch nemesis. He possesses a number of attacks that will halt your adventure, and it is in the roach's best interest to try and avoid him at all costs.

When spotted, Chip will pursue the player until they reach a Safe Zone or Egg Drop area. The only other way to escape is with Percy's Hissing ability.

Chip can utilize the following attacks:

- *Insecticide*: One spray from this deadly canister can prove fatal.
- *Stomping*: Bug go squish. Avoid human feet.

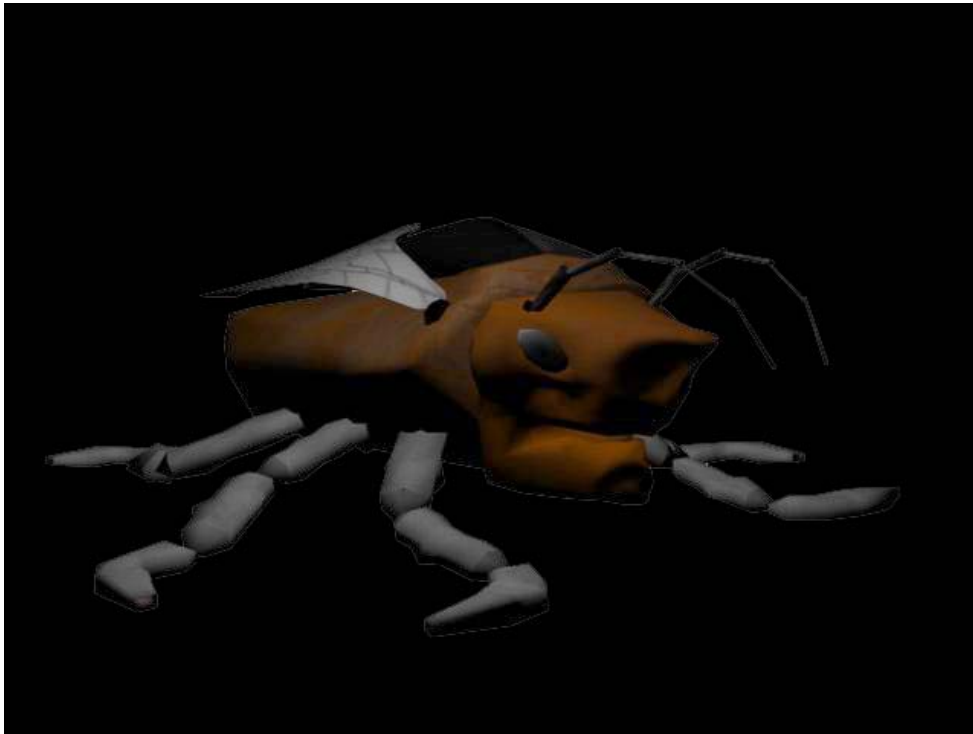


### 3. Flaps

Flaps had previously lived in a colony within a Paulaner Brewery. One day while on a mission to gather some hops for his family, Flaps got stuck within a bottling machine. He was then bottled into an Original Munich bottle and shipped to the United States. The case containing the roach was given as a Christmas present to Chip, who being a slob himself did not mind that there was a cockroach in his 75\$ case of beer.

Special Abilities:

- Flaps is the smallest of the controllable characters.
- He has the ability to hover and jump for extended distances.
- Weaknesses: Flaps is fairly slow, and the weakest of the three roaches.



## 4. Percy

Percy was brought over from Africa to be part of a research lab's study into cloning. Within the same research facility, Chip had applied as a test subject for a new sleeping medication. Percy, having smelled the odor from Chip, did everything in his power to escape from the lab and attach himself to Chip, eating all the food crumbs on his person and reveling in his odor.

### Special Abilities:

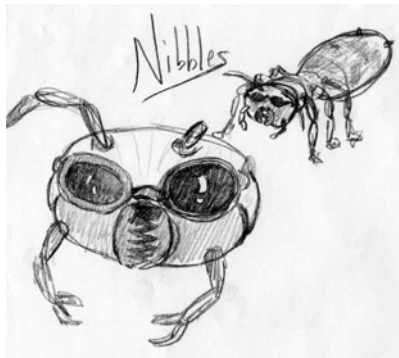
- Percy is the largest of the controllable characters
- Percy has a number of Special Powers which include Super Strength, Roach Trap Immunity, Super Durability and the ability to Hiss, which will get Chip's attention or assist in other ways.
- Weaknesses: Percy is by far the slowest of all controllable characters



## B. Secondary Characters

Throughout the adventure, the trio of cockroaches will come across other pests, insects and vermin of all shapes and sizes who will either help or hinder their progress. Normally these other house guests will require you to complete a quest or obtain an item before they even consider helping you, but there might be another way to get them to see things your way.

### 1. Nibbles – Termite



### 2. Canker – Beetle

### 3. The Hamster

### 4. Gnawg – Mouse



## C. Animations

- I.) **Roaches**
  - a. **Corky**
    - i. Talking
    - ii. Walk
    - iii. Run
    - iv. Sprint
    - v. Stationary
    - vi. Jumping
    - vii. Falling
      - 1. Impact/Recovery
  - b. **Flaps**
    - i. Talking
    - ii. Walk
    - iii. Run
    - iv. Flying/Gliding
    - v. Stationary
    - vi. Jumping
    - vii. Falling
      - 1. Impact/Recovery
  - c. **Percy**
    - i. Talking
    - ii. Walk
    - iii. Run
    - iv. BullRush/Charge
    - v. Stationary
    - vi. Jumping
    - vii. Falling
      - 1. Impact/Recovery
  - d. **Female Cockroach**
    - i. Talking
    - ii. Stationary
- II.) **Other Characters**
  - a. **Chip**
    - i. Walking
    - ii. Stationary
    - iii. Stomping
  - b. **Hamster**
    - i. Talking
    - ii. Stationary
    - iii. Walking
    - iv. Running
    - v. Impact/Recovery

1. falling
2. hitting walls

**c. Termites**

- i. Talking
- ii. Walking
- iii. Chewing
- iv. Stationary

# II.

# Gameplay

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# II. Gameplay

## K. Overview

1. Moach Rotel is Highly Story Driven
2. It is filled with over 100 Mini-games and Puzzles
3. The game features an entertaining cast of Characters
4. There is massive replayability through the various Mini-games and their multiplayer counterparts.
5. Exists within a giant explorable world, with exciting twists and turns around every corner.
6. Three vastly different characters available to choose from.

## L. Missions

Missions are the most important overall goal in the game. They help progress the storyline, reveal mini-games and puzzles as well as point you in the right direction to get from A to B.

### 1. Primary Missions

These missions are essential to completing a level. Most of the time they are linked to the storyline; however there are also non-story objectives such as laying eggs at drop points. When indicated, you must complete the objectives with a specific character.

### 2. Secondary Missions

These missions, while not vital to completing a level, are a great way to explore the level and look for hidden encounters. While they are completely optional, secondary missions are usually associated with some sort of bonus, be it mini-games or some other type of unlockable content.

## M. Mini-Games

Mini-Games are the focal point of entertainment and replay value. By completing them you will not only advance the storyline, but by accomplishing certain goals within the mini-games (for example, getting the high score) you will reveal unlockable content or gameplay bonuses.

## N. Unlockables

Unlockables increase gameplay time by altering the user's experience.

1. If you collect all of the breadcrumbs in a level, you will receive a small permanent health increase.
2. If you find all of the egg drops in a level, you will receive a small permanent speed increase.
3. If you complete all of the secondary missions in a level, you will receive a small reduction on your special ability cool down.



4. By completing all of the mini-games in a series (i.e. Races, Time Trials, etc.) you will unlock new abilities, character upgrades, alternate endings and hidden levels.
5. If you complete everything: mini-games (with high score), secondary missions, and collectables you will get to play a hidden character, a super-cockroach who possesses every ability, as well as some new ones such as climbing on walls.

## **O. Egg Drops and Safe Zones**

These areas are considered safe havens throughout the game. Both Egg Drops and Safe Zones are the only places where Chip cannot reach or harm you. They also offer bonuses such as health regeneration, and serve as a hub for you to switch characters.

### **1. Egg Drops**

- Function as checkpoints
- Save/Respawn areas
- Ability to change characters
- If eggs are dropped at all locations, a special item is unlocked
- Provides slow health regeneration

### **2. Safe Zones**

- Allows the player to hide from Chip's field of view temporarily, and gives the player time to strategize their next action
- Recognizable by a large crowd of fellow cockroaches
- Ability to switch characters

## **P. Hazards and How They Hurt You**

There are a variety of hazards which serve as nothing more than an obstacle to hinder your progress. Including the traps that Chip lays, there are a number of other traps around the house that can stop you in your tracks.

1. Bug Spray – This is carried by Chip. When hit directly, the player suffers immediate health degeneration. After the initial blast, they take slow damage for a short period of time (10-15 seconds)
2. Sticky Traps – Chip will drop a Sticky Trap if the player escapes after a pursuit. These are scattered throughout the house on the floors. Sticky traps slows the player's movement to a crawl, and while trapped they suffer a very slow health degeneration.
3. Roach Traps – Chip has been seen dropping these on occasion. With a tractor beam-like effect, roach traps will drag the character into its grasp when they get too close. The only way to get out of this trap is to escape its pull, because the player is killed instantly upon contact.
4. Hanging Flypaper – Similar to the Sticky Traps that are on the ground, Hanging Flypaper will drop your character to the floor (suffering fall shock) as well as providing health degeneration while the player is entangled. This is mainly an obstacle for Flaps.

5. Spider Webs – Before you befriend the spiders, these traps spell doom. Like the Sticky Traps, they will slow your movement to a crawl, however they also alert any spider within the area, which will immediately come to your location looking for a snack, aka death.
6. Environmental Hazards – There are an assortment of other hazards throughout the world. For example, falling into the sink or the toilet means death.

## Q. Playtime

The Total playtime to complete Moach Rotel will be around 35-47 hours.

- Single Player Storyline: 10-15 Hours
- Single Player Secondary Missions: 5-7 Hours
- Multiplayer: 20-25 Hours

## R. Importance of Careful Level Design:

Level design in a game with vast areas to roam such as Moach Rotel must have carefully laid out plan in order to maintain the dynamics wished for that level. Allow me to elaborate. In Moach Rotel, the three playable characters each have strengths which ultimately allow them into different areas of the world around them. In term, this sets up many challenges and puzzles to the game. Where Corky and Percy cannot jump for the life of them, Flaps jumps far and high with ease... But this is not to say that Flaps is the best character to play. Flaps is not nearly as fast as Corky.

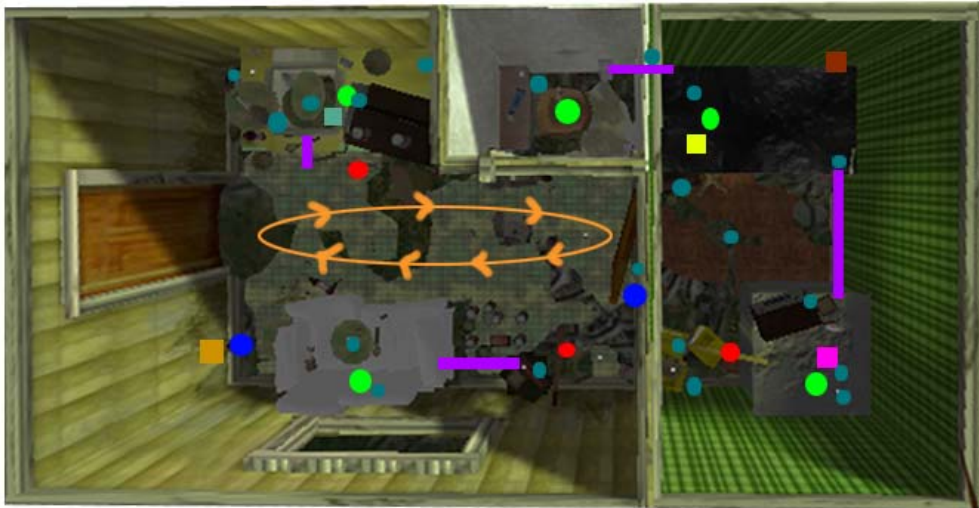
Corky is the fastest roach in the game, being so light, he is also very capable of running up some mighty steep faces. Corky is also needed at the end of the level to beat the level. (E.g. If you reach the extraction zone with flaps, you won't beat the game, you must get corky to this point to beat the level.) Percy is without a doubt the most immobile character in the game. He can't conquer even the slightest slopes, and he's about as slow as molasses; however, with thunderous thighs, Percy is no wimp! Percy can push relatively large objects that may hinder either Corky's or Flap's mission.

For the prototype level, we made sure that all characters could complete the two couldn't. In the beginning of the level, Corky is trapped in a bedroom. Being Corky, you must meet Flaps and complete a mission for him in order to gain access to using this jumping Roach. Once you can control this roach, you can use him to jump across to the bed and into the bathroom. To free Corky from the bedroom, you must meet with Percy as Flaps to activate him. Once he is activated, you can use Percy to free Corky and control him to safety.

This ever present navigation puzzle is a common motif in Moach Rotel. We use all these specific character attributes to create environments that limit some characters while enabling others. A lot of testing went into designing the

prototype to restrict the user from some areas while allowing the user to explore other areas.

### S. Prototype Level Design:



**Prototype Trailer (Top Down)**

 Egg Laying Area	 Ramp Object	 Flaps
 Chip's Path of Movement	 Movable Object	 Percy
 Jumpable Span	 Crumbs of food (20 total)	 Female Roach
 Safe Areas	 Corky	 End of Level

# **III.**

# **The Story and Game**

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# III. The Story and Game

## A. Trailer (Tutorial)

### 1. Objectives

#### Primary

- Find Flaps.
- Gather 10 Breadcrumbs.
- Find Percy.
- Find Female with Percy.
- Lay eggs in three locations.

#### Secondary

- Lay egg in final 2 egg drops.
- Gather remaining 10 breadcrumbs.

### 2. Story

1 year after prologue, corky has moved from the house to the trailer, so he can formulate a plan to get back at Chip. Game opens with drunken loud noises coming from the corner. Corky goes to check it out (objective), the noises are coming from an inebriated Flaps, who wants corky to go get him some bread so he can sober up (pac-man mini-game), once the bread has been gathered flaps decides to lend you his help. Now being able to enter the main part of the trailer corky hears a moaning coming from the countertop. Here flaps must hover up, corky can't make it, and flaps will find Percy, a lonely Madagascar hissing cockroach. Percy has never seen a female roach in his life and would very much like to, he always finds pheromone trails but is too slow to catch up to the female. Flaps promises Percy that he will help him out, letting him in on a little secret. Some female roaches will start giving off pheromones when they hear the hiss of a large roach. (As Percy you must now hiss to reveal the path to the female). Once Percy finds the female, she will give him her eggs; this confuses Percy as it is his first interaction with a female. Percy must then bring the eggs back to corky (objective), who will come up with the idea of infesting the trailer and house with eggs to drive Chip out. (New Objective: lay eggs in three locations), once this is finished the two will decide to help corky get back at Chip for good, and they must find a way back to the house. (There is a beer can clogging a mouse hole which Percy will need to push out of the way.)

### 3. Mini-Games

- I. Pac-man-esque game : Collect bread crumbs from a top down perspective to help Flaps sober up.
- II. Find Female with Percy: The pheromone trail reveals itself as Percy hisses.

## B. Kitchen

### 1. Objectives

#### Primary

- Investigate where noise is coming from...
- Cut phone lines with Gnawg.
- Locate Percy on countertop.
- Push ingredients into trash with Percy.
- Reach female with Flaps.
- Lay eggs in three locations.

#### Secondary

- Complete second race with Flaps.
- Cut power lines to fridge with Gnawg.
- Push more ingredients with Percy.
- Lay egg in final egg drop location.

### 2. Story

Enter kitchen, corky hears argument from across the way. Corky finds Flaps and Gnawg arguing about who is faster. Flaps is a little drunk like normal. Corky suggests a race to see who is fastest (race mini-game). After the race corky talks to Gnawg about his hatred for Chip, Gnawg has lost a son in a mousetrap. Gnawg decides to help; corky comes up with the idea to cut phone lines (Crash Bandicoot mini-game). On way to find Percy corky discovers a recipe on the counter. This is what chip is cooking for dinner. Corky then comes across Percy eating on the counter, corky tells Percy they should sabotage Chip's dinner. Percy must now make his way to the cabinet where he will have to knock the ingredients into the garbage (timed mini-game). Female is on top of microwave among beer cans, only flaps can reach her (drinking mini-game). Flaps obtains the eggs (New Objective: lay eggs in three locations). Once primary missions are complete Chip goes to start dinner, sees the ingredients aren't there and storms out of the room leaving the door open.

### 3. Mini-Games

- I. Race: Flaps must beat Gnawg in a race around the room.
- II. Ride on Gnawg to cut phone lines: Corky sits on Gnawg's back, 3<sup>rd</sup> person camera from behind the mouse, must jump obstacles and make it to the finish.
- III. Push food off counter: With Percy you must push all of the food off of the counter in a timed game.
- IV. Drink the beer to get the females eggs: You must rapidly tap a button to chug beer from a can hoping to beat the female. There will also be a burp meter and if you chug to fast you will burp.
- V. Race #2.
- VI. Ride mouse #2: cut power to fridge.
- VII. Push food off counter #2.

## C. Dining Room

### 1. Objectives

#### Primary

- Get on table with Flaps.
- Fight Canker with Percy (Sumo mini-game).
- Run Gauntlet 1 with Corky to reach female.
- Run Gauntlet 2 with Flaps to get cotton ball.
- Lay eggs in three locations.

#### Secondary

- Plat forming with Flaps (timed mini-game).
- Extra Sumo battles with Percy.
- Lay egg in final egg drop location.
- Run Gauntlet 1 and 2 (timed).

### 2. Story

Everyone enters room; they come upon a room piled high with boxes. It appears as if no one has ever touched them as most are still sealed. As you enter the door across the room slams shut. Corky decides they should check out the room and orders flaps to climb boxes. (Plat forming with flaps to get up top and on table). Flaps meets a beetle who wants someone as strong as him to fight. Flaps says he knows someone but he can't get up to the table. Finally the beetle knocks over a piece of cardboard allowing Percy to get on table. (Sumo mini-game with Percy and Canker). Canker agrees to help you open the door to next room. Corky says that before they leave they should infest the room and proceeds to go find a female, (Corky must now navigate "gauntlet 1"). The female refuses to give corky her eggs until he gets her a ball of cotton so she can have a more comfortable sleep. This pisses corky off and flaps says he will go get it (Flaps must run "gauntlet 2"). Cotton ball in hand Flaps receives the eggs (New Objective: lay eggs in three locations) Now with the help of Canker and Percy you can exit the room (knocking door open mini-game).

### 3. Mini-Games

- I. Sumo: Flaps must fight the beetle Canker in a sumo match, ramming Canker trying to knock him off the table.
- II. Corky Gauntlet: You must make it from one area to another in a specified time; the area will be full of obstacles.
- III. Flaps Gauntlet: Same as Corky's.
- IV. Ram door open: Canker and Percy will work together to knock the door open, player must time his ram with Canker's.
- V. Sumo #2.
- VI. Corky Gauntlet #2.
- VII. Flaps Gauntlet #2.

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## D. Living Room

### 1. Objectives

#### Primary

- Talk to hamster.
- Find Chip's secret (Monkey Ball).
- Find Female.
- Complete hamster bowling.
- Lay eggs in three locations.

#### Secondary

- Cut the power to the TV with Gnawg.
- Extra hamster bowling.
- New Flaps V. Gnawg race.
- Lay egg in final egg drop location.

### 2. Story

Entering the room you see a hamster in a cage. Corky must go and talk to the hamster (objective). They discuss Chip and Corky's hatred for him. The hamster tells Corky that he knows a secret about Chip, that he will show Corky. Corky asks where it is and the hamster says he can only show him because he is blind. (Super Monkeyball-esque mini-game rolling over the top of the hamster tubes) You will then make it over to the box where you will discover the secret about Chip. When you find the female she will tell Corky that there are a bunch of beer bottles blocking the entrance to her home. The hamster says he can help; he just needs a little push (mini-game hamster bowling). This will open up the next level; Chip will chase the hamster ball out of the room.

