**Urban Recovery**

*Game Design Document*

*Game Play*

**Summary**

    A close friend, caught up in some shady business, has gotten himself captured by the local gang. It is your job to rescue him by navigating your way to the gang’s hideout through the alleys while being cautious to survive both the winter cold and attacks from the gang

**Gameplay**

**MOVEMENT**: A first person stealth game where the player will have the ability to crouch and hide behind objects as well as throw bricks to stun or distract enemies.

**GOAL**: Reach the gang hideout, rescue your friend, and return back to the beginning without being spotted and shot by the enemies, or frozen by the cold.

**OBSTACLES**: Enemies will be patrolling the area and cold will be a constant, so the player needs to be aware of where the trash fires are located and don’t stay out of their warmth for too long.

**TACTICS**: The player will have to observe the patrol patterns of the enemies as well as the layout of the area so that they can efficiently and safely make it to the gang hideout without dying from enemies or the cold.

**CHALLENGES:** Being aware of enemies around you as well as staying warm. The player must also figure out how to get around enemies without being seen. The player must get familiarized with the layout of the map so they know where the nearest fires are and what the enemies patrol path is.

**Mindset**

            The mindset of the game should be intense and slightly nerve racking, and to provoke these emotions the enemies will one shot you, and the cold will constantly be a hazard when you leave the warmth of the fires.

**Type of Progression**

**Non-Linear:** The player must navigate their way to the gang hideout through small alleyways, finding ways around enemies, and there will be several ways to finish the game.

*Technical*

**Controls**

The player will be able to interact with the game by picking up bricks and throwing them at enemies, as well as windows. They will also be able to open and close doors.

**Mechanics**

Player can pick up and throw bricks and when they are going to throw the brick there will be a strength meter which shows how far the brick will be thrown and therefore the player has to time their throw to get the correct strength they want. This will be accomplished through physics and rigidbodies.

**Scripts Needed:**

Player:

* First Person Movement (walk around - no jump or sprint)
* First Person Camera (Move with mouse)
* Crouch/Sneak
  + Hide behind objects to avoid being spotted by enemies (raycasting of enemies)
* Throw Items to distract enemies (Physics and rigidbodies)
* Pick up throwing items from stockpiles (Instantiate object)
* Take Damage when in cold for certain amount of time (shown through HUD)
* Decrease cold amount when near fire
* Instant death from enemy (shot) (animation)
* Open doors (animation on key)

Enemy:

* Patrol (Navmesh)
* shoot if sees player (raycasting to determine if seen)
* Goes towards noises within hearing distance then return to patrol after a while (larger raycast area)
* Get dazed when hit by thrown brick or object(animation and Ienumerator wait time)

Person to Rescue:

* Follow Player (Navmesh)
* Hide behind objects (Trigger Areas/ mirroring player)

**Visual Effects:**

Environment:

* Snow Falling (particle effects)
* Footsteps in Snow (shader)
  + Appearing and Disappearing
* Flickering Lights (lighting and scripts)
* Fog (unity fog)
* Trash Fire (Houdini fire)
* Glass Breaking (modeling and scripts)

People:

* Breath (particle effects)

*Level Design*

**Themes**

**Setting:** Urban City on a wintery night

**Mood:** Intense, nerve racking

**Ambient Objects:** Buildings, trash cans, dumpsters, bottles, pipes, rubble, cardboard

**Interactive Objects:** Bricks/Brick piles, windows, doors, trash can fires

**Game Flow**

1. Black screen with dialogue setting up scene
2. Screen fades in and player is outside a building
3. Player sneaks through the alleyways and makes it to their friend
4. Player tells friend that they need to head back to the apartment
5. Player must sneak back to where they began
6. Win Screen

**Key Events**

* Start Game
  + Get a phone call or message that your friend has been captured
* Alleyway Maze
  + Enemy patrolling
* Gang Hideout
  + Apartment Building with gang members around (no one paying too much attention - only close proximity and noise will cause the enemies to notice the player)
  + Friend tied up in room
* End
  + Rescue friend and both successfully make it out of the hideout and back home

*Graphics*

**Style Attributes**

**Colors**: dark, cool colors with slight sheen from wetness

**Graphic Style:** Realistic

**Visual Feedback:** Enemy patrol will be shown with a light trail. When hit, the camera will get a red tint around it then fall over (player died). When getting overly cold, the player will have a blue tint around the camera to show they need to get to warmth. Brick will highlight when near it to show it can be picked up.

