



Game Design Document

Salty Bunch Co.



Contents

1 Game Overview	5
1.1 Game Concept	5
1.2 Setting	5
1.3 General Features	6
1.4 Genre & Target Audience	6
1.5 Look and Feel	7
1.6 Game Progression Summary	7
2 Story and Setting	8
2.1 Story and Narrative	8
2.2 Game World	8
3 Characters	9
3.1 Marshal “King”	9
3.2 Anna “Jailbird”	10
3.3 Olivia “Shadow”	11
3.4 Rocco “Racoon”	12
3.5 A.S.I.A (NPC)	13
3.6 Player Statistics	13
4 Levels	14
4.1 Main Floor	14
4.2 Basement	16
5 Gameplay and Mechanics	20
5.1 Game Progression	20
5.2 Challenges	21
5.3 Mechanics	24
5.4 Combat	27
6 User Interface	30
6.1 UI Layout	30
6.2 Menus	31
6.3 Control Scheme	35
6.4 Audio	36
6.5 Music	36
6.6 Sound Effects	36
6.7 Help System	37
7 Artificial Intelligence	38
7.1 Enemy AI	38
7.2 Drone Indicators	38
7.3 Drone Finite State Machine	39



8 Technical	40
8.1 Target Hardware	40
8.2 Game Engine	40
8.3 Scripting Language	40
9 Appendices	41
9.1 Asset List	41
10 Game Art	46
10.1 Concept Art	46
10.2 Characters	52
10.3 Environments	53



List of Figures

1.1	The Four Thieves	5
1.2	Cinque National Bank	6
1.3	Look and Feel	7
2.1	Front Lobby of the Bank	8
3.1	Marshal “King”	9
3.2	Anna “Jailbird”	10
3.3	Olivia “Shadow”	11
3.4	Rocco “Racoon”	12
3.5	A.S.I.A	13
4.1	Ground Floor Map	14
4.2	Player Critical Paths	15
4.3	Drone Pathing on Ground Floor	16
4.4	Basement Floor Map	17
4.5	Player Paths on Basement	18
4.6	Drone Pathing on Basement	18
5.1	Game Progression	20
5.2	Lethal Lasers Outside Vault	22
5.3	Security Cameras in Lobby	22
5.4	Drone	22
5.5	Drone — Stun Gun	23
5.6	Drone — Electric Field	23
5.7	Drone — Pathing in Lobby	24
5.8	Interaction — Inside Vault	25
5.9	Quicktime Events	25
5.10	Inside the Vault	26
5.11	Health Point	27
5.12	Dexterity Icon	27
5.13	Speed Icon	27
5.14	Stun Gun	28
5.15	Electric Baton	28
5.16	Weapon Select	29
5.17	Game Flow	29
6.1	UI Layout	30
6.2	Menu Flow Chart	31
6.3	Main Menu	32
6.4	Options Menu	33
6.5	Pause Menu	33
6.6	Opening Cutscene	34



6.7	Victory Screen	35
6.8	Character Selection Screens	35
6.9	Controller Control Layout	36
7.1	Drone States	38
7.2	Drone FSM	39
10.1	Early layout showing perspective	46
10.2	Assets for Bank interior	47
10.3	Logo concepts	47
10.4	Main Menu	48
10.5	In-game UI	48
10.6	Early Character UI	49
10.7	Concept of Hazards	49
10.8	Electric Field Concept	50
10.9	Stun Gun and Baton Concept Art	50
10.10	Security Drone	51
10.11	Heist Characters	52
10.12	Individual Heist Character Portraits	53
10.13	Bank Exterior	53
10.14	Vault Interior	54
10.15	Render of Vault Concept	54
10.16	Render of Vault Concept	55
10.17	Render of Lobby	55
10.18	Bank — Main Lobby	56
10.19	Drone Pathing within Main Lobby	56
10.20	Security Cameras in Lobby	57
10.21	Concept Render of Basement Hallway	57
10.22	Lethal Lasers Outside Vault	58



1 Game Overview

1.1 Game Concept



Figure 1.1: The Four Thieves

Play as one of the four thieves attempting the biggest heist in history on the Cinque National Bank. Players must infiltrate the bank which is rigged with state-of-the art defense systems to challenge the player. Security Drones will be patrolling the bank looking for any intruders.

The main objective for the player is to infiltrate the bank, gather as much gold as possible and escape the bank before lockdown. The thief who manages to escape with the most gold before lockdown wins the game.