### 3. Mini-Games

- I. Ride hamster ball to other side of room: Game will play very much like marble madness or super monkey ball, you will have to navigate a ball over a series of obstacles to get to the end.
- II. Hamster bowling: just as the name states, Percy will push a hamster ball into a set of beer bottles. Ride mouse #3: cut power to TV.
- III. Race #3.
- IV. Hamster bowling #2.



## **E. Hallway**

### **1. Objectives**

#### Primary

- Explore hallway for a way to get upstairs
- Find an alternate route up the stairs
- Save Flaps from the spider (mini-game: Hiss with Percy to get flies)
- Travel over spider web to get upstairs

#### Secondary

- Obtain more flies for the spider

### **2. Story**

Corky and everyone want to get upstairs to learn more about Chip. On their way up the stairs the baseboard is broken and they must find an alternate route. While exploring the hallway Flaps runs into a spider's web, as the spider is trying to eat Flaps, Corky and Company yell at spider not to. Spider says you must get him 5 flies to satisfy his appetite (mini-game: Percy must hiss at flies to scare them into web). Spider will then spin a web to help Corky up the stairs.

### **3. Mini-Games**

- I. Scare flies: As Percy you must hiss at flies to scare them into the spider's web.
- II. Scare flies #2

## **F. Bathroom**

Meet up with lemmings who will tell you about a termite who knows how to get into Chip's locked room, mid sentence the lemming along with the rest of the tribe will jump down the drain in the bathtub.

## **G. Bedroom**

### **1. Objectives**

#### Primary

- Find Nibbles
- Talk to Moth
- Meet Nibbles in hallway
- Lay eggs in three locations

#### Secondary

- Eat Clothing #2
- Race #4
- Lay egg in final egg drop location

### **2. Story**

In the bedroom you must locate the termite Nibbles, who supposedly knows how to get into the locked room. Nibbles then leaves the room and tells you to meet him in the hallway. A moth is then seen floating in the corner, upon further inspection the moth will help you by eating through Chip's clothes. Gnawg shows up once again for another race with Flaps, and once again you must find the female and lay some eggs.

## **H. Hallway Revisited**

### **1. Objectives**

#### Primary

- Eat through wall

### **2. Story**

Nibbles will help you enter the locked room by eating through the wall of the bathroom, this will be done in a mini-game very similar to the sand level of Super Mario.

### **3. Mini-Games**

- I. Eat through wall with Nibbles.

## **I. Locked Room/Flee Through the House**

### **1. Objectives**

#### Primary

- Lay eggs in 3 locations
- Run from Chip
- Keep Chip in living room

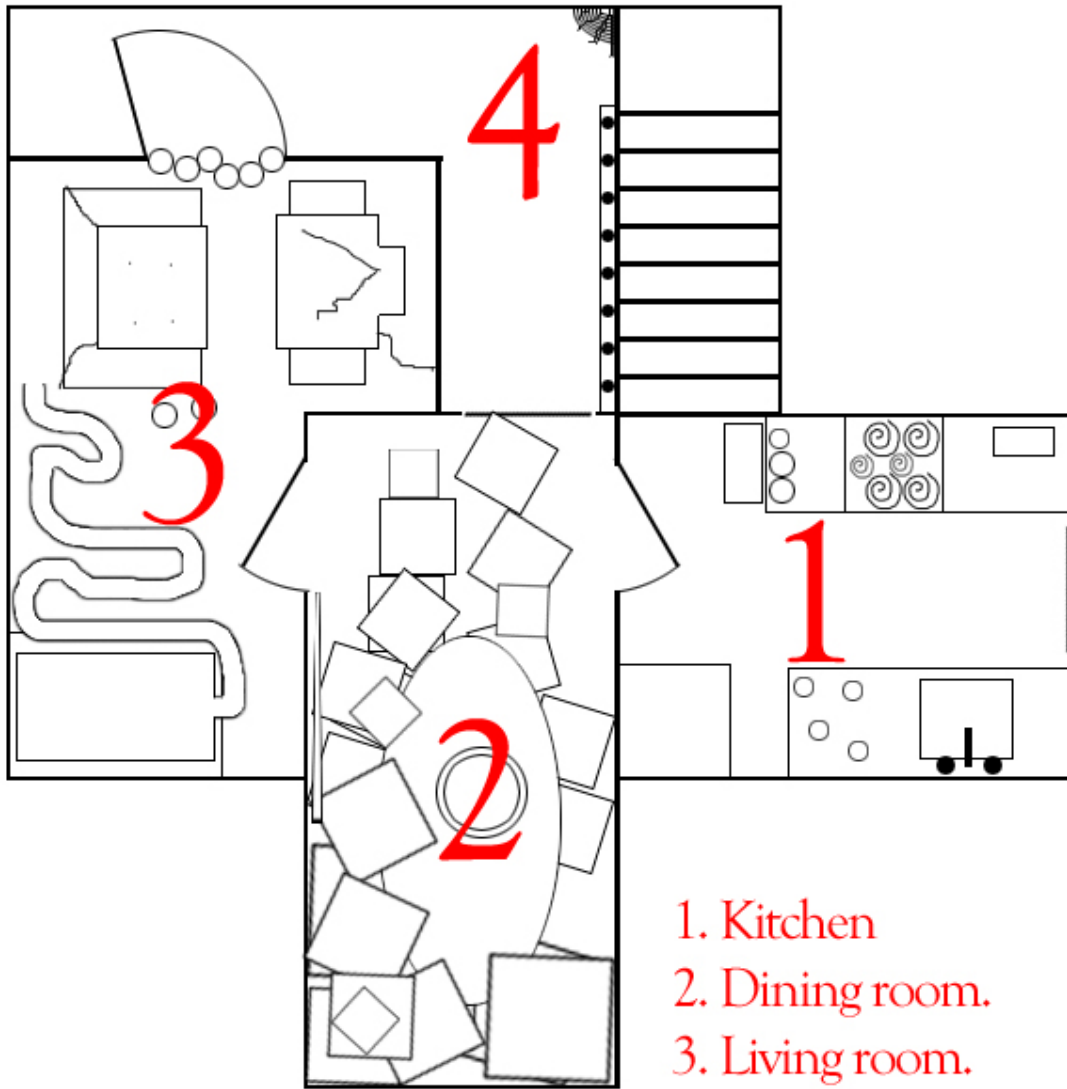
#### Secondary

- Lay final egg in egg drop location

### **2. Story**

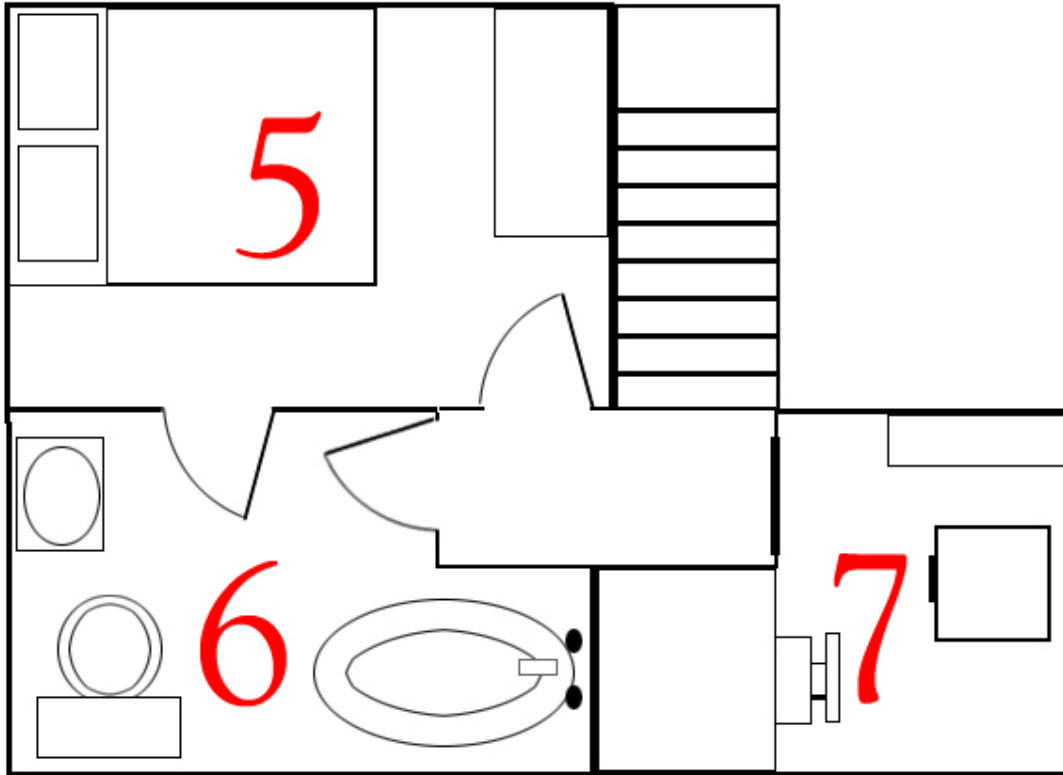
Upon entering the room you will devise a plan to open the safe. Before the plan is enacted the team must lay eggs throughout the final room in the house. Nibbles will now suggest he can eat through the floor but he is going to need some time, using Percy to attract Chip's attention Corky must keep Chip out of the room and away from Nibbles. A mini-game ensues in which Corky must run from upstairs to the living room downstairs at which point Flaps will notify Corky that Chip must stay in that room. After a minute the ceiling will collapse with the safe landing on Chip. Everyone collectively gathers downstairs to see what is in the safe as it slowly opens. Inside is a picture and a letter, the picture is of Chip and his identical twin brother. The letter from Ned, Chip's brother states that he is sorry for leaving but hope Chip understands. A year ago Ned killed a couple of cockroaches and felt so bad that he fled to an Antarctica where he wouldn't have to deal with insects or the pain of killing them. The letter also states that Ned would be returning home in a couple of months.

J. House Layout



- 1. Kitchen
- 2. Dining room.
- 3. Living room.
- 4. Hallway and stairs.

# First floor



5. Bedroom and hallway.

6. Bathroom.

7. Study.

# Second floor

# **IV. Game Controls**

# IV. Game Controls

This game will use the classic FPS control scheme.

[W][A][S][D]: Movement

Mouse: Look

Left-click: Action. (interacting with other pests, laying eggs, pushing objects)

Right-click: Special (hiss, sprint or fly)

## Other Controls:

[Esc]: Save/Load Menu

[M]: Map/Objectives Menu

[1] Switch to Corky

[2] Switch to Flaps

[3] Switch to Percy



# **V. Menu Structure**



# V. Menu Structure

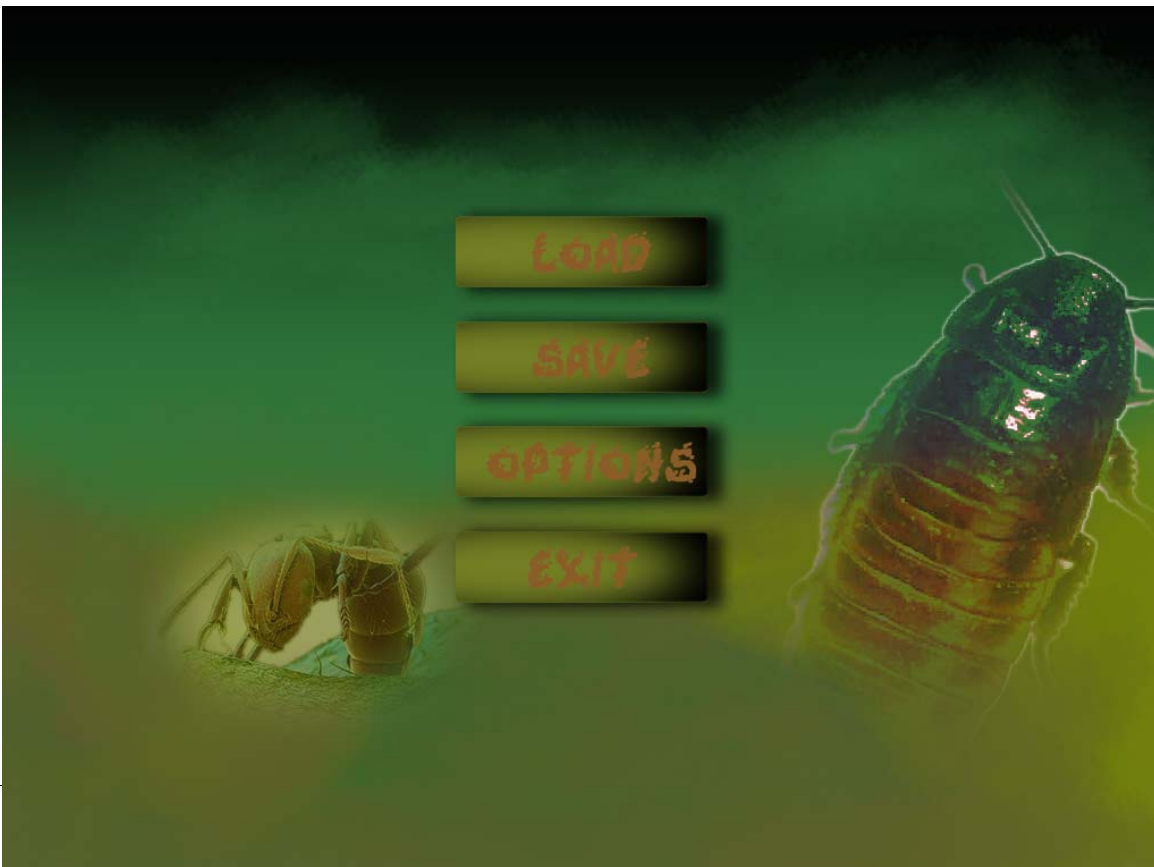
Title Menu Screen



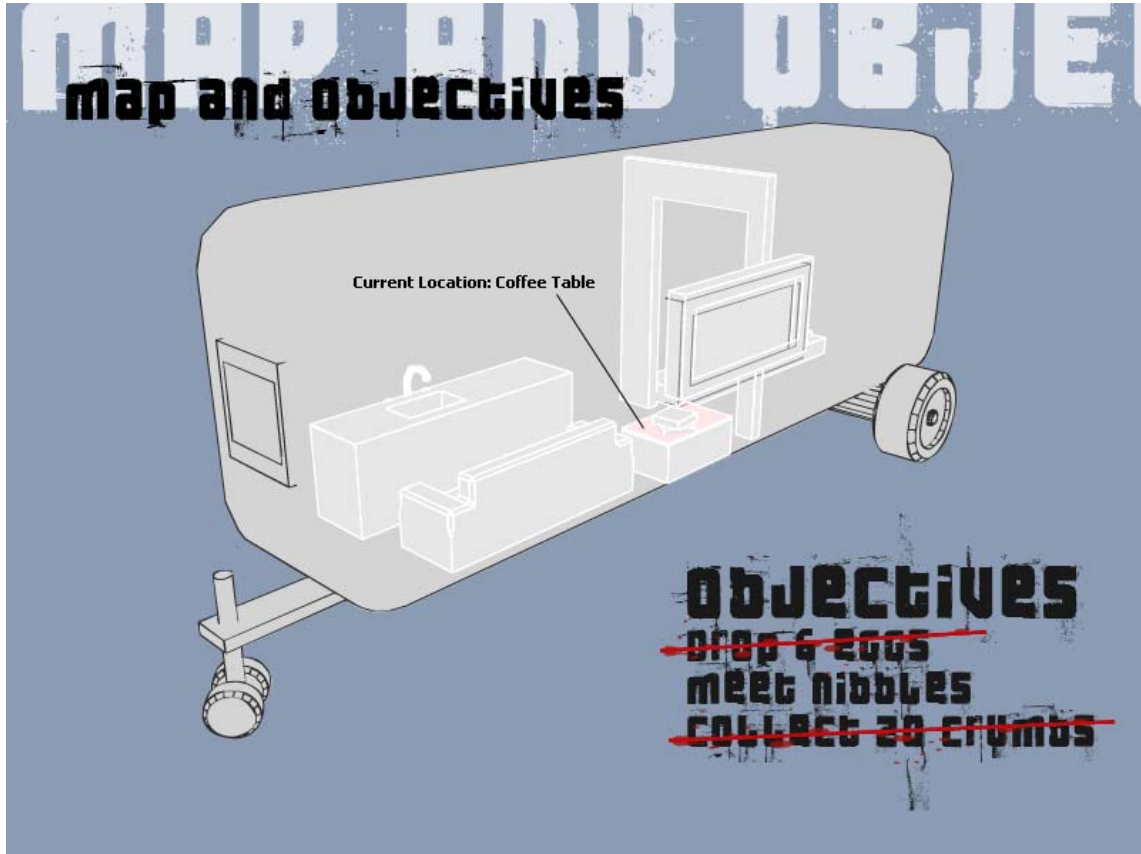
## Loading Screen



## Save Menu



# Map



# **VI. The Heads-Up Display**

## VI. The Heads-Up Display

Top left: Amount of eggs being carried

Top right: Objectives

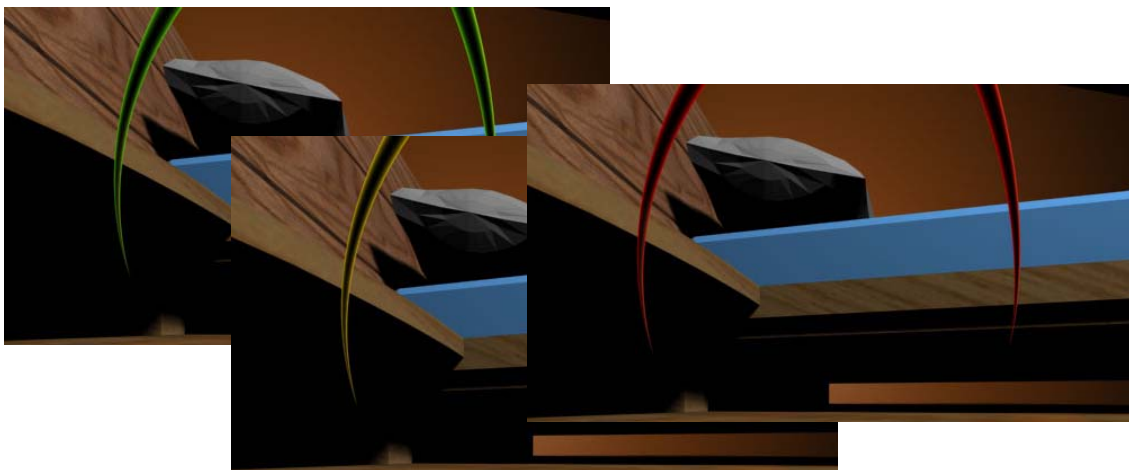
Bottom left: Health meter

Bottom right: Special meter

Ring w/dot: Chip locator – ring circles the HUD letting you know where chip is



As you enter different areas within the game your antennae will change color accordingly. Green represents a safe zone or egg drop area, Yellow alerts you that Chip is curious and Red means that Chip has found you and is approaching (Imminent Danger)



As your character's health deteriorates, the health meter in the bottom left of the screen will reflect that.

- Health decreases slowly when Chip sprays the character. (Degeneration)
- Damage will be immediately be taken when Chip stomps the character.
- Your health immediately increases when you eat bread crumbs.
- Health will show a slow regeneration while in egg drop areas.



# **VII. Sound And Music**

---

# VII. Sound

## A. Music:

The main idea behind the soundtrack is to present an eerie feel for the user; imagine an old scratchy record player off in the distance, and the addition of elements from the level to the song playing such as dripping water, or a window shutter slamming shut. This will present a rhythmic yet catchy soundtrack. This soundtrack will quickly change when you are in danger, such as Corky chasing after you or getting pulled towards a "Raid Trap," the music will then be very upbeat and heart pounding to reflect the intensity.

- Normal music for the game (upbeat) (30 second loop)
- Alerted Chip music (starts after one of chip's alert curses. Adrenaline packed fast paced music.) (15 second loop.)
- Mini game music (upbeat music, faster than normal music to illustrate the pressure of the mini-game.) (15 second loop)
- Menu music (Normal music but a little more intense to get the user excited to play.) (10 second loop).