**Graphics Needed**

**HUD**: Blue Tint outline, Red Tint outline, Dialogue Text

**Menu**: Text, Interesting Background

**Visual Effects**

* Breath
* Fire
* Pistol Blast
* Glass Shatter

*Sounds/Music*

**Sounds Needed**

* Gun Shot
* Brick Hit Enemy
* Brick Hit Ground
* Shivering
* Breathing
* Footsteps on brick
* Breaking Glass

**Music Needed**

* Intense quiet music
* Louder, death music
* Triumphant wind music

*Schedule*

1.      Layout Lock:  Jan 22

2.     Pre-Production: Jan 22 - Jan 31

3.     Grey Boxing: Jan 31 - Feb 3

4.     Modeling: Feb 3 - Feb 21

5.     Texturing: Feb 21 - March 4

6.     Script: March 4 - March 25

7.      Alpha: March 25 - April 10

8.     Beta: April 10 - April 24

9.     Final: April 27-30

**Modeling List:**

Up Close Models:

* Exterior
  + Buildings
    - Brick wall
    - Metal Fire Escape Stairs
    - Windows
    - Door
    - Swamp Coolers
  + Metal Small Trash Can
  + Plastic Larger Trash Can
  + Dumpster
  + Brick Pile
  + Wood Planks
  + Electrical Wires
  + Trash Bags
  + Lamp Posts
  + Sewer Drain
* Gang Apartment Interior
  + Kitchen
    - Cabinets
    - Pot
    - Card Table
    - Folding Chairs
    - Counter
    - Sink
  + Office
    - Laptop
    - Cluttered Desk
      * Papers
      * Books
      * Pencils
    - Office Chair
    - Lamp
  + Living Area
    - Couch
    - Coffee Table
* Props
  + Pistol (enemy)
  + Brick

10-20 meters away:

* More Buildings

**Texture Sizes:**

Up Close Models – 2048x2048

10-20 meters away – 1024x1024

**Scale:**

Playable area – approx. 24 x 24 meters

Overall Area – approx. 40 x 40 meters

Player character – approx. 1.75 meters (will be modeled in cm scale because Unity uses cm)

Environment scale - modeled in meters

**Production Line:**

Timeline/Workflow: see above schedule

Software:

* Modeling/UV - Maya
  + Low res > UV > High res
* Texturing - Substance
* Scripting/Setup - Unity

Hrs per week (10 – 20 depending on other classes (average 15))

**Schedule (per day- weekdays)**

Classes(in class and homework)

    3641(level design) - 4 hr

    3680(project/job) - 4 hr

    3571(story development) - 2 hr

    3660(rigging) - 2 hr

    3560(C#) - 2 hr

Sleep - 7 hrs

Commute - 1 hr

Eating - 1 hr

Cleaning - .5 hr

Extra - 1.5 hr

**Total per week (excluding weekends)**

3641 - 20 hrs

3680 - 20 hrs

3571 - 10 hrs

3660 - 10 hrs

3560 - 10 hrs

**Time Budget** for each section (available – not necessarily how long it will take)

* Grey Boxing: 5 -10 hrs (weekend)
* Modeling: 30 – 40 hrs (about 2.5 weeks)
* Texturing: 20 – 30 hrs (about 2 weeks)
* Scripting: 20 – 35 hrs (3 weeks, but also Spring Break)
* Alpha: 20 - 30 hrs (about 2 weeks)
* Beta: 20 – 30 hrs (about 2 weeks)

**Organization:**

Naming Conventions:

            Scripts – UnderScore separation (ex: Player\_Controller, Enemy\_Movement)

            Scriptable Objects – add \_Data at end (ex: Float\_Data, Player\_Data)

            GameObjects – Named what the object is / does

**Folder Layout:**

* Unity Folder
  + Assets
    - Scripts
      * Player Movements
      * Enemy Movement
      * Scriptable Objects
      * Etc.
    - Models
      * Prototype\_Models
      * Final
    - Textures
      * Prototype\_Textures
      * Materials
      * Images
    - Prefabs
      * Prototype\_Prefabs
      * Final
    - Sprites
    - Animations
      * Animation Controllers
      * Animation Models
* Maya Folder
  + Maya Files
* FBX Folder
  + FBX Files
* Texture Folder
  + Folders for each set of maps