1.2 Setting

The game is set in the near future at the Cinque National Bank. The CNB is the biggest and most prestigious bank in the world, equipped with high-level defense mechanisms due to its reputation and several failed attempts at a heist. Four of the best thieves in the world are attempting to successfully pull off the biggest heist in history. Unknown to them, they are not alone.





Figure 1.2: Cinque National Bank

1.3 General Features

Heist will include a set of 4 unique playable characters whom players could choose from. Heist will be a multiplayer split-screen game with 3D isometric view of the pixelated voxel-style environment. Players will be able to engage in combat with each others or the security drones that patrol the bank and will engage players if they are detected. The bank is filled with defense mechanisms that the player has to either attempt to disable or work around.

The main objective of the game is for the player to be able to infiltrate the bank, gather equipment and gold, and escape the bank before lockdown.

1.4 Genre & Target Audience

Heist is a multiplayer action party game, targeted at players ages 13 and above.



Salty Bunch Co.

1.5 Look and Feel



Figure 1.3: Look and Feel

Heist will have a fun, arcadey, but still have a competitive side to it. It will be easy to pickup, with not much complexity to it, and a lot of intuitive mechanics. We will use a pixel low poly art style to represent the environment and the characters in the game. It will be a 4 player split screen game.

1.6 Game Progression Summary

Four thieves spawn at random at one of the four points of entry. In the first stage, their objective is to infiltrate the bank by getting past quicktime events to bypass traps and defenses. They must now move through the bank and try to sneak by other players or security drones.

Their next objective is to get to the vault and obtain as much gold as possible and more than the next player to win. After they obtain as much gold as possible from the vault, they have to escape through the bank from a randomly chosen escape point in the bank before the lockdown timer expires or else they get stuck in the bank.

As the game progresses, there will be more defenses and drones in the bank to increase the challenge for the players. Games will generally last between 15-20 mins, depending on how quick the players get to the vault.



2 Story and Setting

2.1 Story and Narrative

Our setting is the Cinque National Bank (CNB), it is a prestigious and sophisticated bank frequented by the rich and known by thieves as a goldmine. Set in the near future, Cinque National Bank is notorious for their top of the line security and surveillance measures in addition to being loaded. The bank is a complex building with a lot of hallways, rooms, and sections with state of the art defense and security mechanisms along with professional security drones. Although many thieves from all around the world have attempted to pull off heists, no one has been successful, so far. This time, however, four thieves plan to perform the biggest heist in history at Cinque National Bank, but little do they know, they are all there on the same night.

2.2 Game World

The game world is set in one of the world's richest and most prestigious banks in the world. Of course, you are entering the banks in its off-hours when the defenses and the drones have been deployed to fend off any potential intruders.

The main floor of the bank is going to clearly represent the prestige through its clean and modern look. It will contain the teller area, offices, meeting rooms, and bathrooms.

The basement will be a contrasting environment to the main floor, as it will have bare concrete walls, visible pipes and valves, and exposed lights. It will contain the vault, maintenance offices, and pump rooms.

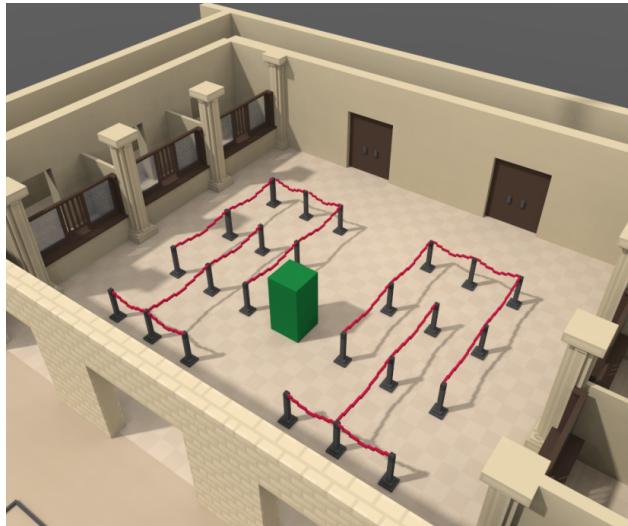


Figure 2.1: Front Lobby of the Bank

3 Characters

3.1 Marshal “King”



Figure 3.1: Marshal “King”

3.1.1 Back Story

King is a gang leader who comes from a neighborhood on the outskirts of a large city. In recent times, the neighborhood had fallen into financial troubles, and the residents who live there started stealing from each other to get by. Tired of having people trying to steal his stuff, King went all-in on his criminal career and set out for the biggest and richest banks in the world with the intention of sending the money back home to put his neighborhood back on top. Despite his intimidating appearance, King is a surprisingly calm and quiet person.