## B. Dialogue:

There will also be an immense amount of dialog between Corky and his teammates. This goes without saying that dialogue between the many allies located throughout the house will be in the game as well. This dialog will help us set up the back story, as well as help push the player in the right direction to complete a mission. Voice actors will be selected At the beginning of production. See the "XI. APPENDIX: The Script" section to view all the dialogue.

## C. Effects

We also plan on making sound effects a very important part of the gameplay, hearing Corky's voice off in the distance will help the player figure out where the danger is when he is not in your direct line of view. If Corky tries to stomp on you, the sound will be cataclysmic, and will most likely drown out all the other sound on the system to help empower the effect of his tactics. Sounds such as the skittering of insect legs across the floor, and the chirping of a cricket could help you locate allies and accomplish certain goals.

- **Environment:**
  - Ambient noise floor (30 second loop)
  - Water drips of toilet and sink (.25 seconds each).
  - Corny music coming from radio (old jazz trumpet?) (20 second loop).



- Safe-zone roaches hissing cricking and chirping. (.15 second).
- **Interactivity:**
  - Menu buttons (clicking).  
Standing in Egg Drop points (a spritzzy looping sound.) (1 second loop).
  - Gaining health in egg drop points (a humming aura sound) (1 second loop).
  - Pick up eggs (mushy sound) (.25 second).
  - Pick up breadcrumbs (crunchy brittle sound) (.25 seconds).
  - Successfully completing a mission sound. (1 second).
  - Failing a mission (2 second sound).
  - Standing in safe-zone (2 second calming loop).
  - Choosing another character in the character menu. (1 second sound).
  - Sticky sound of walking on traps (.3 seconds).
  - Shock sound from falling from a high point (.5 second hum loop).
- **Chip:**
  - **Effects:**  
Footsteps (.2 seconds).  
Floor boards creaking (.5 seconds).  
Burping (.2 - 2 seconds).  
Farting? (.2 - 2 seconds).  
Stomping (.2 seconds).  
Bug spray (.2 second loop).
  - **Cursing Alerts:**  
"Well what do we have here!"  
"Goddamn roaches!"  
"Choke on this!"  
"How does this taste you little bastard!"  
"ROACHES!"  
"What do we have here!"  
"This is going to be slow and painful!"
  - **Idle Muttering:**  
"I need a beer"  
"Where's my chewing tabacee"  
"Man, I'm built like a Gladiator"  
\*sniff\*"my deodorant must be stale"  
\*Sniveling up saliva\*
- **Characters:**
  - **All Animals:**  
Crunching of eating (1 second loop).  
Crunching of shell once you get stepped on (.5 seconds).

---

Coughing of getting sprayed (1 second).  
Idle antenna rubbing together (3 second).  
Flies buzzing. (1 second loop).

- **Corky:**  
Pitter patter/drag of legs (.2 second sound will loop while moving, loop will speed up when sprinting.)  
Hum of using special sprint ability (1 second loop).  
Scripted Dialogue
- **Flaps:**  
Slightly louder pitter patter/drag of legs (.2 seconds will loop.)  
Butchered flapping sound when uses his long jump (3 second loops).  
Scripted Dialogue.
- **Percy:**  
Loudest pitter patter/drag of legs (.2 seconds will loop.)  
Pathetic "grrrrr" as he pushes an object. (1 second).  
Hissing (.2 second loop).  
Scripted Dialogue.
- **Gnawg:**  
Chewing and sparking from biting through wires. (5 seconds)  
Padded feet running. (.2 seconds)  
Scripted Dialogue.
- **Canker:**  
Louder pitter patter of feet than Percy's feet (.2 seconds).  
Growling pushing against door (2 seconds).  
Scripted Dialogue.
- **Nibbles:**  
Chewing through wood (4 seconds).  
Feet walking (.2 seconds).  
Scripted Dialogue.
- **Moth:**
- **Hamster:**  
Chirping (1 second).  
Rolling in hamster ball (2 second loop)  
Scripted Dialogue.
- **Spider:**  
snake-like intimidating like hissing sound (1 second).  
Delicate foot steps (.1 seconds).  
Scripted Dialogue.

# VIII.

# Object List

# VIII. Object List

## A. File Naming Convention

name\_type\_res\_status.file

name = The name of the object. Percy, map, Design, Toothbrush etc.

type = Type of object. Model, Interior, Texture, Document, Sound, Image etc.

res = Resolution. 2=high, 4=medium, 16=low. Non models: 0=no graphics, 1=graphics.

status = 0-5. 0=not finished, 1=modeled, 2=textured, 3=rigged, 4=animated, 5=completed. For non models this will be 0=work in progress, 3=draft 5=completed.

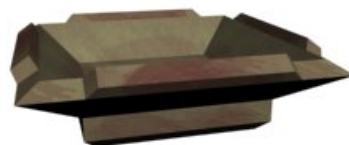
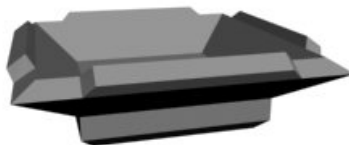
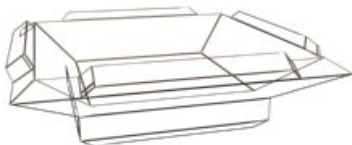
file = filetype

## B. Object List

### Apple Core



### Ashtray



**Banana**



**Baseball Bat**



**Beer Bottle**



**Bowl**



**Broom**



**Beer Can**



**Cigarette Butt 1**



**Cigarette Butt 2**



**Deodorant**



**Egg**



**Egg Container**



**Faucet**

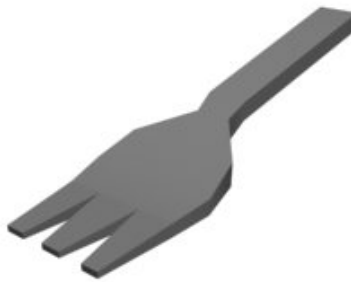
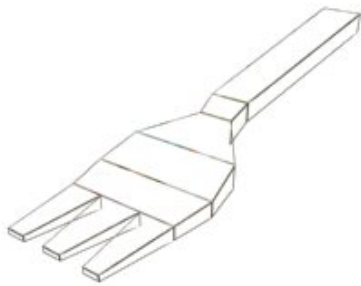