**Unknowns:**

* Animation Bugs – Getting script/Animation Controller to have correct timing and good flow
* Script Bugs – making sure that mechanics work consistently without any problems
* Lagging – Decrease the number of polygons – keep updates limited in scripts – decrease amount of objects
* Unity Textures different from Substance Textures – fix through shaders or lighting

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Object | Model | UV | Texture | Implement | Approval | Final(with extra) |
| Metal Trash Can | 1 hr | 10 min | 30 min | 30 min | 10 min | 3 hrs |
| Plastic Trash Can | 1.5 hr | 20 min | 1 hr | 30 min | 10 min | 4 hrs |
| Dumpster | 1 hr | 20 min | 1 hr | 10 min | 10 min | 3 hrs |
| Brick Pile | 1 hr | 10 min | 1.5 hr | 30 min | 10 min | 3.5 hrs |
| Electrical wire | 30 min | 5 min | 30 min | 1 hr | 10 min | 2.5 hrs |
| Wood Planks | 30 min | 5 min | 15 min | 30 min | 10 min | 2 hrs |
| Trash Bags | 30 min | 5 min | 15 min | 30 min | 10 min | 2 hrs |
| Lamp Post | 1 hr | 5 min | 30 min | 10 min | 10 min | 2 hrs |
| Sewer Drain | 30 min | 10 min | 15 min | 10 min | 10 min | 1.5 hrs |
| Pistol | 1 hr | 20 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Brick | 10 min | 5 min | 15 min | 10 min | 10 min | 1 hr |
| Kitchen Cabinets | 1 hr | 10 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Kitchen Counter | 1 hr | 10 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Sink | 1 hr | 10 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Pot | 10 min | 10 min | 15 min | 10 min | 10 min | 1 hr |
| Card Table | 1 hr | 10 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Folding Chair | 30 hr | 20 min | 30 min | 10 min | 10 min | 2 hrs |
| Monitor  Keyboard  Mouse | 1 hr | 10 min | 1 hr | 10 min | 10 min | 3 hrs |
| Book (open) | 10 min | 5 min | 30 min | 20 min | 10 min | 1.5 hrs |
| Book (closed) | 10 min | 5 min | 15 min | 20 min | 10 min | 1.5 hrs |
| Pencil (wooden) | 10 min | 5 min | 15 min | 20 min | 10 min | 1.5 hrs |
| Office Chair | 1 hr | 20 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Office Desk | 1 hr | 20 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Couch | 1 hr | 20 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Coffee Table | 1 hr | 20 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Apartment Window | 30 min | 10 min | 30 min | 20 min | 10 min | 2 hrs |
| Curtains | 15 min | 10 min | 15 min | 10 min | 10 min | 1.5 hrs |
| ApartmentDoor | 30 min | 5 min | 30 min | 30 min | 10 min | 2 hrs |
| Metal Fire Escape | 1 hr | 20 min | 30 min | 10 min | 10 min | 2.5 hrs |
| Swamp Cooler | 30 min | 20 min | 1 hr | 10 min | 10 min | 2.5 hrs |
| Lamp | 30 min | 10 min | 30 min | 10 min | 10 min | 2 hrs |
| Crushed Cans | 30 min | 10 min | 30 min | 30 min | 10 min | 2 hrs |
| Apartment Exteriors (set up) | 2.5 hr | 30 min | 1 hr | 1 hr | 30 min | 6 hrs |
| Total | 24 hrs | 7hr | 18.5 hr | 10 hrs | 5.5 hrs | 73 hrs |

|  |  |
| --- | --- |
| Object | Reference Images |
| Metal Trash Can |  |
| Plastic Trash Can |  |
| Dumpster |  |
| Brick Pile |  |
| Electrical wire |  |
| Wood Planks |  |
| Trash Bags |  |
| Lamp exterior |  |
| Sewer Drain |  |
| Pistol |  |
| Brick |  |
| Pot |  |
| Card Table |  |
| Folding Chair |  |
| Monitor Keyboard  Mouse |  |
| Book (open) |  |
| Book (closed) |  |
| Pencil (wooden) |  |
| Office Chair |  |
| Office Desk |  |
| Couch |  |
| Coffee Table |  |
| Apartment Window |  |
| Curtains |  |
| ApartmentDoor |  |
| Metal Fire Escape |  |
| Swamp Cooler |  |
| Lamp Desk |  |
| Crushed Cans |  |
| Apartment Exteriors (set up) |  |