**Fly Tape Trap**





**Fork**



**Frying Pan**



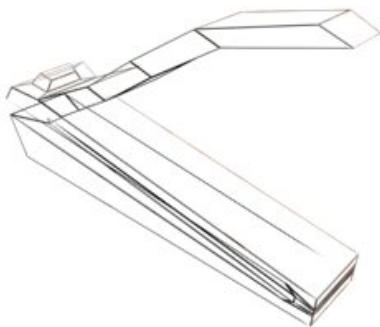
**Knife**



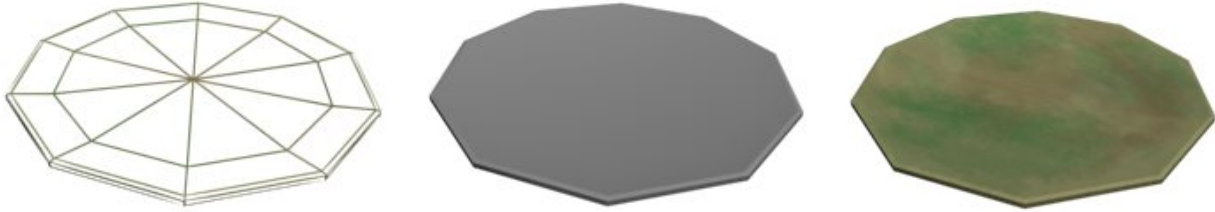
### Mug



### Nail Clippers



**Plate**



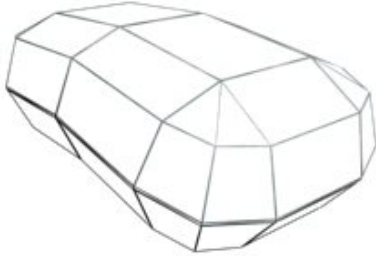
**Radio**



**Roach Trap**



**Soap**



**Sofa**



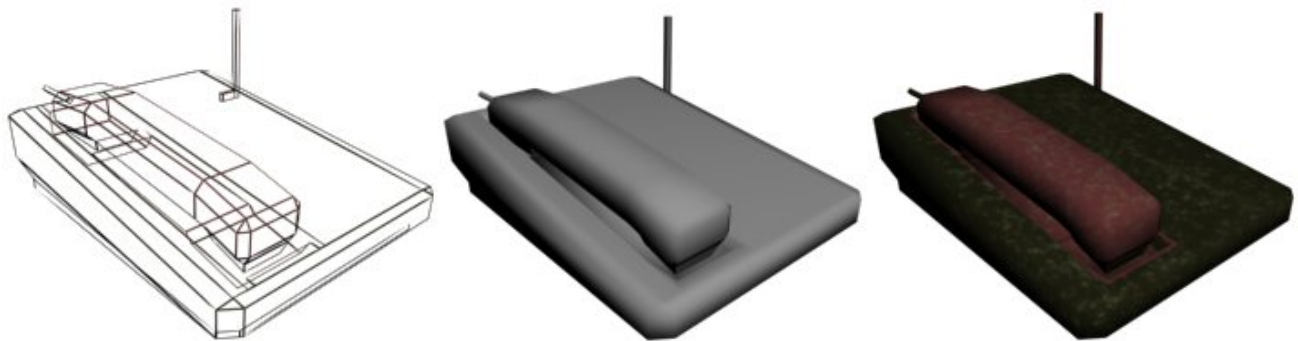
**Spoon**



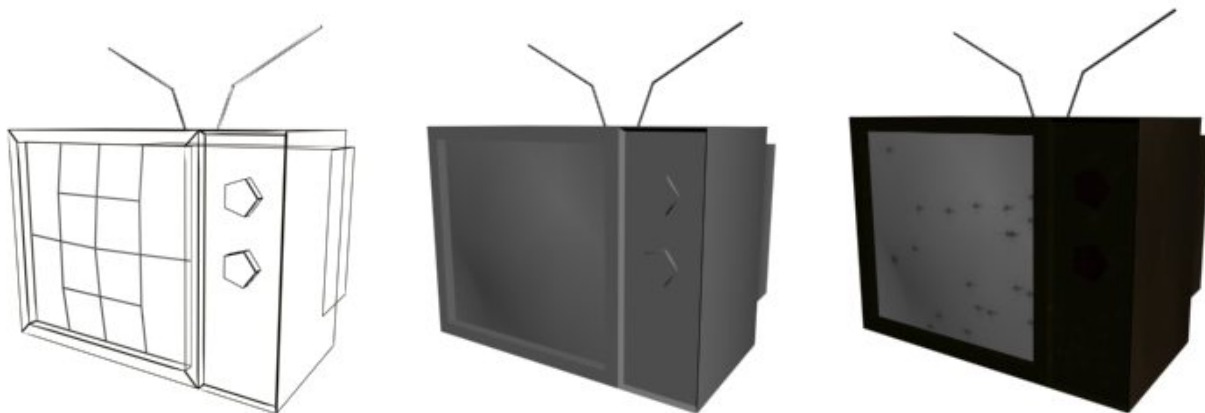
### Steak Knife



### Telephone



### Television



### Toilet



### Toilet Paper



### Toothpaste



## Turkey Drumstick



# **IX.**

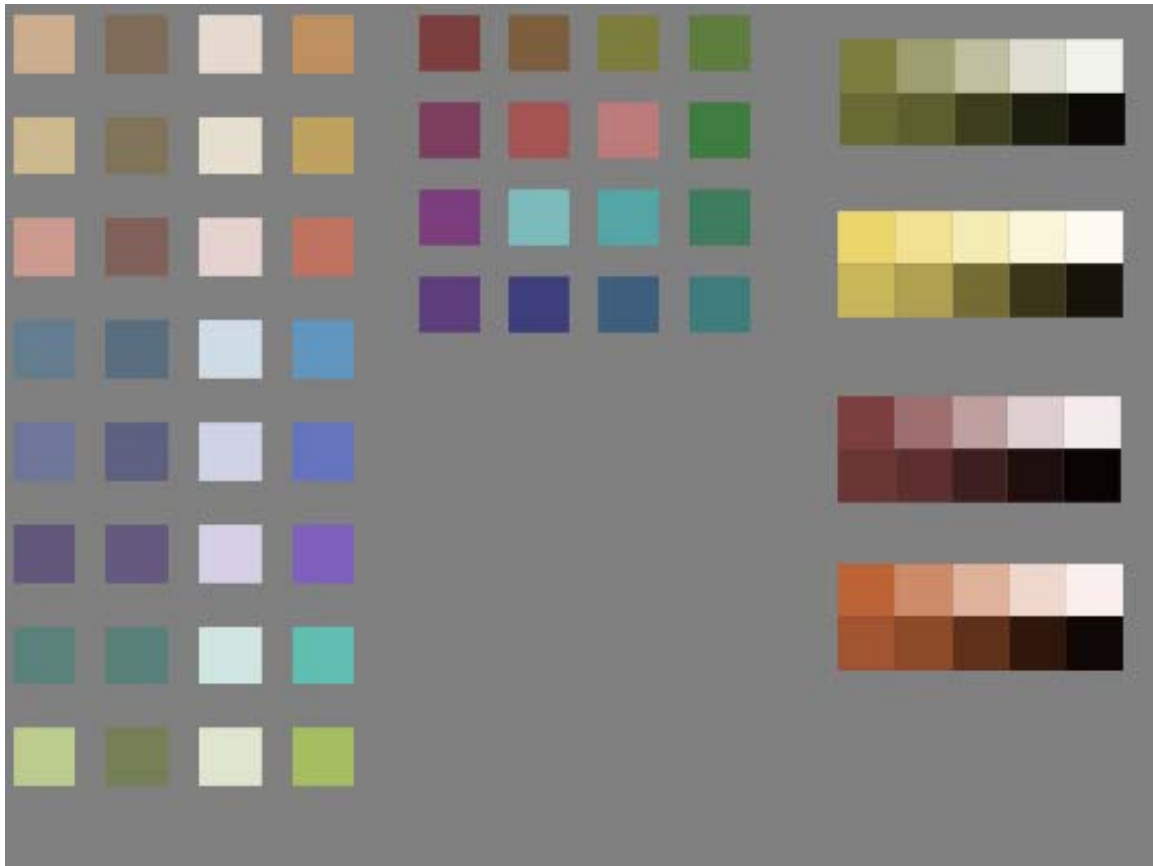
# **Level**

# **Pre-Vis**



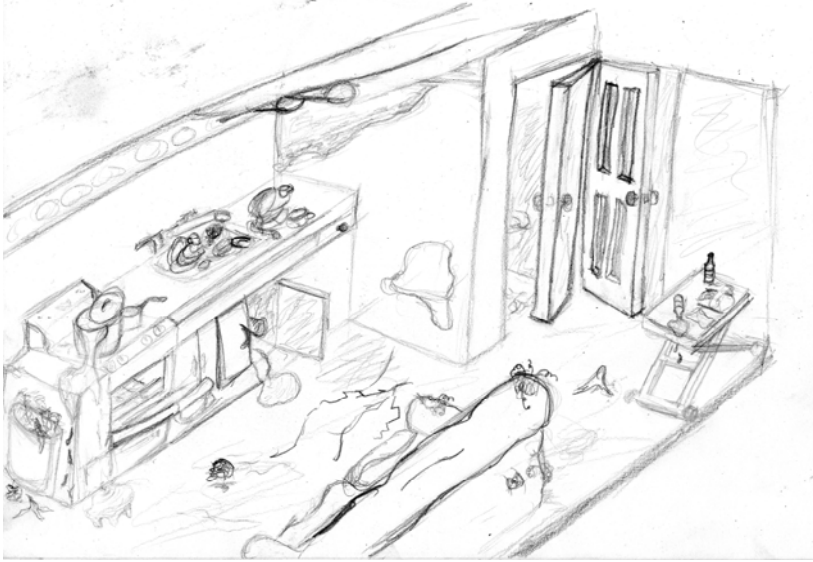
# IX. Level Pre-Vis

## A. Color Palette



## B. Trailer

### Previsualization



### Concept Model



## In Game Screenshot



## Previsualization



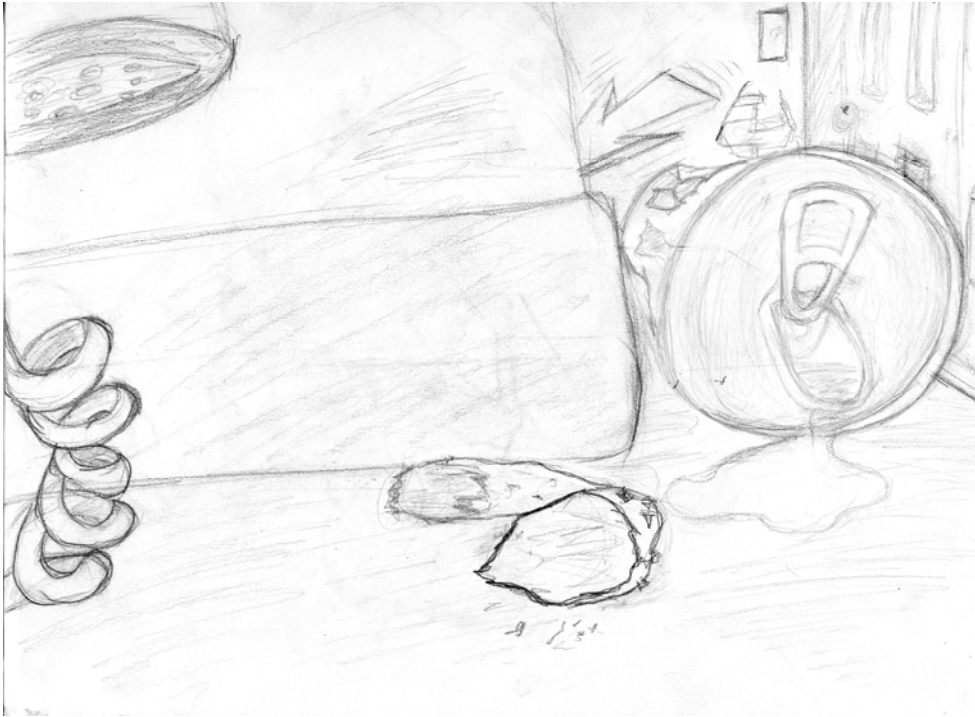
## Concept Model



## In Game Screenshot



## Previsualization



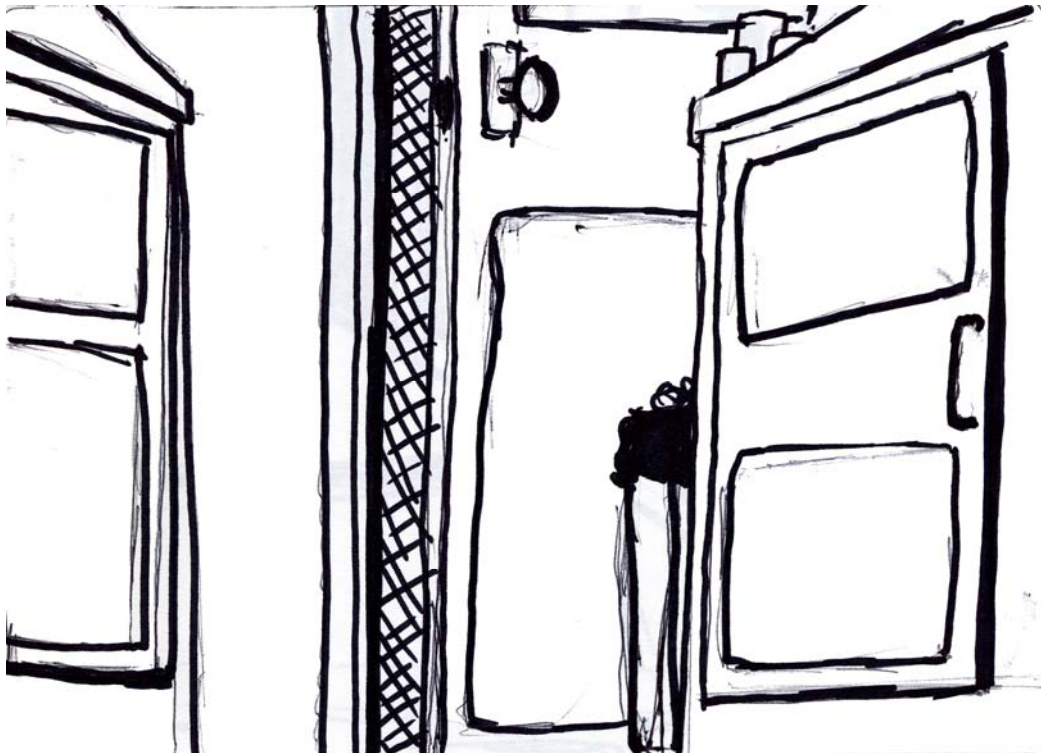
## Concept Model



## In Game Screenshot



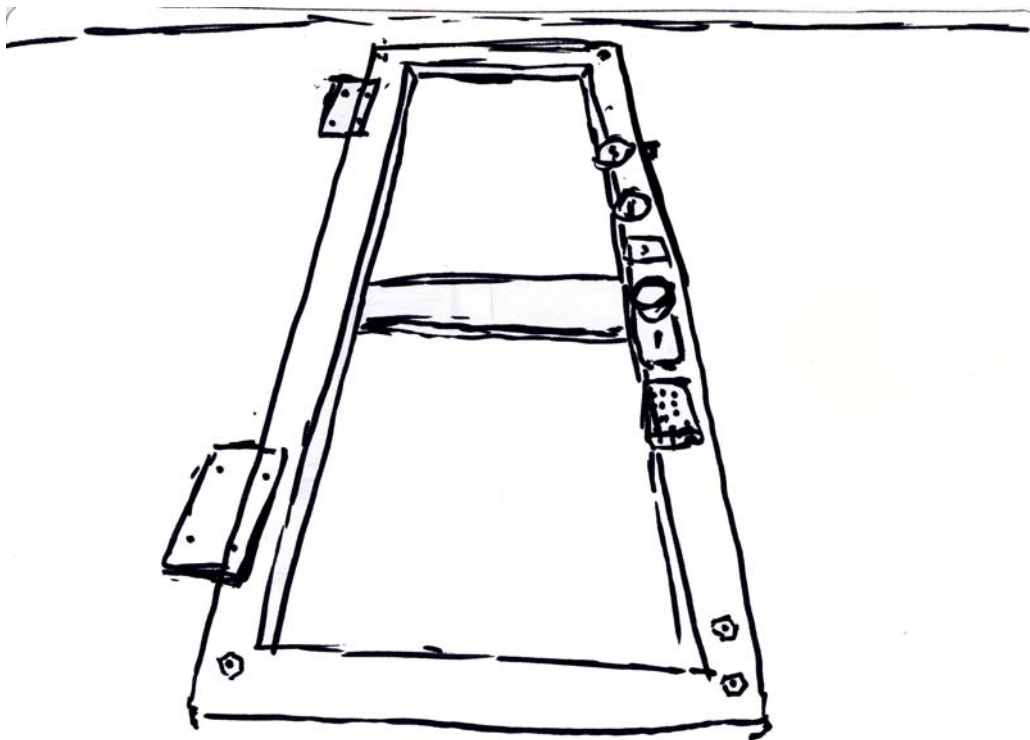
## C. Kitchen



## D. Dining Room



## E. Hallway



## F. Bathroom

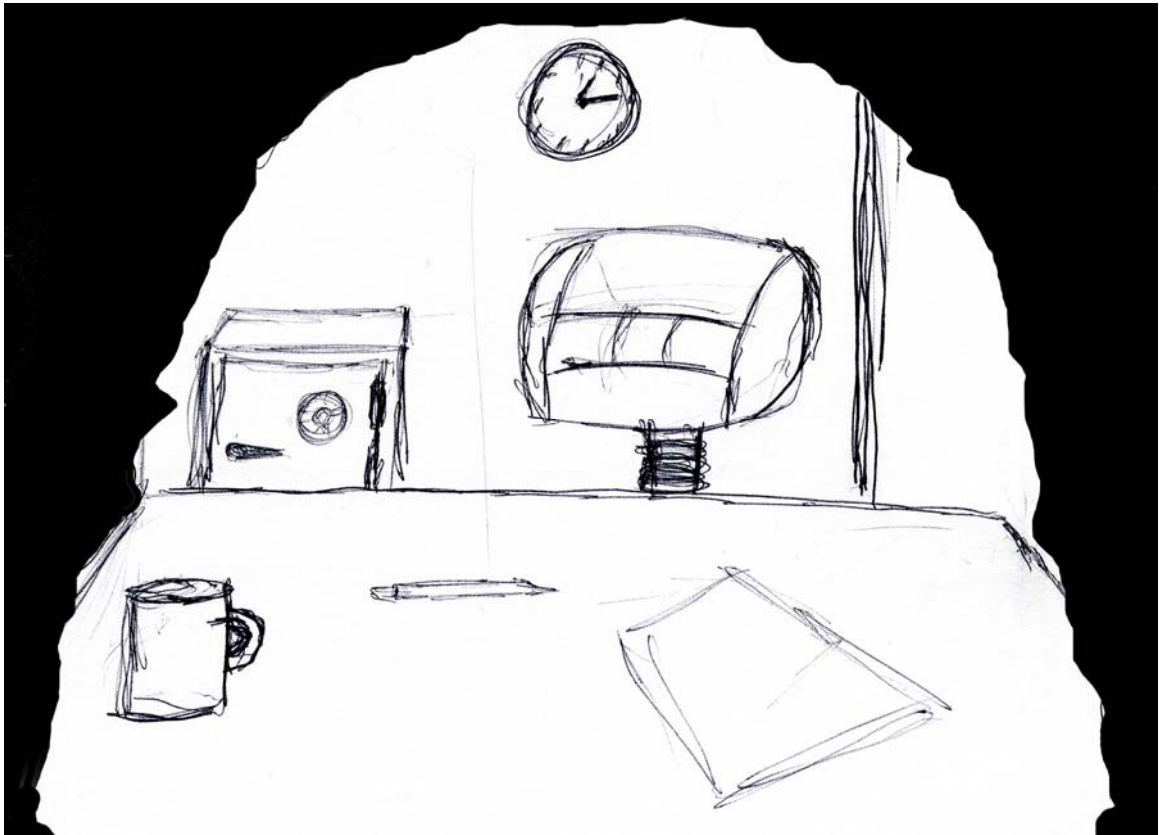


## G. Bedroom





## H. Study (Locked room)



# **X.**

# **Game**

# **Development**

---

# X. Game Development

## A. Introduction

For Moach Rotel, we decided that the Torque Game Engine best fit our needs. The Torque Engine, developed by GarageGames, is an affordable solution which is well suited for large environments.

## B. Learning Torque

### 1. Resources

While the Torque Game Engine does not have a built in help file or reference, most questions can be answered at the following locations on the Internet.

Resources for the Torque Game Engine:

- **Official GarageGames Documentation** (<http://www.garagegames.com/docs/tge/general/index.php>)  
While largely incomplete, the GarageGames Torque documentation provides an elementary introduction into how the engine works.
- **GarageGames Forums** ([http://www.garagegames.com/mg/forums/result\\_area.php](http://www.garagegames.com/mg/forums/result_area.php))  
This is where most of the information of the Torque Engine can be found.
- **CodeSampler Torque Resources** (<http://www.codesampler.com/torque.htm>)  
Kevin Harris' site provides several great, hands-on tutorials and accompanying resources for some of the more complicated programming tasks for the engine, including collisions, bot paths, and triggers.
- **Torque Developer Network** (<http://tdn.garagegames.com>)  
This is an excellent resource where many of the more complicated questions regarding the engine can be found. However, a GarageGames login is required for access.

## C. Workflow

### 1. Modeling

Our modeling software of choice for non-environment objects is discreet's 3D Studio Max version 7. All environments are created in QuArK (Quake Army Knife). Non-environment objects in Torque are **DTS format**, and environments (interiors) are **DIF format**.

### 2. Non-Environment Objects:

#### I. Prerequisites:

##### A. Setting up the Max2DTS Plug-in:

The Max2DTS plug-in must be installed in the plug-ins folder of your 3D Studio Max base installation folder. This plug-in can be downloaded at:

[http://www.garagegames.com/docs/tge/general/files/max2dts/torque\\_max\\_filepack.zip](http://www.garagegames.com/docs/tge/general/files/max2dts/torque_max_filepack.zip).

Once the plug-in is copied to the folder, it must be added to your Utilities Panel.

### B. What about Maya?

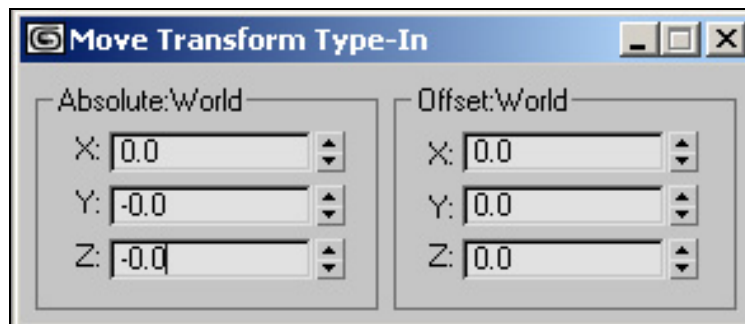
Since we chose 3D Studio Max as our main modeling package, it will be the only modeling package referred to in this document regarding workflow and export. However, Torque DTS support does exist for Alias' Maya modeling package. Detailed information regarding the Maya2DTS exporter and workflow can be found at the following locations:

Maya2DTS Reference Guide: <http://www.dannyngan.com/torque/maya2dts/>  
Torque Documentation: <http://www.garagegames.com/docs/tge/general/ch07.php>

## II. Exporting Non-Environment Objects From 3D Studio Max:

### A. Base Objects:

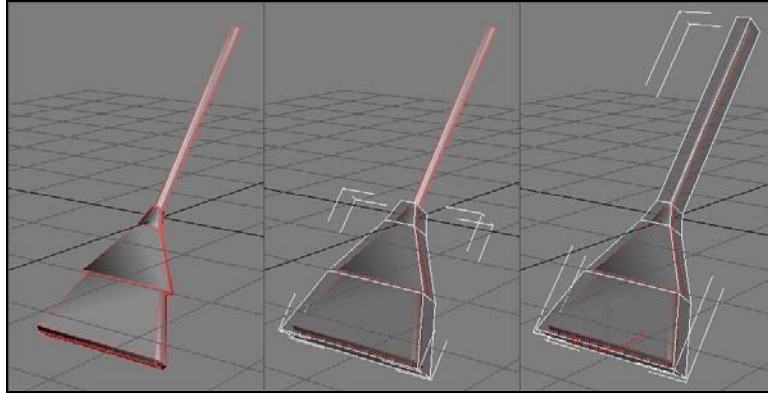
1. The objects are first collapsed to editable meshes and moved to (0,0,0) world space (to do this, first press "W" to enter transform mode, and then press F12 and enter 0 in all three text fields in the dialog box that opens).



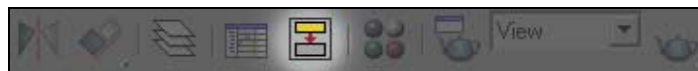
2. A bounding box is drawn around the object and named "bounds".
3. With the object selected, press the button in the DTS Exporter panel labeled "Renumber Selection". In the dialog box popup, enter "2" and press "OK".
4. The object should be renamed "*objectname2*". With the object selected, press the "Embed Object" button.
5. Deselect the object, and press the "Export" button.

### B. Collision Meshes:

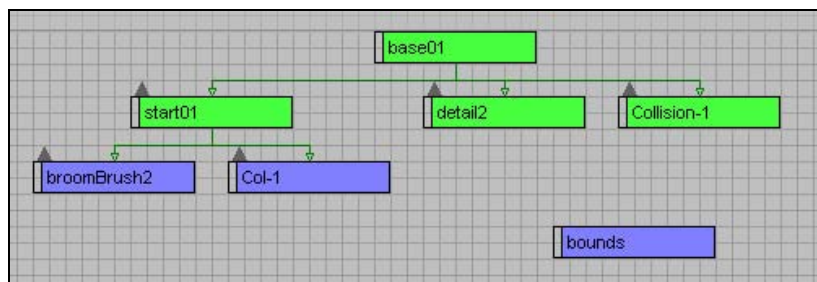
1. Create a mesh around the object within the bounding box. The collision mesh should be around 10-30 polygons, and should be as close to the object as possible. The DTS format supports up to 9 collision meshes per object. Name the mesh "Col-1".



2. Open schematic view.



3. Create a dummy object, name it "Collision-1", and link it to "base01".
4. Link the mesh to the "start" dummy object.
5. Check to see that your tree has the same structure as below:



6. Export using the Max2DTS export plug-in.

### C. Texture Guidelines:

There are several rules that must be abided by when creating textures:

- Only bitmap materials are supported (procedural and material colors are not)
- Multi-sub object maps are supported, only if all the subobjects are bitmap textures
- Texture maps must be sized in powers of two, but do not have to be square, i.e. 32, 64, 128, 256, 512. The maximum bitmap size supported is 512x512.
- Supported bitmap file formats are .png (Portable Networks Graphics) and .jpg (Joint Picture Experts Group).
- All object surfaces must have UV coordinates for their textures to display correctly.
- Translucent materials are supported by Torque. For a material to be translucent, the bitmap must have a stored alpha channel. When applying the texture using the material editor, place the image in the diffuse map slot, and ensure that the 'Opacity' checkbox is enabled. No image is needed in the Opacity mapping slot in the material editor. (It will be important that when using transparent textures that double-sided textures are also used. See below.)

- Double-sided materials are also supported. Do enable double-sided materials, ensure that the '2-sided' checkbox in the material editor is checked. Please note that this feature is disabled by default and is turned on in the DTS exporter utility parameter rollout panel.

#### **D. Texturing WorkFlow:**

##### **I) Unwrapping object's UVW**

1. Collapse Object Modifier Stack.
2. Select UnwrapUVW modifier.
3. Select Edit in roll out options .
4. Mapping > Normal Mapping > Box > OK.
5. From this point you can decide whether to manipulate the coordinates now or to go one set further in the automation process by Mapping > Flatten Mapping. This will separate each faces' coordinates around the texture box relatively evenly, but will require more time welding the 'seams of the coordinates.
6. Rearranging coordinates with Weld Tool by faces, edges and/or vertices, using the Perspective view in highlight shaded mode.
7. Once Coordinates are placed, Collapse the modifier stack again to 'bake' the coordinates to the object.

##### **II) Using the Textporter plug-in:**

1. In roll-out menu: Change the dimensions of the Image to be powers of 2 (in this case I used 1024x1024.
2. Select All Lines, Wrap Around, uncheck Backface Cull, Overlays change to full white, select Constant change color to full black.
3. Pick Object > Select object.
4. Texporter then creates a rendered image of the coordinates which will be used as the base stencil for object texturing in Photoshop: save out image as texture\_(objectname).psd.

##### **III) Creating Textures in Photoshop:**

1. In Photoshop, coloring is then added to the texture using the palette.psd file as a guideline to keep the tone of the colors cohesive.
2. Save out images as .jpg.

##### **IV) Applying texture in 3dsMax7:**

1. Select object.
2. Open Material Editor (hotkey: M).
3. In an empty slot select the Diffuse option in the Maps rollout.
4. Select Bitmap and find the corresponding texter .jpg file.
5. Select Assign Material to Selection option.
6. Material can be previewed when you select Show Map in Viewport option.

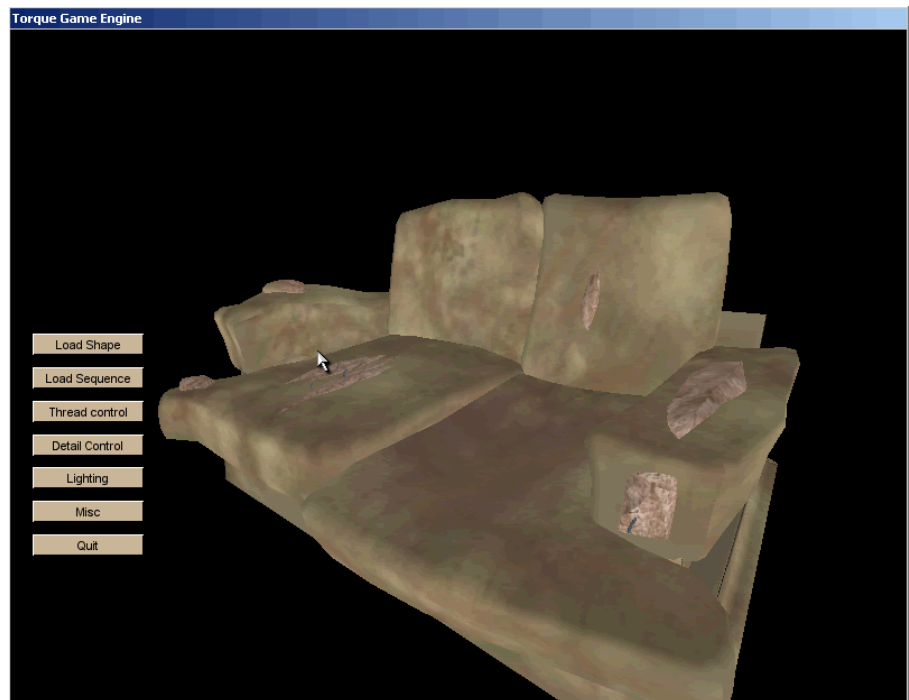
### III. Importing DTS Meshes into Engine

#### A. ShowTool

Exported DTS meshes must be placed in the following folder /data/shapes/. Meshes can be previewed in the Torque ShowTool. The ShowTool is accessed by running Torque from the command line using the show flag:

```
C:\>game.exe -show
```

The ShowTool interface is fairly simple:



Models are previewed by clicking the "Load Shape" button. You will then be given a list of all DTS objects in your data/shapes/ folder. The camera controls are as follows:

Zoom in: W  
Zoom out: S  
Rotate Y left (slow): D  
Rotate Y right (slow): A  
Rotate Y left (fast): X  
Rotate Y right (fast): Z  
Rotate X forward: E  
Rotate X back: C

Within ShowTool, you can adjust lighting and detail control if it has been applied to the object. Once an object looks satisfactory in ShowTool, it can be placed in the environment.

#### B. Placing Objects

To place objects in the environment, press F11 to enter the World Creator. The imported objects can be found in the hierarchy located on the lower left-hand side of the editor. Meshes can then be scaled, rotated, and translated in the World Inspector. It is recommended that most of the transformations are done in the modeling software; many problems exist with the rotation modifiers in Torque.



Be sure to save your mission!

After importing meshes, be sure to save your current mission so your changes are retained when you restart the engine.

## 3. Animated Objects

### I. Introduction:

When it comes to exporting animated objects from 3D Studio Max, Torque is not very forgiving; it can be a tedious and frustrating process if not done correctly. It is also not a process that is well documented, especially for our modeling package of choice. However, once correctly exported, Torque provides a great deal of functionality for the animated objects.

First, some basics:

**Skeleton animation is deformable-skin based, not vertex based.** This is arguably a great aspect of the Torque engine. Less information is stored for each animation, and pleasing animation blending can be easily attained.

**Animation can either be embedded or externally linked.** This is also a positive feature of Torque's animation system. Animation can be stored as a sequence within a DTS object; however, for characters with many animations, it is highly recommended that each animation sequence is stored in an external file, a DSQ. If your characters' all utilize the same skeletal structure, DSQs can be used interchangeably.

### II. Pre-Requisites:

As with static objects, the Max2DTS plug-in is required (See section C.2.1.A. for more information regarding the Max2DTS plug-in.

### III. Animating (and Rigging) within 3D Studio Max:

While I cannot give an extensive tutorial on the basics of animating in 3DSMax in this document, I will provide several tips which simplify the export process.

When animating for Torque, two decisions must be made. First, you must decide whether or not to embed animations within the DTS, or export them as external DSQs. GarageGames recommends simple objects, such as items, have embedded animation, while complex characters with many different motions (running, death, strafing, etc.) should export each animation sequence to a separate DSQ. However, these options are interchangeable. For the scope of our project, we will only be touching upon embedded animation, even for our characters, for the sake of simplicity. Workflows regarding external DSQ animation can be found at <http://www.garagegames.com>.



Another important distinction to make is whether or not you are animating using a skeleton/skin, or simply keyframe animating. This is because your schematic tree structure must be slightly different depending on this decision.

### A. Simple keyframe animation

Objects using simple keyframe animation require very little preparation before export; therefore, after your object has the appropriate keyframes placed, skip to section IV. Preparing Object Hierarchy.

### B. Skeleton/Skin animation

Exporting skeleton/Skin animation is a quite different matter from simple keyframe animation. Characters using a skeleton must be properly rigged and skinned. If you are new to the process of building a skeleton, Jeff Gran (<http://jboy.menlofarms.net>) has written a script for both Max and Maya which will automatically generate a Torque-friendly skeleton after the user has placed appropriate nodes within a character mesh.

TorqueSkeleton for Max:

[http://jboy.menlofarms.net/TorqueSkeleton/TS\\_MAX1.5.3.zip](http://jboy.menlofarms.net/TorqueSkeleton/TS_MAX1.5.3.zip)

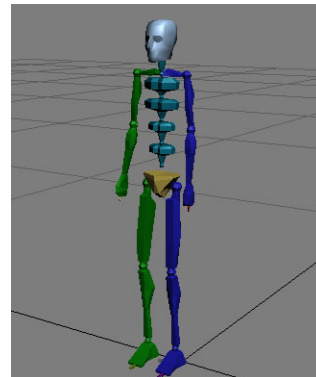
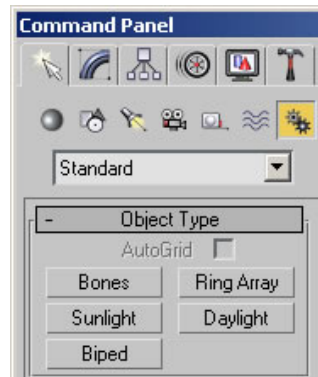
TorqueSkeleton for Maya:

[http://jboy.menlofarms.net/TorqueSkeleton/TS\\_MEL1.5.1.zip](http://jboy.menlofarms.net/TorqueSkeleton/TS_MEL1.5.1.zip)

Online documentation:

<http://jboy.menlofarms.net/TorqueSkeleton/TorqueSkelDocs.html>

3DSMax's built-in biped is also a viable option for those who do not want to build a skeleton themselves. It can be found under the Systems rollout of the Create panel:



However, if you are feeling daring, you can create a custom skeleton for your character. Here are some tips that will save you a great deal of frustration:

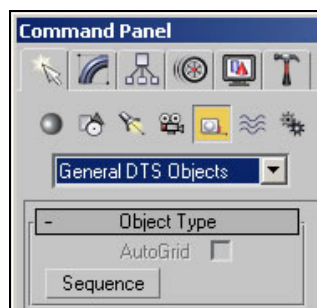
- **Uniquely name each object in the system (this includes bones).** By default, 3D Studio Max appends every new object with a number. Unfortunately, the Max2DTS exporter recognizes object names ending with numbers to be detail or collision markers. If bones or other objects have names ending with numbers, you will more than likely receive the error: "Assertion failed: Too Many Details for Mesh." Doing this up front will save you a great deal of time and frustration later.

- **When skinning, be sure that each vertex is affected by at least one envelope.** The DTS exporter will throw an error if a vertex is not touched by a skin envelope.
- **Abide by recommended poly counts.** GarageGames recommends the following poly counts, and while technically the engine has no limit on geometry, the DTS exporter tends to complain if you start to surpass the highest recommended poly counts for average video cards:
  - Characters: 2250 polygons
  - Vehicles: 1500 polygons
  - Weapons: 500 polygons
  - Other objects: 400 polygons
- **Run an STL Check on your mesh.** GarageGames recommends an STL check is performed on character meshes. An STL check is a 3D Studio Max modifier which determines if the object is able to be exported to a Stereolithography file format (these files are frequently used to produce physical prototype models). The STL check looks for open edges, double faces, spikes in geometry, or double edges, and highlights the broken geometry. This modifier can be added to your mesh using the stack on the Modify panel (**Note: it should be removed before exporting**). Characters with STL incompatible geometry may have flipped normals when previewed in ShowTool.

#### IV. Preparing Object Hierarchy:

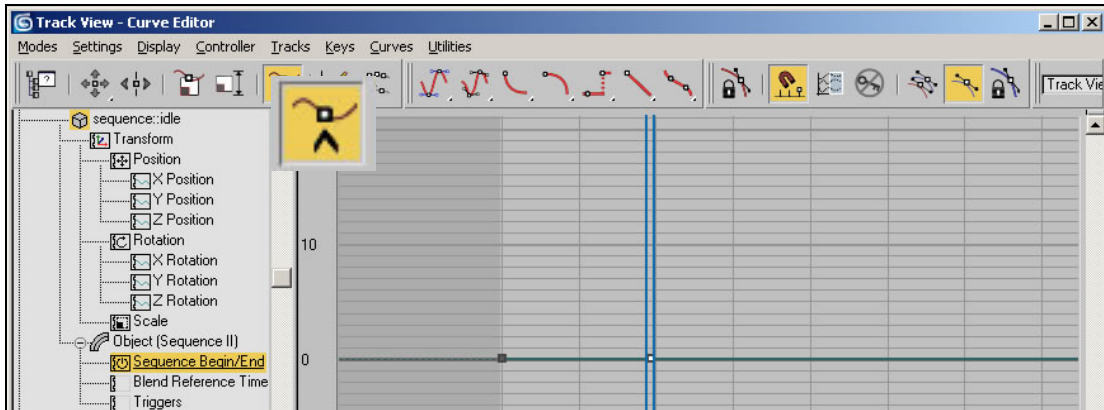
Once your character is properly rigged and skinned, you must perform several vital steps for your animation to be properly preserved.

1. First, a sequence object must be created. These objects can be found on the Create Helper panel, under “General DTS Objects” pulldown. This pulldown will be available if the Max2DTS plug-in was properly installed on your machine.

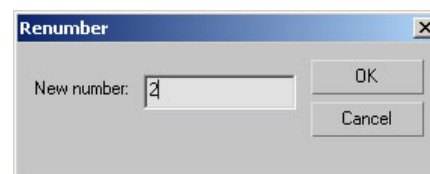
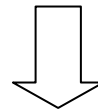
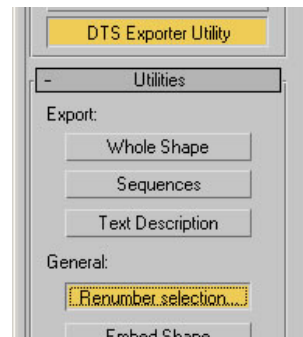


2. Click and drag in your scene to create the sequence helper. Name this object `sequence::actionname`.
3. Next, open your curve editor (also known as Track View in 3D Studio Max).
4. Traverse the tree on the left-hand side of the Curve Editor window to find your object `sequence::actionname`. Expand this branch of the tree to reveal this object's children.
5. Expand Object (Sequence II), and highlight Sequence Begin/End.

6. Using the “Add Keys” tool, create two keyframes, one at the beginning and one at the end of the timeline for the sequence you want to export.

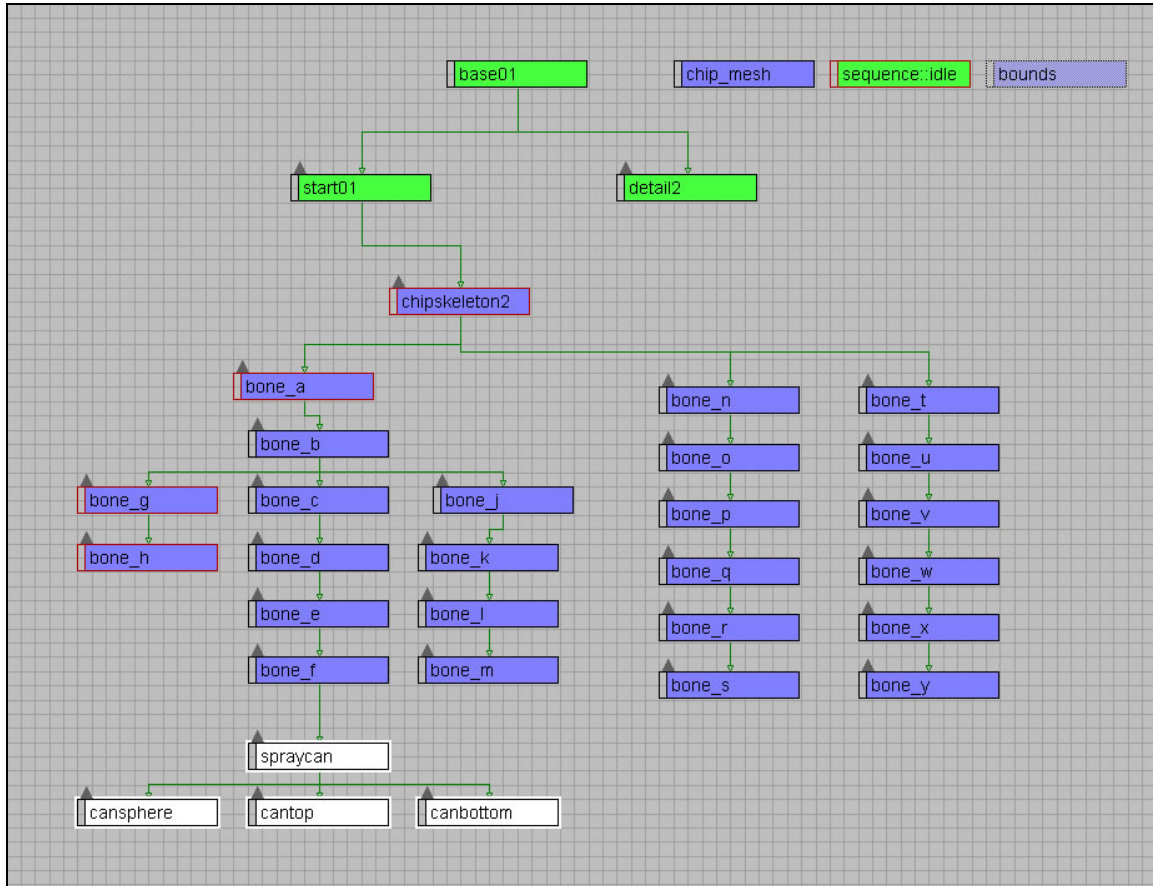


7. Repeat this process for subsequent animation sequences (running, jumping, etc.)
8. Next, create a bounding box and name it “bounds.”
9. Select the root node of the skeleton (**not the mesh**) and, using the Max2DTS, renumber the selection (just like static objects).



10. On the same panel, click the button below “Renumber Selection” labeled “Embed Shape” with the root node of the skeleton selected.

11. Open schematic view. Your tree should be similar to the structure below (barring any differences with your skeleton structure). **Note: The character mesh SHOULD NOT be linked to any dummy nodes or the skeleton in the schematic view.**

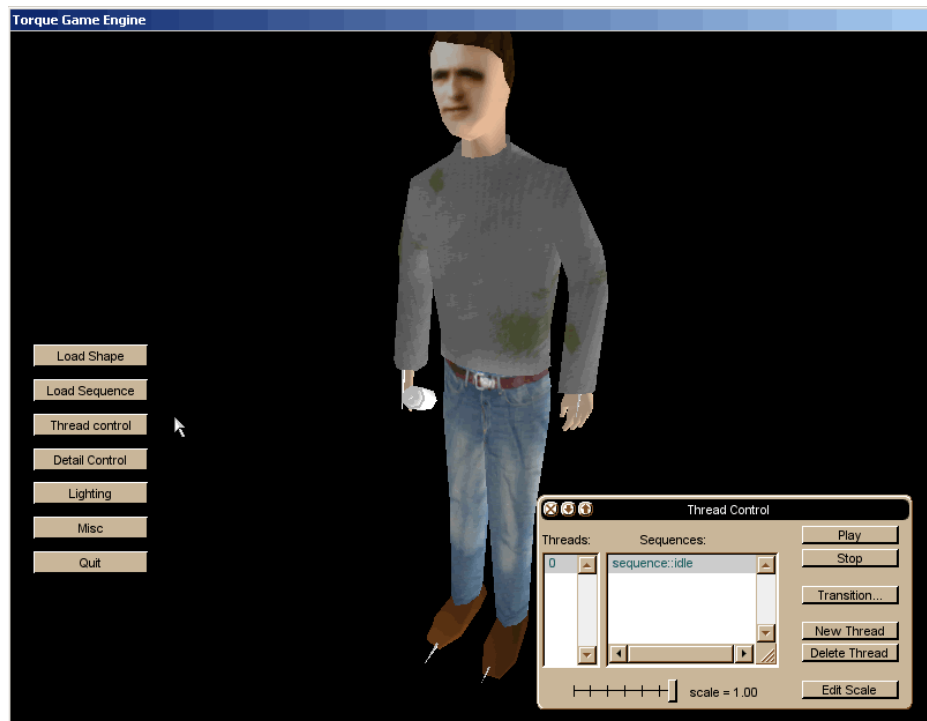


## V. Exporting

Now, your animated model is ready for export. If you want to export separate DSQs, click the Export: Sequences button in the Max2DTS exporter. Otherwise, to embed the animation sequences in your DTS, click the Export: Whole Shape. If no errors were reported, your DTS object is ready to be tested.

## VI. Previewing in ShowTool:

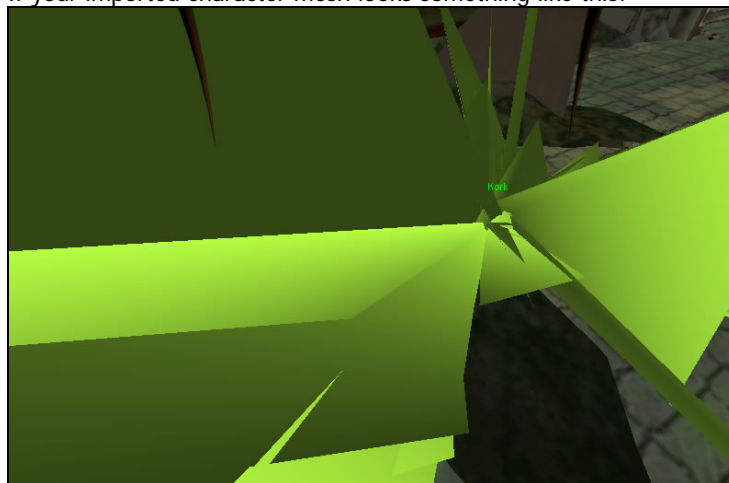
As it can be used for static objects, ShowTool can be used to preview animated DTS objects. After firing up ShowTool from the command line, you can quickly view animation sequences (both embedded or external), as well as preview blending between different sequences. Below is an example of the animation thread control dialog in ShowTool, using our very own Chip Gritcastle:



## VII. Help!

**“I exported the DTS with no errors, previewed it in ShowTool, and everything looked ok. However, when I import the mesh into the engine, it becomes a whirling cloud of polygons!”**

If your imported character mesh looks something like this:



Do not be alarmed. This is an easily fixable problem. According to GarageGames:



“The T2Autodetail scheme introduced at the end of Tribes 2 does not work with deformable meshes. In order to get them to function properly in the game, you must turn off the new detailing scheme. Unfortunately, the last code drop GarageGames received from the Tribes 2 team happened before the switches introduced into the exporter to accomplish this got into the source.

Some versions of Max2DTS still include this information when exporting.

There is a little utility called UnMessDTS that reverts the shapes back to the 'old' way of doing things, and they then work fine in the game engine.

The unMessDTS.exe utility is included in the documentation file pack.”

To run unmessDTS, simply type at the command prompt:

```
C:\>unmessdts.exe broken.dts destination.dts
```

Then, simply re-import *destination.dts* into the engine.

## 4. Environment Objects

### I. Pre-requisites:

Environment creation is done in QuArK (Quake Army Knife). QuArK is available for free download at <http://dynamic.gamespy.com/~quark/>, however, Ken Finney has created an installer for QuArK that automatically configures the software to work with Torque, which can be found here:

[http://www.garagegames.com/docs/tge/general/files/map2dif/quark\\_setup.zip](http://www.garagegames.com/docs/tge/general/files/map2dif/quark_setup.zip). However, if you decide to download QuArK directly from GameSpy, it is recommended that you download the last stable build, at the time of writing this document, is v6.3.0. QuArK v6.3.0 requires Python 1.5, which can be obtained here:

<http://dl.fileplanet.com/dl/dl.asp?quark/minipy15b.exe> (recommended) or here: <http://www.python.org/>. **Python must be installed prior to installing QuArK.**

### II. Using Torque Terrain maps to dirty a level:

The terrain map in the Torque engine is a great tool to create dirty, collision bounded areas of the interior. Colored like dirt and grass, the terrain exists at the bottom of the world environment in Torque. The ideal goal of using this terrain to your advantage is to drag the terrain map up through the interiors floor in desired areas of the map.

To edit the terrain, select the Terrain editor from the Torque toolbar. You will be presented with a "brush" that will stretch the terrain below the map. Note that each bounding box represents a vertex of the terrain below. These vertices can only move in a vertical movement, it is not possible to drag them horizontally. So simply drag them up and down to your desired height. Fine tune the heights of these vertices by scaling the

---

brush size down in the Torque toolbar. By scaling the brush size down to 1x1 to only move one vertex at a time... this is incredibly helpful.

### III. Creating Environments in QuArk

#### A. Modeling:

The reason we chose to use QuArk to create the basic interior of the rooms is because it is a safe and foolproof way to create reliable geometry with built in collisions. However, with this luxury of easy object creation comes many creative restrictions. You are only allowed to create very simple primitives, namely cubes.

The first thing that you must do when creating a map in QuArk is to make sure you have the Game option configured to Torque. To do this, merely select Torque from the drop down Game menu located on the main toolbar of the window. Once this is done, create a new map file under Edit. You will be presented with a default room (4 walls, a ceiling, a floor, 4 pillars and 4 lights). Delete everything to start from scratch.

I have found that creating interiors out of cubes and cube like primitives to be the most dependable way to build a map. To create a box select cube from the left menu. A cube will be placed your map. Now it is important to understand how to manipulate these objects. All cubes come with 5 control points and 8 vertices. The control points control each face of the object (e.g. you can grab a control point on one side and pull it out to create a rectangular polyhedron. This is essentially the main way to resize your objects.

To translate your object to another position, grab the center control point of the object (it is located in the dead center of the object) and drag it to its new location.

To bevel a cube in QuArk, grab on of the vertices and slide it to any position. When you do this, the vertices adjacent to the selected vertices will also move, thereby keeping the object symmetrical on at least 1 axis. Note: When you use this method to modify your object, you must never make your object have a concave side. Concave objects are created using many different objects (creating the concave hollow of a room is done by using 6 cubes).

Now that object translation, scaling and slight modification is possible, it would be nice to know about rotation. To rotate an object, make sure you have the center control point located. If you have a plane control point selected, when you rotate, the object will be undesirably deformed. Now click one of the rotate options in the upper right hand corner. You cannot manually grab and drag an object to rotate which is a downside. However the plus side to this is that the object will rotated in intervals of 15 degrees, making it easy to align the rotation of objects together. When you are done creating and modifying objects that will make up your room, it is time to texture the room.

#### B. Texturing:

Texturing objects in QuArk is quite a frustrating process. To start create a texture you want to using 512x512 pixel dimensions. The reason behind this is that textures must be in factors of 2 (e.g. 512x512, 256x256, 128x128, 64x64, 8x8 ect.) and that scaling textures in QuArk is easy, so why not create the maximum resolution to start with. Textures can also be any combination of these dimensions too. For example a texture can be 512x128 or even 256x8.

Once you have your texture created import it into your texture library by clicking Texture Browser under Toolbars. Under Edit>Import Files>Import (copy) Files browse for your texture and import it. Click ok to the warning. Your texture will now be located in the right hand side browser. To apply this texture

to an object, simply select the object you want the texture on, open up the texture browser and double click it. You may also apply a texture to one face of an object, to do this select the control point of the face you want to apply it to and apply a texture as you would to an object.

This is the basic way to apply textures that I used. However it doesn't get more complicated than that. With no real way to rotate the texture on the object and no UV controls for the texture, it is a matter of trial and error when using textures in QuArk. To scale the texture you can scale the object down in the texture browser window by decreasing the dimensions of the texture by factors of 2. This is a crude way of scaling textures though. All other modifications of mapping is easiest by modifying the object that it is applied to. In other words, if the texture is looping over on an edge of the object, simply scale that edge of the object in.

In conclusion on texturing in QuArk, I would say that what QuArk lacks in user friendliness, it makes up for it by creating a reliable interior with accurate collisions.

### C. Lighting:

Lighting in QuArk is fairly straight forward. To create a light in QuArk, Under Toolboxes click New Map Item. From here open up the "light\_\* entities" folder under Torque Entities. For this map I opted to use "light\_omni". Double click this to place an omni light in your scene. From here move the light around to your desired position. Right click your light and click SPECIFICS. This will tell you all the settings of that light. To change the color modify the 256 256 256 properties. These are RGB colors so figuring out what color you want is an easy process. To increase the intensity of the light, raise the values of the falloffs.

## IV. Exporting DIF Maps:

Before exporting a QuArk map to DIF, it is a good idea to run diagnostics to ensure that the level will be stable. To do so, select "Basic Checks" from the Search pulldown menu. Unfortunately, "Basic Checks" does not find holes in the map reliably (at the time of writing this document, the "Find Holes" menu option in QuArk 6.3.0 is buggy and acts irregularly. It, however, is functional in the alpha3 release of 6.4). Therefore, when building levels, special attention must be paid when building levels, as a level with a gap with no portal will cause the map to be imported and displayed incorrectly.

Once the map has been checked for errors, select "Prepare used textures." This will copy bitmaps used in the level to, by default, C:\QuArk 6.3\Torque\tmpQuArk\textures. Finally, the DIF file must be created. Several options in the Torque pulldown menu exist for doing so:

- **Export MapFile Only:** This options only creates a MAP file, with do accompanying DIF. Since this step is done automatically when creating a DIF, and we are exporting for Torque, this option can be ignored for the most part.
- **Build DIF Only:** This creates a high-detail DIF of the interior. For this to execute properly, a MAP file must already be present. This menu option can also be, for the most part, ignored.
- **Export220Map/Build Low Detail DIF:** This menu option builds the MAP and texture files, but the DIF file does not contain level of detail (LOD) information. This menu option is useful for testing a single LOD of an interior, without other LOD information being included.
- **Export220Map/Build High Detail DIF:** This is the menu option used most often. A MAP file is created, then exports a DIF with all options, including LOD.



Select "Export220Map / Build High Detail Dif" from the Torque pulldown menu. **For this procedure to work correctly, the application map2dif\_DEBUG.exe must be installed on your system.** map2Dif is a tool which performs many important functions, including builds the portal tree for visibility testing on the map, creating a BSP tree for collisions, and baking lightmaps for the level. By default, map2Dif is installed to the C:\QuArK 6.3\Torque\tmpQuArK folder, but this location can be changed in the Options > Configuration... menu under Games -> Torque -> Game Settings. map2Dif can be obtained from GarageGames:

<http://www.garagegames.com/docs/tge/general/files/map2dif/map2dif.zip>.

map2Dif\_DEBUG can also be run from the command line. Below is the usage of the utility and its available options:

```
map2dif -options file.map

-v          print program version information
-p          include a preview bitmap in the interior file
-d          process only the detail specified on the command line-l
            process as a low detail shape (implies -d)
-h          process for final build (exhaustive BSP search)
-g          generate navigation graph info
-e          do extrusion test
-n          noisy error/static reporting
-s          don't search for textures in parent directory
-q [1,2]   parse Quake map file, version 1 or 2
-o dir     output directory to place the dif file
-t dir     location of textures
```

## V. Importing DIF Maps into the Engine

If map2Dif completes without error, two files will be created in the C:\QuArK 6.3\Torque\tmpQuArK\Maps folder, a DIF file and a MAP file. These files, along with prepared textures, must be copied into the Torque Game Engine file tree, under \data\interiors. DIF files can be accessed from this folder or any subsequent subfolder. Textures should be placed either in the \data\interiors folder or the same subfolder as the DIF.

To bring the new interior into the game, press F11 to enter the Mission Editor. Select the World Editor Creator, and browse the creation object tree to locate the new map. Select the interior, and press Ctrl + L to relight the scene.

## D. TorqueScript

### 1. Language

TorqueScript is a case-insensitive language very similar in structure and syntax to C++. Below are several of its key features:

#### I. Functions

Functions are defined in the following way:

```
function className::functionName(%this, argument1,  
argument2, ...)
```

TorqueScript functions also allow for values to be returned. In addition, TorqueScript supports dynamic loading and unloading of functions (visit [http://www.garagegames.com/docs/tge/general/ch05s02.php#scripting\\_language\\_packages](http://www.garagegames.com/docs/tge/general/ch05s02.php#scripting_language_packages) for more information on packages), provides namespaces, and allows for arguments to be passed by-value and by-reference.

## II. Data Types: Variables and Arrays

Variables in TorqueScript exist in two scopes: local and global. Local variables exist only within the structure in which they are created; global variables, on the other hand exist for the life of the program and are accessible at any depth. Global variables are denoted by a preceding \$, while local variables are preceded by a %.

TorqueScript is a type-insensitive language, meaning that variables do not need to be explicitly typed, are converted as necessary, and are able to be used interchangeably. The basic literal types TorqueScript supports are:

### Numbers

- Integer (123)
- Floating Point (123.456)
- Scientific Notation (1234e-3)
- Hexidecimal (0xc001)

### Strings

- String ("hello world")
- Tagged String ('hello world')
  - Note: tagged strings are used for sending information across a network; each string contains a unique numeric tag along with the string data.

### Boolean

- True (1)
- False (0)

### Arrays

- Single-dimension (%arrayname[index])
- Multi-dimension (%arrayname[index1, index2])

Arrays are accessed in very much the same way they are accessed in languages such as C++, using square brackets:

```
%arrayname[index];
```

Interestingly enough, TorqueScript provides another way of accessing specific indexes within an array, specifically, without square brackets. So, \$array[0] and \$array0 are synonymous.

Multi-dimensional arrays can also be accessed in an alternate way, using the \_ operator:

```
$multiarray[m,n] == $multiarray[m_n]
```

## Vectors

Vectors are denoted by a quoted list of space-separated values. For example, "1.0 2.4 3.6" represents a 3-element vector. This data type is extremely prevalent throughout the engine; most input to the World Editor and game methods take vectors as input.

## III. Operators and Escape Sequences

### Postfix

---

[]	Subscript
,	Separate indexes in multi-dimensional array subscript
_	Separate indexes in multi-dimensional array subscript

### Mathematical

---

+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Modulus

### Assignment

---

=	Assignment
+=	Addition and assignment
-=	Subtraction and assignment
*=	Multiplication and assignment
/=	Division and assignment
%=	Modulus and assignment
<<=	Left bit shift and assignment
>>=	Right bit shift and assignment
=	Bitwise OR and assignment
&=	Bitwise AND and assignment
^=	Bitwise XOR and assignment

### Unary

---

++	Increment
--	Decrement
!	Logical negation

### Bitwise

---

~	Bitwise NOT
	Bitwise OR
&	Bitwise AND
^	Bitwise XOR

### Shift

---

<<	Left bit shift
>>	Right bit shift (sign-propagating)

### String

---

@	Concatenation of one or more values
NL	Concatenation of one value with a new line
TAB	Concatenation of one value with tab
SPC	Concatenation of one value with space

### Logical

---

&&	Logical AND
	Logical OR

### Relational and Equality

---

==	Evaluation of equality
!=	Evaluation of inequality
<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to
\$=	String equality
!\$=	String inequality

### Carriage Returns

---

\n	Newline
\r	Carriage return
\t	Tab
\c0...\c9	Colorize subsequent text
\cr	Reset to default color
\cp	Push current color on color stack
\co	Pop color from color stack
\xhh	Two digit hex value ASCII code
\\	Backslash

## IV. Control Structures

Also like C++, TorqueScript recognizes all standard programming constructs, such as if-then-else, for, while, and switch.

## V. Objects and Datablocks

TorqueScript is an object-oriented language; in fact, every item in the game worldspace is an object, and therefore all accessible by script. TorqueScript supports object inheritance as well as polymorphism, meaning that objects within the engine can inherit attributes from other objects, and object methods can be extended.

Datablocks are central to the creation of most objects in the engine, and, by definition, are "special objects that are used to transmit static data from server to client" (engine.overview.txt: TGE SDK), and each datablock contains attributes which can be used as a template to create new objects.

Datablocks will be briefly touched upon later in IV. Character Switching, but for more information regarding datablocks, visit

<http://www.garagegames.com/docs/tge/general/ch05s04.php>.

## 2. Compiling TorqueScript

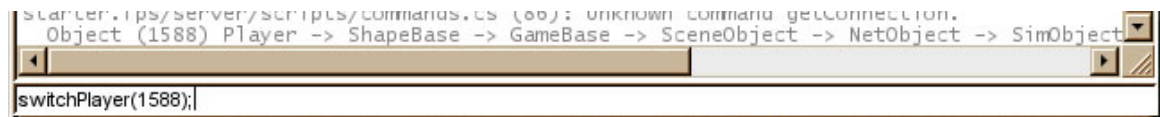
The Torque game engine compiles PCODE prior to execution, increasing speed and allowing for easier diagnosis of errors. When a change is made to a TorqueScript file, it must be recompiled. This can be done by restarting the game; however, the previous compiled script (.dso) is not always removed automatically, and you can force a recompile by deleting the corresponding .dso file. When you restart the game, a new .dso file should be created. If not, check the console.log file located in the base directory for errors.

## 3. Torque Console

The **console**, which is accessed by pressing the '~' key, can be used to run commands or can be used for debugging. The `echo` command will send messages to the console.

**Functions** can also be called from the console. Functions recognized by the console can be found in `serverConnection.cs` under `client/scripts/`.

The command typed into the console:



calls the following code:

```

client/scripts/serverConnection.cs
-----
function switchPlayer(%actorid)
{
    commandToServer('SwitchToPlayer',%actorid);
}
  
```

## 4. Game Specific Code

### I. Triggers

#### A. What is a trigger?

**Triggers** are areas that, when stepped into by the player, cause other pieces of code to be run. Triggers are created in the World Creator (F11), and are located under "Mission Objects" in the Object Tree. They are represented by wireframe cubes in the World Inspector. The trigger can then be scaled using either the World Inspector, or by Ctrl+Alt+Clicking on sides of the trigger. When a new trigger is created, a behavior must be attached to the new trigger.

#### B. Behaviors

You can modify behaviors attached to triggers by modifying the `triggers.cs` file, located in the `/server/scripts/` folder. Each basic trigger script is made up of an object constructor and three basic behaviors. A trigger is a datablock, and a trigger object constructor is defined by the following:

```
datablock TriggerData(TriggerName)
```

```
{
    // code to be executed during creation here
};
```

The three basic behavior functions linked to a trigger are the following:

- `onEnterTrigger`: This code is executed when the trigger is entered
- `onLeaveTrigger`: This code is executed when the trigger is left
- `onTickTrigger`: This code is called every interval defined by `tickPeriodMS`, which is by default 100 milliseconds.

### C. Functionality: Safe Areas

For our game, we will be utilizing triggers to notify the server when the player steps into a safe zone or egg drop area. To do so, first we create a flag in each character profile (`player_charactername.cs` in `server/scripts/`; refer to section IV.B. for more information on creating character profiles):

```
isSafe = false;
```

Then, we modify these flags when a player enters or leaves the trigger:

```
server/scripts/triggers.cs
-----
function SafeZoneTrigger::onEnterTrigger(%this,%trigger,%obj)
{
    ...

    if (%obj.client) {

        // retrieve player handle
        %player = %obj.client.player;

        // set flag for safe
        %player.isSafe = true;
    }

    ...
}

function SafeZoneTrigger::onLeaveTrigger(%this,%trigger,%obj)
{
    ...

    // retrieve player handle
    %player = %obj.client.player;

    // set flag for unsafe
    %player.isSafe = false;

    ...
}
```

This flag can then be checked using a conditional if statement through the %player object:

```
if (%player.isSafe == true) { ... }
```

## II. Player Attributes

Information about particle systems, sounds, methods, and attributes linked to the player can be modified in player.cs, located in the /server/scripts folder.

## III. Sending Messages to the GUI

Messages, by default, are sent to the HUD using the following function:

```
messageClient(%client, %msgType, %msgString, %a1,
%a2, %a3, %a4, %a5, %a6, %a7, %a8, %a9, %a10, %a11,
%a12, %a13)
```

Since the function does not allow you to concatenate strings and variables in %msgString, the arguments following the message string argument are optional, and can be used to include variables in the string, and are accessed using %1, %2, etc. For example:

```
messageClient(%user.client, 'MsgItemPickup', '\c0You
picked up %1 (%2 of %3)', %this.pickupName,
%user.getInventory(%this),
%user.maxInventory(%this));
```

This function is called when an item, such as a breadcrumb is picked up. It displays the following output to the screen:



## IV. Bot Path Following

### A. Code

The driving force behind npc path following can be found in the aiPlayer.cs file in the /server/scripts folder. The following AI function template is built into the engine:

- DemoPlayer Datablock
  - onReachDestination(%this, %obj)
    - If the current node is the target node, call onEndOfPath(). Otherwise, move to next node in path.
  - onEndOfPath(%this, %obj, %path)
    - Upon reaching last node in path, call next task in queue.
  - onEndSequence(%this, %obj, %slot)
- AIPlayer Datablock
  - spawn(%name, %spawnPoint)
  - spawnOnPath(%name, %path)
  - followPath(%this, %path, %node)
  - moveToNextNode(%this)

- o moveToNode(%this,%index)
- o pushTask(%this,%method)
- o clearTasks(%this)
- o nextTask(%this)
- o executeTask(%this,%index)
- o singleShot(%this)
- o wait(%this,%time)
- o done(%this,%time)
- o fire(%this,%bool)
- o aimAt(%this,%object)
- o animate(%this,%seq)
- AIManager Datablock
  - o think(%this)
  - o spawn(%this)

## B. Paths in the World Creator

Enter the world creator by pressing F11. Paths and path markers can be found in Object Creation tree under "Mission Objects". First, a path object must be created. To do so, click on the path object in the tree. You will be asked to name the path. After doing so, Alt + Click on the newly created path in the Object inspector tree. If done correctly, the path will be highlighted grey; newly created path markers must be children of the path. With the path highlighted, click on a path marker in the object creation tree. You will be asked to name the path marker. Your new path marker should now be a child of the path object. Use the XYZ translation tool in the world editor to move the point where desired. As path markers are added to the path, the npc's path will be shown, in green, in the world editor. Be sure all points are well above the ground, so when the npc spawns on the path, it does not fall through the floor. Be sure to save your mission, and restart the engine.



Be sure to save your mission!

## C. Tying it All Together

In aiPlayer.cs, the function that tells the engine to spawn the npc on the newly created path is `spawn()`, a member of the `AIManager` class. Within, a call is made to `spawnOnPath`, which specifies which path the bot is bound to, in its second argument call. The path is defined by an absolute traversal of the tree, starting at "MissionGroup/". Modify this argument to lead to your newly defined path. In the next line, change the argument of the `followPath` function to also point to your newly defined path

If all steps were done correctly, a npc should be following your new path.

## IV. Character Switching

### A. Design Introduction



For Moach Rotel, gameplay required the player to be able to switch characters once inside safe zones and egg drop points. However, this functionality is not included in the base engine, so it had to be custom built. Anthony Lovell's article on unifying GameConnection and AIConnection functionality entitled "**Actors – Players and AIPlayers all-in-one**" (<http://www.garagegames.com/index.php?sec=mg&mod=resource&page=view&qid=8503>) provided a great starting point. His code provided the basis for our own character switching functionality.

## B. Defining Player Characteristics

First, each character must be distinctly different, each having their own strengths and weaknesses. So, using the player attribute template (player.cs), located in /server/scripts/ as stated earlier, I created a new datablock for each character, each in a separate file (player\_<charactername>.cs).

```
datablock PlayerData(CorkyData) { ... }
datablock PlayerData(PercyData) { ... }
datablock PlayerData(FlapsData) { ... }
```

## C. Creating the Characters

Once we have the characters' attributes defined, we next spawn them in the level. This is done in game.cs, also in server/scripts/.

```
server/scripts/game.cs
-----

function GameConnection::createPlayer(%this, %spawnPoint)
{
    if (%this.player > 0) {
        // The client should not have a player currently
        // assigned. Assigning a new one could result in
        // a player ghost.
        error( "Attempting to create an angus ghost!" );
    }

    // Create the player object
    %player = new Player() {
        dataBlock = CorkyData;
        client = %this;
    };
    $playerIDArray[0] = %player.getID();
    %player.isAvailable = true;

    MissionCleanup.add(%player);

    // Create additional player objects
    %player2 = new Player() {
        dataBlock = FlapsData;
        client = %this;
    };
    $playerIDArray[1] = %player2.getID();
    MissionCleanup.add(%player2);

    %player3 = new Player()
    {
        dataBlock = PercyData;
```

```

        client = %this;
    };

    $playerIDArray[2] = %player3.getID();
    MissionCleanup.add(%player3);

    // Player setup...
    %player.setTransform(%spawnPoint);
    %player.setShapeName(%this.name);

    %player2.setTransform("528.488 196.206 256.465 0 0 -1
90.1593");
    %player2.setShapeName(%this.name);

    %player3.setTransform("417.718 277.321 233.756 0 0 -1
93.3921");
    %player3.setShapeName(%this.name);

    // Update the camera to start with the player
    %this.camera.setTransform(%player.getEyeTransform());

    // Give the client control of the player
    %this.player = %player;
    %this.setControlObject(%player);
}

```

One problem I kept encountering when I first wrote this functionality was that, if the game was run on a machine other than the one it was being developed on, or other objects were added to the mission, the engine would either lock or crash. After testing, it was determined that the engine dynamically assigned IDs numbers to objects at runtime. Therefore, we needed to store character IDs in a global array, generated at load time, which could be later accessed from anywhere in the game, including functions called by keyboard mappings.

```

$playerIDArray[0] = %player1.getID(); // Corky
$playerIDArray[1] = %player2.getID(); // Flaps
$playerIDArray[2] = %player3.getID(); // Percy

```

This assured that every time the game was run, the correct object ID numbers for the characters would be used.

#### D. The Meat

The actual character switching function is adapted from Anthony Lovell's source (located in `commands.cs` in `server/scripts/`). Note that several modifications were made, such as the line to check the appropriate flag to see if a player is standing in a safe zone (see Section 3.1.C. regarding triggers for a in-depth description).

```

server/scripts/commands.cs
-----

function serverCmdSwitchToPlayer(%client, %actor)
{
    // retrieve player handle
    %player = %client.player;

```

```

// check to see if its safe to switch characters
if (%player.isSafe == true) {

    if (isObject(%actor)) {
        if (isObject(%actor.getConnection())) {
            return;
        }
    }

    if (isObject(%client.player)) {

        %oldPlayer = %client.player;
        %client.player = 0;
        %oldPlayer.client = 0;
    }

    if (isObject(%actor)) {

        %control = %actor;
        %control.mode = observerFly;
    }

    // transfer control
    %client.player = %actor;
    %client.setControlObject(%control);
}

```

### E. Giving the Player Control

Finally, we must map this function to a key binding, so that the player will be able to call this function at will. Code to edit the key mapping can be found in the client/ within the default.cs file.

```
client/default.cs
```

```

-----

moveMap.bindCmd(keyboard, "1",
"commandToServer(\'switchToPlayer\', $playerIDArray[0]);", "");
moveMap.bindCmd(keyboard, "2",
"commandToServer(\'switchToPlayer\', $playerIDArray[1]);", "");
moveMap.bindCmd(keyboard, "3",
"commandToServer(\'switchToPlayer\', $playerIDArray[2]);", "");

```

Now, whenever a player presses a number key 1-3 when standing in a safe zone, control will be transferred to the appropriate character.

---

## D. Change log

### 0.0.0.1

Preliminary experimentation with the engine. Opened GUI editor and made simple main menu and placeholder HUD. Imported simple room from QuArK and imported several objects. Experimented with sending messages to HUD chat window, as well as picking up items. Also experimented with trigger areas and basic particle systems.

### 0.0.0.2

Successfully imported collision-meshed objects into the scene.

### 0.0.0.3

Experimented successfully with bot path-following using GarageGames pre-built character.

### 0.0.0.4

Included in this build is the first version of the prototype level, with basic lighting and textures. Barely any objects are imported at this point; the few that are imported, i.e. broom and couch, lack textures. This build includes our first version of character switching functionality.

### 0.0.0.5

More household objects are being imported into the level. Several objects still do not have textures (couch) or collision meshes. More advanced lighting has been added (flickering lights, etc.). Several objects such as the bat have a bug in which they are disappearing once a majority of the mesh is out of view. The inventory can still only hold one breadcrumb, and breadcrumbs spawn after being collected, errors that still needs to be fixed. The location of collectables are being determined. Terrain is being pulled through the floor using the Torque terrain editor to simulate mounds of dirt and grime.

### 0.0.0.6

Dirt and grime texturing has been fixed. Bug found in character switching functionality; object ID's of characters assigned by the engine changes on a machine-to-machine basis, or once new objects are added, which results in the engine locking or crashing. Added Chip's path of movement, and successfully imported test character; however, Chip model is still not importing correctly. Refining location of collectables.

### 0.0.0.7

Location of collectables has been finalized. Fixed bug with disappearing objects (incorrect bounding box after object is translated/rotated inside engine). Fixed character switching bug by modifying function to automatically cache character object ID's dynamically as the engine loads. Updated loading screen and HUD. All objects imported with textures, but several collision boxes are missing. Fixed error with breadcrumb texture (bitmap was not sized in power of two).

---

# XI. APPENDIX: The Script

## A. Prologue

ACT I

INT. TRAILER -- NIGHT

The inside of the trailer is dirty and disgusting.

CORKY  
Where are we going

CORKY'S MOM  
To our new home

CORKY  
Why do we have to move?

CORKY'S MOM  
We are moving to a nicer place

CORKY  
Hey Mom, Dad wait up

CORKY'S MOM  
Oh no Corky run!

CORKY  
Wait!

CORKY  
No!

CORKY  
You killed my parents I can never  
forgive you

END OF ACT

## B. Trailer

ACT II

FADE IN:

INT. TRAILER -- DAY

Loud crashing noise coming from the corner, followed by drunken  
grumbling

CORKY approaches FLAPS (mission)

CORKY  
What is wrong with you

FLAPS

I got into a box of wine last  
night, ughhh, my head is killing  
me

CORKY

Box of wine?

FLAPS

Yeah a box of wine, not quite the  
German hops I am used to , but it  
makes due

FLAPS

Hey, why don't you make yourself  
useful and get me some bread

CORKY

Why should I get you some brae, I  
don't even know you

FLAPS

I'm Flaps, and if you don't get  
me some bread mi afraid I might  
vomit

CORKY

Yeah fine I'll get you some bread

Begin mini-game (Collection)

CORKY

Stupid drunk, I better get  
something out of this

End mini-game

CORKY

Here's your bread drunk

FLAPS

Let's not judge people, oh man  
that's good bread

FLAPS

Ok, now I need you to get me some  
aspirin

CORKY

No goddamn way, I just ran all  
over this trailer so you can  
sober up, what am I getting out  
of this

FLAPS

No need to get angry, I will lend  
you my services

CORKY

Great, what is that gonna do for  
me, the last thing I need is a  
drunken servant

FLAPS

Hung-over

CORKY

Whatever let's go

FLAPS finds PERCY on counter (mission)

PERCY  
Ohhhhhhhh

FLAPS  
What the hell are you moaning  
about,  
(belch)

PERCY  
I'm so lonely

FLAPS  
Well yeah, your chubby and your  
whinny who would want to hang out  
with you

PERCY  
Nobody likes me

FLAPS  
And?

PERCY  
And I have never talked to a  
woman

FLAPS  
Surprising

PERCY  
If your not going to help I would  
rather be alone

FLAPS  
Hold on, I never said that. I  
know some information that might  
help you out

PERCY  
Really?

FLAPS  
Yeah really, rumor has it there  
is a chick in this trailer who  
loves, um, hefty men

PERCY  
Am I hefty?

FLAPS  
I wouldn't put it past you

FLAPS  
Alright so what can you do to  
attract her attention

PERCY  
I can hiss

FLAPS  
Oh impressive, well it will have  
to do

FLAPS  
Go get em kid

PERCY finds FEMALE (mission)

Hey big fella FEMALE

Huh, huh, hi PERCY

Was that you making that pretty noise FEMALE

Uh, well I was hissing PERCY

Do it again FEMALE

(hiss) PERCY

Ohhhh, here take my eggs FEMALE

Um, ok PERCY

Hiss again FEMALE

(hiss) PERCY

(moans) FEMALE

Excuse me PERCY

(moans) FEMALE

What do I do with these PERCY

(moans) FEMALE

Well that wasn't what I expected PERCY

PERCY returns to FLAPS (mission)

How did it go FLAPS

She gave me her eggs PERCY

No way, you are something FLAPS

What do I do with them PERCY

Oh you were serious, I thought that was a metaphor FLAPS

Nope she gave me her eggs PERCY



FLAPS

Well I have no idea

PERCY

Thanks for the help, is there anything I can help you with

FLAPS

Well I am kinda indebted to this guy, in fact I don't even know his name

FLAPS

Regardless you should come along with us

PERCY

That would be great

FLAPS

Let's go

FLAPS and PERCY head back to CORKY (mission)

CORKY

Who is this

PERCY

My name is Percy

FLAPS

What is your name, oh exalted one

CORKY

You were to drunk to ask, it's Corky

FLAPS

And why am I following you around

CORKY

You are following me because I fed your sorry drunk ass

FLAPS

Yeah I know that but what are you doing?

CORKY

Do you know the owner of this place

FLAPS

I have seen him around

PERCY

Chip's a bad man

FLAPS

He's not so bad

CORKY

He killed my parents

FLAPS

I take that back

PERCY

I am sorry

CORKY

I want to kill him

FLAPS

That's a little violent don't you think

CORKY

He killed my parents

FLAPS

Fine, fine

PERCY

What do I do with these eggs?

FLAPS AND CORKY

What?

PERCY

I have eggs

CORKY

Does it hurt?

PERCY

No, a woman gave them to me

CORKY

Congratulations

CORKY

Hold on are those roach eggs?

PERCY

I think so

FLAPS AND CORKY

I would hope so

CORKY

We can use those

PERCY

That is what I've been asking

CORKY

We can put them around this place to infest it with roaches

PERCY

More friends?

CORKY

No to drive out that son of a bitch who killed my parents

FLAPS

Don't you think that's a little excessive

CORKY

Will you stop with that

FLAPS

Lets go populate this place

After eggs are placed

FLAPS OR PERCY OR CORKY

That's all the eggs, let's get  
out of here

At exit

PERCY  
Where are you going?

CORKY  
To Chip's house, you can come if  
you want

CORKY walks out

PERCY  
Are you coming Flaps?

FLAPS  
You think he has a liquor cabinet

PERCY  
Liquor?

FLAPS  
Let's go

END OF ACT II

## C. Kitchen

ACT III

FADE IN:

INT. KITCHEN -- DAY

Drunken arguing coming from other side of room

CORKY finds GNAWG and FLAPS

FLAPS  
I am so much faster than you are

GNAWG  
What makes you think so

FLAPS  
Well for starters I have to more  
legs than you do

GNAWG  
That doesn't mean anything

FLAPS  
Back in the war, I could outrun  
everyone in my battalion, hell I  
could almost outrun a Mercedes

FLAPS  
In fact this one time I was  
sprinting along the banks of the  
Rhine to escape...

GNAWG  
What the hell are you babbling  
about

FLAPS  
I'm trying to tell you that I can  
beat you in a race

GNAWG  
No way

FLAPS  
Yeah way

GNAWG  
Yeah well your a dirty fascist

FLAPS  
I'm a what!

CORKY  
Whoa, calm down guys we can  
settle this

FLAPS AND GNAWG  
How?

CORKY  
A race

FLAPS  
Blitzkrieg

Mini-game (Race)

FLAPS  
Told you so

GNAWG  
Yeah, yeah

FLAPS  
Oh mi gonna barf  
(starts  
panting)

CORKY  
Hi, I'm Corky

GNAWG  
Oh sorry bout that my name is  
Gnawg

CORKY  
Do you know Chip?

GNAWG  
Who?

CORKY  
The sloppy bastard who owns this  
place

GNAWG  
Yeah I know him, he placed those  
horrible things on the floor

GNAWG

I thought he was doing a good thing, there was cheese on this board

GNAWG

My son was hungry and I told him he could go get it, then SNAP

GNAWG

Trap killed my son

CORKY

I'm sorry

GNAWG

Why do you ask about him

CORKY

Well he killed my parents and I want revenge

GNAWG

Whatever you need I'm your man

CORKY

I was thinking we could cut his phone lines

GNAWG

Piece of cake

Mini-game (Cut phone lines)

GNAWG

That should do it

CORKY

I may need your services later

GNAWG

Whatever you need

CORKY finds PERCY (mission)

PERCY

Hey Corky

CORKY

What are you doing

PERCY

Oh this, I was hungry

CORKY

That's a paper clip

PERCY

I told you I was hungry

CORKY

I have a better idea, it looks like Chip is making dinner

CORKY

Why don't we mess with him a little

PERCY

Can I eat

CORKY

Yeah fine, go nuts, just make  
sure Chip can't eat

Alternate

FLAPS finds PERCY (mission)

FLAPS  
Is that a paper clip

PERCY  
What?

FLAPS  
That large piece of inedible  
metal in your mouth

PERCY  
I'm hungry

FLAPS  
What a surprise

FLAPS  
I have a better idea, Corky wants  
to get back at this Chip fellow  
and it appears he is cooking  
dinner

PERCY  
Food?

FLAPS  
Yeah food, go get em hefty

Mini-game (push food off counter)

PERCY  
All this food is wrapped, I guess  
I will just knock it off and hope  
it breaks on the floor

End mini-game

FLAPS finds FEMALE (mission)

FLAPS  
No way!

FLAPS  
Did you drink all of this  
yourself

FEMALE  
You betcha

FLAPS  
I think I'm in love

FEMALE  
What!

FLAPS  
Oh nothing

FLAPS  
You got any left

FEMALE  
I got some

FLAPS

Oh good, I just raced this crazy mouse and buy am I thirsty

FEMALE

Crazy mouse huh?

FLAPS

Yeah well, HEY how bout another race

FEMALE

What do you mean

FLAPS

First one to finish the rest of the beer wins

FEMALE

You just want my ...

FLAPS

Go!

Mini-game (chug beer)

End mini-game

FLAPS

(BELLCHHH  
H!)

FEMALE

I can't believe how much you can drink

FLAPS

Your not so bad yourself

FEMALE

Thank you

FLAPS

Since I won, could I possibly have some of your eggs

FEMALE

How's that!

FLAPS

Well you have a pile of eggs over there and there is this guy named Corky and he...

FEMALE

Ohhh, I thought that was a metaphor

FLAPS

Your not the only one

FEMALE

Yeah you can have them

FLAPS

Thanks I owe you one

FEMALE

Two

What? FLAPS

The beer FEMALE

Right two FLAPS

After eggs are laid

Mmm, meat log CHIP

What the hell CHIP

No meat log for you CORKY

Goddamnit CHIP

CHIP stomps out of room

Doors open guys lets go CORKY

EXTRA DIALOGUE

RACE #2

Back for more? GNAWG

Your the one who lost FLAPS

Not this time GNAWG

Alright lets go FLAPS

CUT POWER TO FRIDGE

You ready for a little more exercise? CORKY

What do you have in mind GNAWG

How about the fridge CORKY

Power lines? GNAWG

Power lines CORKY

Kinda dangerous GNAWG

He killed your kid CORKY

Hop on GNAWG



PUSH MORE FOOD OFF COUNTER

PERCY  
I'm still hungry

FLAPS  
That's a surprise

PERCY  
All that food went in the garbage

FLAPS  
Looks like the garbage is full

PERCY  
Food?

FLAPS  
Yeah, if you push more in the can  
some might fall out

PERCY  
(stomach  
grumbles)

END OF ACT III

## D. Dining Room

ACT IV

FADE IN:

INT. DINING ROOM -- MOMENTS LATER

CORKY  
What the hell is this?

PERCY  
Looks like boxes

CORKY  
I can see that but why?

FLAPS  
Kruggerand

CORKY  
Your kidding right?

FLAPS  
No way, I have seen a fortress  
like this before, and inside ...

CORKY  
Let me guess

FLAPS  
Krugerrand

CORKY  
Alright Flaps you go find your  
Nazi gold

FLAPS runs off

PERCY

What do we do?

CORKY

What till the Hun comes back

FLAPS finds CANKER

FLAPS

Are you guarding the kruggerand

CANKER

Fight me for it

FLAPS

So there is gold in this fortress

CANKER

I didn't say that

FLAPS

Yes you did you said fight me for it

CANKER

Fight me for the answer to your question

FLAPS

I don't want to fight you , but I know someone who will

CANKER

Well where is he

FLAPS

He's on the ground, do you know how we can get him up here

CANKER

Is he strong?

FLAPS

Help him up here and you will see

Path opened

FLAPS

Yo! Percy

PERCY

What Flaps

FLAPS

Come up here I need you

CORKY

Did you find your gold

FLAPS

If I did you don't get any

PERCY gets on table (mission)

PERCY

Who is that?

CANKER

The name is Canker, you ready?

PERCY  
Ready for what?

CANKER head butts PERCY

Mini-game (sumo)

End mini-game

PERCY  
What was that about?

FLAPS  
Sorry

PERCY  
What are you sorry for

CANKER  
Owww, I'm gonna be sore in the morning

FLAPS  
I said you would fight him

PERCY  
Why

FLAPS  
The kruggerand, now where is it

CANKER  
There's no gold

CORKY  
Told you

CANKER  
Your strong, that was a good fight

PERCY  
Thank you, but next time ask

CANKER  
Whatever you need I will help

FLAPS  
Well we could use help opening that door since there is no treasure here

CANKER  
Shouldn't be a problem

FLAPS  
Let's go

CORKY  
Wait

CORKY  
We need to fill this room with roach eggs

FLAPS  
Right, well let's find a chick

CORKY

I'll do it

Timed event (find FEMALE)

CORKY finds FEMALE

CORKY

I have a proposition for you

FEMALE

Well hello, your rather up front

CORKY

I need a couple of your eggs to  
place around the room

FEMALE

Why do you want to do that

CORKY

To make this house unlivable for  
Chip

FEMALE

That seems reasonable

FEMALE

But I won't give them to you  
until you get me a cotton ball

CORKY

Why?

FEMALE

My bed isn't very comfortable

CORKY

Fine I will be right back

CORKY comes back to everyone (mission)

FLAPS

What happened?

CORKY

She wants a cotton ball

FLAPS

You just don't know how to talk  
to women

CANKER

There should be some cotton balls  
in a box

CORKY

Well that narrows it down

CANKER

It's the one over there in the  
corner

Camera shows the box

FLAPS

I got this one

Timed event( obtain cotton ball)

FLAPS returns to FEMALE

Here you go FLAPS

Who are you? FEMALE

Your savior FLAPS

Oh? FEMALE

Here is your cotton ball FLAPS

I see, here are your eggs FEMALE

Danke frauline FLAPS

After eggs are laid all gather on table

You ready to do this Percy CANKER

Yeah lets get the door open PERCY

We need to hit Chip where it hurts CORKY

Yeah, yeah come on guys FLAPS

EXTRA DIALOGUE

GAUNTLET #2

I bet you guys can't make it to \_\_\_ in \_\_\_ seconds" CANKER

You got a bet FLAPS

Or

We will see who can't make it CORKY

END OF ACT IV

## E. Living Room

ACT V

FADE IN:

INT. LIVING ROOM -- MOMENTS LATER

CORKY  
Well this looks a little more  
habitable

FLAPS  
I liked the city of filth

CORKY  
That was the dining room

Camera shows hamster cage

CORKY  
What's with the rodent

PERCY  
Let's go talk to him

Go talk to TENPIN (mission)

TENPIN  
Is someone there?

PERCY  
There is actually three of us

FLAPS  
What are you blind?

TENPIN  
Yeah sorry about that, my name is  
Tenpin nice to meet you

FLAPS  
I'm Flaps the one who made the  
rude comment is Corky

CORKY  
No I didn't

FLAPS  
And the quiet one is Percy

TENPIN  
Haven't seen you round here  
before, what brings you by these  
parts

FLAPS  
What do you mean see?

CORKY  
Do you know Chip

TENPIN  
I've seen him before

FLAPS  
No you haven't!

TENPIN  
What?

CORKY  
Don't worry about it, he killed  
my parents and I want some  
vengeance

TENPIN  
I know things about him that  
might help

CORKY  
Oh really

TENPIN  
Yeah I've been told on the other  
side of the room there is a piece  
of information

CORKY  
What is it

TENPIN  
I don't know I have never been  
able to get there, being blind  
and all

CORKY  
If you know where it is I will  
help you get there

TENPIN  
Climb on my back and we will go

Mini-game (super monkeyball-esque)

End mini-game

TENPIN  
Here we are

CORKY  
Where?

TENPIN  
Right in front of you

CORKY  
That's a half eaten bologna  
sandwich

TENPIN  
Oh that's what that smell is

CORKY  
Yo, Percy

PERCY starts eating the sandwich

PERCY  
Mmm, sandwich

TENPIN  
I am sorry about that

TENPIN  
If you ever need anything else

CORKY  
We will let you know

CORKY or FLAPS finds the FEMALE

Hi  
FEMALE

This never gets any easier  
CORKY OR FLAPS

What's that  
FEMALE

Can I have some eggs  
CORKY OR FLAPS

I can see why that doesn't get  
easier  
FEMALE

Yes you can  
FLAPS

Can what  
FEMALE

See  
FLAPS

I don't get it  
FEMALE

Never mind, so the eggs  
FLAPS

Well you had the gall to ask, but  
I need a small favor  
FEMALE

Alright what do I need to do  
CORKY OR FLAPS

My home is in the other room but  
Chip set up bottles blocking the  
exit  
FEMALE

I think I can handle that  
CORKY OR FLAPS

Talk to TENPIN (mission)

Hey Tenpin  
CORKY

Where are you  
TENPIN

I need that favor  
CORKY

You got it  
TENPIN

There are some bottles blocking  
the exit, I need them knocked  
over  
CORKY



TENPIN  
All I got is this ball

CORKY  
That should do fine, you ever  
bowl before

TENPIN  
No, what's that

CORKY  
Percy, you want to show the  
hamster how to bowl

PERCY  
I can give him a push

CORKY  
That would be perfect

Mini-game (hamster bowling)

End mini-game

TENPIN  
That was fun

CORKY  
Yeah I enjoy bowling, never been  
the ball though

Talk to FEMALE (mission)

FEMALE  
Thank you so much

CORKY  
You are very welcome

FEMALE  
Here are the eggs

CORKY  
Thank you

FEMALE  
Any time

EXTRA DIALOGUE

CUT POWER TO TV

CORKY  
Gnawg?

GNAWG  
Hey Corky

CORKY  
How did you get here?

GNAWG  
I have a system of tunnels

CORKY  
Want to get his TV?

GNAWG  
Let's do it

RACE #3

FLAPS  
You again

GNAWG  
I'm gonna beat you this time

FLAPS  
You really think so

GNAWG  
I've been practicing

HAMSTER BOWLING #2

TENPIN  
Can we do that bowling thing  
again

CORKY  
You really like that huh?

TENPIN  
Most fun I've had in a long time

CORKY  
Yo! Percy

END OF ACT V

## F. Hallway

ACT VI

FADE IN:

INT. HALLWAY DOWNSTAIRS -- MOMENTS LATER

CORKY  
This hovel has another floor?

FLAPS  
Surprised it hasn't caved in yet

CORKY  
If we can get upstairs we can  
finish off Chip once and for all

Get upstairs as fast as possible (mission)

Encounter broken floorboards

CORKY  
Looks like it's broken, gonna  
have to find another way

CORKY  
Flaps see if you can get up there

FLAPS runs into spider web

FLAPS

I'm stuck

FLAPS

Unhand me, commie

RUTHERFORD

You flew into my web

FLAPS

Please don't eat me

RUTHERFORD

I didn't eat dinner yet

CORKY

Whoa, hold on a sec

PERCY

Hey Mr. spider please don't eat  
my friend

RUTHERFORD

It's his fault he is in my web

Spider continues to move toward FLAPS

CORKY

Alright, alright what do you want

RUTHERFORD

The smell of food has made me  
hungry your going to have to find  
me dinner

FLAPS

Go find he dinner!

CORKY

Hold on Flaps we will be right  
back

PERCY

Were gonna save you buddy

Mini-game (scare flies)

End mini-game

CORKY

Got your dinner

RUTHERFORD

Ok he can go

FLAPS

Death from above!

FLAPS jumps on RUTHERFORD

RUTHERFORD

Nice try, but your gonna have to  
do better than that

(deftly  
tosses  
Flaps  
from his  
back)

FLAPS

You are dead, soviet scum

RUTHERFORD

What are you talking about, I'm  
an Englishman

CORKY

Just ignore him, that's what we  
do when he goes on like this

CORKY

I', Corky it's nice to meet you

RUTHERFORD

Hayes, Rutherford B. Hayes, its a  
pleasure

RUTHERFORD

Thank you for the flies, I was  
truly very hungry

CORKY

We appreciate you not eating our  
friend

RUTHERFORD

He is a rather vulgar fellow

PERCY

He is a good person

PERCY

He is my friend

CORKY

Regardless do you know how we can  
get upstairs

RUTHERFORD

I can make a web

CORKY

That would be great

PERCY

Thank you

FLAPS

Pinko

CORKY

Let's go Flaps

Land upstairs (mission)

CORKY

Look at that door

Camera pans to door with hundreds of locks

FLAPS

That's where it is

CORKY

Not again

FLAPS

Kruggerand

CORKY  
Come on, let's find a way inside

END OF ACT VI

## G. Bathroom

ACT VII

FADE IN:

INT. BATHROOM -- MOMENTS LATER

CORKY  
Wow that's a lot of hamsters

LEMMING  
I am not a hamster

CORKY  
What are you?

LEMMING  
A Lemming

CORKY  
You're a Lemming?

LEMMING  
You got it, isn't that right guys

CROWD  
Hut, hut, hut, hut , hut

LEMMING  
What can I do you for

CORKY  
What's in the room

LEMMING  
You mean the locked door

LEMMING  
Not sure

CROWD  
Hut

LEMMING  
We have only heard rumors, guys  
you ever been in there

CROWD  
Hut, hut, nope, hut, rumors, hut,  
hut

LEMMING  
Nothing sorry, have you seen the  
bedroom

CORKY  
Not yet

LEMMING

Check it out, talk to Nibbles

CROWD

Hut, hut, termite, hut, Nibbles,  
hut, weeeee  
(jumps  
down  
drain)

LEMMING

What was that  
(quickly  
looks  
over to  
drain)

CROWD

Hut, hut, wee, hut, hut, wee  
(continue  
to jump  
down  
drain)

LEMMING

Hut, hut, I thought there was  
gonna be pudding  
(runs  
after  
Crowd and  
joins the  
line  
jumping  
down the  
drain)

CROWD

Hut, hut, wee

CORKY

Sooooo, lets find this Nibbles  
character

END OF ACT VII

## H. Bedroom

### ACT VIII

INT. BEDROOM -- MOMENTS LATER

CORKY  
This is where he sleeps

PERCY  
What do you want to do

CORKY  
Find this Nibbles fellow, the  
Lemming thought he knew something

Find moth hovering in corner (mission)

CORKY  
Excuse me

BALLS  
Sorry didn't see you down there

CORKY  
Do you know where I can find  
Nibbles

BALLS  
You can do a nice wiggle

CORKY  
Nibbles, the termite

BALLS  
What?

CORKY  
Can you come down here so I can  
talk to you

BALLS  
I'm sorry your feet are blue

CORKY  
Flaps can you do something here

Get higher with FLAPS to talk to BALLS (mission)

FLAPS  
Yo, flyboy

BALLS  
Oh hi

FLAPS  
Have you seen Nibbles

BALLS  
Have I talked to you before?

FLAPS  
No you talked to my friend

BALLS

Are you friends with Nibbles

FLAPS

I am looking for him

BALLS

I was just talking to him, he's  
down there

FLAPS

No you weren't that was a  
cockroach you were talking to

BALLS

Nibbles is a termite

FLAPS

Where is he

BALLS

Nibbles lives in the armoire

FLAPS

That took way to long

BALLS

You'll miss me when your gone?

Find Nibbles (mission)

CORKY

Are you Nibbles?

NIBBLES

Who's asking?

CORKY

Name's Corky I need some  
information

NIBBLES

What kind of information

CORKY

The locked door

NIBBLES

Ah yes, everyone wants to know  
about the locked door

CORKY

Do you know anything

NIBBLES

You could say that

CORKY

Chip killed my parents, we have  
been destroying this house room  
by room, I want my revenge

CORKY

And that door is not going to  
stop me

NIBBLES

It seems like you have good  
intentions

NIBBLES

That room is Chip's office



CORKY  
Why does he lock it up so tight?

NIBBLES  
There is a safe

CORKY  
What's in it?

NIBBLES  
No one knows, I can get you in  
the room though

CORKY  
I would like to see it

NIBBLES  
Alright then I will be waiting in  
the hallway

Find the FEMALE (mission)

CORKY  
So what's it like living in  
Chip's bedroom

FEMALE  
Aside from the snoring and the  
mess it is not awful

CORKY  
Would it be better if he left?

FEMALE  
Much better, why do you ask?

CORKY  
If I could borrow a couple of  
your eggs, I will get Chip out of  
here for good

FEMALE  
That seems like a bargain

EXTRA DIALOGUE

EAT CHIPS CLOTHES

FLAPS  
Hey moth

BALLS  
The name is Balls, what can I do  
for you?

FLAPS  
We are trying to get back at  
Chip, is there any way you can  
help?

BALLS  
Why?

FLAPS  
My friend has an anger problem  
and won't take classes

FLAPS

He figures killing someone will  
help

BALLS

I'm not sure what I can do

FLAPS

I thought moths loved to eat  
clothing

BALLS

Oh I know I can eat his clothing

FLAPS

Thanks, you go do that

Mini-game (eat clothes)

End mini-game

CORKY

Dirty bastard probably won't even  
notice the holes

FLAPS

Thank you Balls

RACE #4

GNAWG

Hey

FLAPS

Not you again

FLAPS

Let me guess

GNAWG

I'm gonna beat you

FLAPS

Yeah, yeah

GNAWG

Go!

END OF ACT VIII

## I. Hallway Revisited

ACT IX

INT. HALLWAY -- MOMENTS LATER

Over here NIBBLES

Alright here we are CORKY

Good follow me NIBBLES

Chip keeps plugging the hole but  
I can eat back through it

It leads right to the other side  
of that door NIBBLES

It's payback time CORKY

Mini-game (dig through wall)  
End mini-game

## J. The Study

END OF ACT IX  
ACT X

INT. STUDY -- MOMENTS LATER

This is it? CORKY

Why does he have this so locked  
up? FLAPS

I think it is kinda nice. PERCY

That's because the rest of the  
house is a shit hole CORKY

Is there any way we can get the  
safe open Nibbles? CORKY

We have tried before, but can't  
get through it NIBBLES

CORKY

This room is above the living  
room right?

FLAPS

Yeah I think so

CORKY

Nibbles what if you eat through  
the floor?

NIBBLES

You think it will break open?

CORKY

Worth a shot

Find the FEMALE while NIBBLES scouts the safe (mission)

FEMALE

How did you get in here?

CORKY

Through the wall

FEMALE

Not many people make their way in  
here

CORKY

That door is kind of ridiculous

FEMALE

You're telling me, then I come in  
here and it is clean!

CORKY

He locked up his clean

FEMALE

(giggles)

CORKY

I have a favor I need to ask

FEMALE

Sure what is it?

CORKY

Can I have some of your eggs

FEMALE

Sure

CORKY

Just like that?

FEMALE

Just like that

CORKY

Thanks

NIBBLES returns after the eggs are placed (mission)

NIBBLES

I think I can do it

CORKY

Great

NIBBLES  
There's a problem though

CORKY  
Can it be fixed?

NIBBLES  
Maybe

CORKY  
What do I need to do?

NIBBLES  
Distract Chip, If I start eating  
the floor he is going to notice

PERCY  
That seems risky

FLAPS  
Almost a suicide mission

CORKY  
This is what we have been waiting  
for, I will do it

Cut scene : Corky runs out in front of Chip,  
Percy hisses to grab Chip's Attention  
Chip notices Corky  
Corky runs through hole in wall  
Percy hisses again angering Chip  
Chip unlocks the door and storms out yelling  
Nibbles gets to work

Mini-game (Run from Chip)  
End mini-game

FLAPS  
Hey Corky

CORKY  
Kinda busy over here

FLAPS  
Try to keep him in this room, the  
safe is coming down

Safe comes down on chip, only his feet are visible  
Everyone gathers downstairs as the safe opens slowly

## XII. APPENDIX: Work Progress

### A. Joe Palasek

#### Week 10/2/05

- Thoroughly developed concept of the game; gameplay, characters, etc with group.
- Brainstormed names of characters.
- Assisted in development of 1 pager.

#### Week 10/9/05

- Modeled 15ish lo-poly environmental objects to be placed in our prototype level.

#### Week 10/16/05

- Focused on presentation development with group.
- Created brief bios for all characters.

#### Week 10/23/05

- Finished Mockup Trailer level in 3dsMax.
- Modeled Couch, Mattress, Pillows in 3dsMax.
- Developed health icon progression for HUD from Kraz's sketch.

#### Week 10/30/05

- Wrote first 3 level's Storylines and plot missions with Kraz
- Brainstormed mini games with Kraz as well.
- Learned QuArk and how to export.
- 1/2 of the trailer built in Quark.

#### Week 11/6/05

- Sketched 4-5 facial expressions for Flaps and Corky.
- Flushed out level design and progression with Kraz. (fine tuned the beginning story)
- Brainstormed ideas of puzzles that would drastically improve gameplay.
- Created a text based walkthrough of the first level that would go hand in hand with my prototype 3dsMax level.
- Developed a scale comparison of the 3 playable characters.
- Finished the layout for the whole house.
- Rough Draft of QuArk level build done.
- Established Moach Rotel as the name of the game.
- Took over as group leader.
- From this point on:
  - In close communication with Will; as we were both working in Torque.
  - Created and updated task lists every week for the group on the forums.

#### Week 11/13/05

- Compiled a list of sound effects, music and dialogue that will need to be recorded for the game.
- Sketched Percy's facial expressions.
- Created a list of what was to be done by the end of the prototype.
- Created a complete layout of the floors of chips house (showing flow from room to room)
- Sketched a perspective picture of each of these rooms.

#### Week 11/20/05

- Write up on how to make interiors, textures and lights in QuArk.

- Thanksgiving.

#### **Week 11/27/05**

- Textured all of QuArk interior.
- Edited interior in QuArk to stretch out the trailer allowing more space for chip to walk.
- Created bounding boxes around all 40ish objects that Joel textured.
- Learned asset placement in Torque engine.
- Placed most assets in new Quark interior (without collision meshes at the time).
- Mapped terrain in the level to bring dirt up through the floor to give a filthier feel to the trailer.
- Strategically placed 20 functional breadcrumbs throughout the level.
- From this point on: Nonstop testing of the prototype level. Trying to find bugs, and places that the characters would get stuck.

#### **Week 12/4/05**

- Wrangled Joel's newly collision boxed objects and swapped them in for the objects in torque with no collisions.
- Tweaked character attributes to create navigational puzzles through the level.
- Modified the arrangement of items in torque to create a functional environment for the three characters to use.
- Got a flickering light working with QuArk in the interior.
- Modified and textured old 3dsMax scene for cut scene (we never got around to making this scene.)
- Wrote my script to go hand in hand with presentation section.

#### **Week 12/11/05**

- Reformatted about a half of the design document to make it more appealing.
- Added Object Section to the design document.
- Took Kraz's write-up and fixed story and mission info in design document.
- Also placed the missing part of the script into the doc.
- Placed roach traps in the level using Torque.
- Added Importance of careful level design section to design document.

## **B. John Spofford**

#### **Week 10/2/05**

- Developed One Pager
- Developed Five Pager
- Set up a website with 1GB of file space and message forums. These will be great for communication within the team during the course of the projects.
- Made preparations for a group meeting on 10/7

#### **Week 10/9/05**

- Updated One Pager and Five Pager
- Completed Market Research for similar games for the presentation
- Began working on concept Menu screens
- Made preparations for a group meeting on 10/12

#### **Week 10/16/05**

- Updated One Pager
- Five Pager is now known as the Design Document
- Rebuilt website database after server crash
- Made preparations for a group meeting on 10/21

**Week 10/23/05**

- Updated One Pager and Design Document
- Set up a new front page for the website. Writing progress journals is now a piece of cake.
- Made preparations for a group meeting on 10/28

**Week 10/30/05**

- Updated One Pager and Design Document
- Rebuilt website database after server crash
- Made preparations for a group meeting on 11/4

**Week 11/6/05**

- File naming convention was changed for Perforce.
- Updated latest version of presentation and One Pager
- Helped fill in "holes" in gameplay (i.e. things that had not been written down yet)
- Made a huge update to the Design Document
- Made preparations for a group meeting on 11/10

**Week 11/13/05 and 11/20/05**

- Updated One Pager and Design Document
- Another presentation update. Tons of progress has been made
- Since perforce was not working out for us, I changed the naming convention (again) for use on our FTP. We will continue to use the FTP for the remainder of the project
- Created a list of all assets on the FTP (in each folder)
- Placed all the information in the presentation in the appropriate directories on the FTP
- Changed the structure of the website front page to include project status etc.
- Made preparations for a group meeting on 11/25

**Week 11/27/05**

- Updated One Pager, Design Document and Presentation
- I textured all of the objects that Joel had not textured yet. This was just in case they didn't get finished in time for the final project. There were no UV maps or anything, just basic texture updates.
- Made preparations for a group meeting on 12/2

**Week 12/4/05**

- Updated One Pager and Design Document
- Made a huge overhaul of the Presentation
- Included character/object renders and game screenshots in the Design Document
- Made preparations for a group meeting on 12/9

**Week 12/11/05**

- Completed One Pager
- Completed Presentation
- Completed Design Document
- Made preparations for group meetings



## **C. Aaron Krasnov**

### **Week 10/2/05**

- Helped develop the idea of the game
- Met with Joe to work on story ideas

### **Week 10/9/05**

- Modeled a cockroach to be used as Percy
- Rigged and created test animations of Percy
- Worked on ideas for level progression

### **Week 10/16/05**

- Helped develop the group presentation
- Completed character bios
- Sketched characters

### **Week 10/23/05**

- Created missions and mini-games for trailer
- Began creating secondary characters
- Developed the layout of the house
- Developed level progression

### **Week 10/30/05**

- Finished the descriptions of the first three levels with Joe
- Created sketches of the levels with Joe
- Finalized gameplay
- Started design document

### **Week 11/6/05**

- Edited group presentation
- Worked on design document
- Printed and bound design document
- Began working on game script and story

### **Week 11/13/05 and 11/20/05**

- Completed the script for levels 1-5
- Completed character personalities
- Decided game would have a teen rating to fit the humor
- Finished how the game would end

### **Week 11/27/05**

- Worked with Joe on finalizing the story
- Developed and edited the script
- Developed mini-games and secondary characters

### **Week 12/4/05**

- Finished story
- Finished mini-games

### **Week 12/11/05**

- Finished script
- Printed and bound design document

## D. Will Muto

### Week 10/2/05

- Organized group meeting to brainstorm ideas for game
- Edited Joe's treatment for game concept

### Week 10/9/05

- Started PowerPoint for group presentation
- Modeled pre-visualization models for egg-drop point
- Organized group meeting and divided group tasks for the week
- Decided on file naming convention

### Week 10/16/05

- Created mock-up H.U.D.
- Updated PowerPoint
- Chose Torque as engine for game

### Week 10/23/05

- Began researching the Torque Game Engine World/Mission/GUI Editor
- Worked with Joe to create first iteration of level in 3D Studio Max
- Experimented exporting models from 3D Studio Max

### Week 10/30/05

- Began converting Joe and Joel's models, and started importing these objects into engine
- Imported placeholder H.U.D.
- Created menu screens
- Created test room in QuArK and imported to engine to test workflow for creating the level
- Organized meeting for the week

### Week 11/6/05

- TorqueScript research
- Created character spawnpoint
- Wrote code to send messages to H.U.D.
- Tested DTS items which could be collected by player
- Experimented with particle systems and safe zones.
- Successfully created and imported objects with collision meshes

### Week 11/13/05

- Began writing programming section of design document
- Added NPC path following
- Imported Joe's prototype level into the engine

### Week 11/20/05

- Updated programming section of design document (npc path following, console reference, triggers)

### Week 11/27/05

- Added initial character switching functionality to engine, and added unique abilities to each character
- Imported Joe's updated level and mission files into the engine
- Updated programming section of design document (collision meshes)

### Week 12/4/05

- Wrote rough draft of script for final presentation
- Added character inventory
- Debugged and fixed character switching

- Determined correct workflow for importing animated characters into engine
- Updated programming section of design document (character switching)

**Week 12/11/05**

- Revised script for final presentation (Torque language reference, animated characters)
- Created updated loading screen
- Updated programming section of design document
- Posted on GarageGames with final questions regarding TorqueScript

**E. Joel Catalan****Week 10/2/05**

- Met and assisted with brainstorm meeting
- Began sketching concept art of environment
- Prepared for upcoming class's presentation

**Week 10/9/05**

- Continued concept art drawing
- Began modeling objects to populate environment (18 models total)
- Prepared for upcoming class's presentation

**Week 10/16/05**

- Continued modeling objects and setting up UV coordinates for coloring/texturing
- Updated John's menu screens
- Prepared for upcoming class's presentation

**Week 10/23/05**

- Continued setting up UV's for all objects in preparation for texturing

**Week 10/30/05**

- Updated concept drawings
- Created color palette to be used in texturing/coloring objects
- Began texturing objects

**Week 11/6/05**

- Updated color palette for texturing objects
- Continued to texture objects

**Week 11/13/05**

- Continued texturing objects and setting up UV's

**Week 11/20/05**

- Textured key objects to show for presentation
- Updated color palette

**Week 11/27/05**

- Finished texture all objects, each with it's own custom coloring/texturing
- Began applying collision meshes to objects

**Week 12/4/05**

- Finished collision meshes on all objects
- Modeled, UV'ed and textured 'hazard' objects for environment
- Added texturing workflow to design document
- Prepared for Final presentation

**Week 12/11/05**

- Prepared for presentation
- Created new cover art for Design Document

## **F. Tyler Moore**

### **Week 10/2/05**

- Initial brainstorm meeting
- Started Concept Art for playable characters
- Prepared for first class presentation

### **Week 10/9/05**

- Met to refine game concept
- Continued playable character concept art
- Modeled first test of the Corky's head

### **Week 10/16/05**

- Helped prepare class presentation
- Modeled environment for mock up HUD

### **Week 10/23/05**

- Refined character concept art
- Made first full test model of Corky

### **Week 10/30/05**

- Made first revision of Corky based on class / group feedback
- Began modeling Flaps and Percy

### **Week 11/6/05**

- Made test rigging of Corky that led to his total redesign
- Continued modeling Flaps and Percy
- Began modeling Chip (primary antagonist)

### **Week 11/13/05**

- Continued modeling Corky
- Continued modeling Flaps
- Continued modeling Percy
- Continued modeling Chip

### **Week 11/20/05**

- Finished modeling all 3 playable characters
- Finished modeling Chip
- Began modeling female character
- Began tests of textures for all characters

### **Week 11/27/05**

- Finished modeling female character
- Finished tests of character textures

### **Week 12/4/05**

- Encountered problems with importing characters
- Began troubleshooting characters
- Reworked all textures for general improvement

### **Week 12/11/05**

- All characters fixed and functional
- Completed all idle animations for characters
- Completed all textures

In signing this document, we, the members of Coggworks Ltd., attest that its contents is correct and our own.

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Joe Palasek

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Will Muto

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Aaron Krasnov

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Joel Catalan

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John Spofford

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Tyler Moore