3.1.2 Personality

King is a good hearted man that has the soft spot for his community. His compassion to take care of his community is what motivates him to result to dangerous and criminal activity to do what is best for them.

3.1.3 Physical Characteristics

Marshal is a male, athletically built, African American, brown eyes, black hair, primarily long sleeves (top color variations for how many players choose King) dark bottoms and heavy boots/shoes.

3.1.4 Animations

Marshal “King” menu selection animation consists of him crossing his arm confidently and having a little smirk, showing the player his confidence and strength.

3.1.5 Special Abilities

Because of Marshal’s athletic ability, he has one extra health stack which allows him to take more damage (stuns) from other players and/or security drones.

3.1.6 Statistics

- Health (5/5)
- Speed (3/5)
- Dexterity (4/5)



3.2 Anna “Jailbird”



Figure 3.2: Anna “Jailbird”

3.2.1 Back Story

Jailbird is an average thief with a not-so-average amount of enthusiasm. Stealing things is her passion, and she never gives up the opportunity for a good old-fashioned heist. Her happy-go-lucky nature has managed to get her caught on multiple occasions; but no matter how well the authorities try to keep her contained, Jailbird always manages to find a way to escape and jump right back into another crime spree.

3.2.2 Personality

Jailbird is eccentric, curious and mischievous .With her only motivation to steal and escape when captured.

3.2.3 Physical Characteristics

Ana “Jailbird” menu selection animation consists of her jumping and raising her arms high with excitement.

3.2.4 Animations

Ana “Jailbird” menu selection animation consists of her jumping and raising her arms high with excitement.

3.2.5 Special Abilities

Because of Ana’s criminal background, police are always in pursuit of her, building her stamina to being able to run faster and longer.

3.2.6 Statistics

- Health (3/5)
- Speed (5/5)
- Dexterity (4/5)

3.3 Olivia “Shadow”



Figure 3.3: Olivia “Shadow”

3.3.1 Back Story

Shadow is a spy-for-hire with the promise of always getting the job done. Many mafia and organized crime groups across the world seek her out for whenever they’re in need of a good thief getting in and out without getting noticed. Money. Classified info. Prototype technology. You name it, she can steal it. Due to her perfect track record, Shadow has a cocky side to her. She often sees herself as unstoppable and has a tendency to taunt and charm her rival thieves.

3.3.2 Personality

Shadow is cool, adept and charming. She is able to find her way out of every sticky situation and break every problem.

3.3.3 Physical Characteristics

Olivia is a female, slender built, middle eastern ancestry, brown eyes, black hair, full body catsuit (top color variations for how many players choose King) and knee high black boots.

3.3.4 Animations

Olivia “Shadow” menu selection animation consists of her moving her hand with slight to reveal a jewel in her hand and the other on her hip.

3.3.5 Special Abilities

Because of her long history of being a spy-for-hire, she has required a real knack for hacking and breaking into the toughest of locks.

3.3.6 Statistics

- Health (3/5)
- Speed (4/5)
- Dexterity (5/5)

3.4 Rocco “Racoon”



Figure 3.4: Rocco “Racoon”

3.4.1 Back Story

Raccoon is a kleptomaniac who has an obsession with anything and everything shiny. He was originally a scavenger who would scour around junk piles and scrap yards for anything that seemed valuable. Soon enough he looked to bigger and better ambitions of stealing jewels and gold. His costume resembles that of a raccoon, hence his name, and his small build makes him surprisingly nimble and hard to catch than most other thieves.

3.4.2 Personality

From a young age, Rocco, a slight maniac just can't keep his hands off anything that is remotely shiny or expensive. His body movements are sporadic and jerky due to his suspicious mentality that someone might want to take this “shiny things”.

3.4.3 Physical Characteristics

Rocco is a male, medium built, Caucasian, blue eyes, tattered clothing, hair is disordered with two bunches are pointed up that resembles ears and wears a mask.

3.4.4 Animations

Rocco “Racoon” menu selection animation consists of him rubbing his hand together to portray that he is ready to take the big score.

3.4.5 Special Abilities

Because of his long history of stealing, Rocco has the ability to obtain loot faster than most thieves and has a longer range to grab pick ups.

3.4.6 Statistics

- Health (4/5)
- Speed (4/5)
- Dexterity (4/5)



3.5 A.S.I.A (NPC)

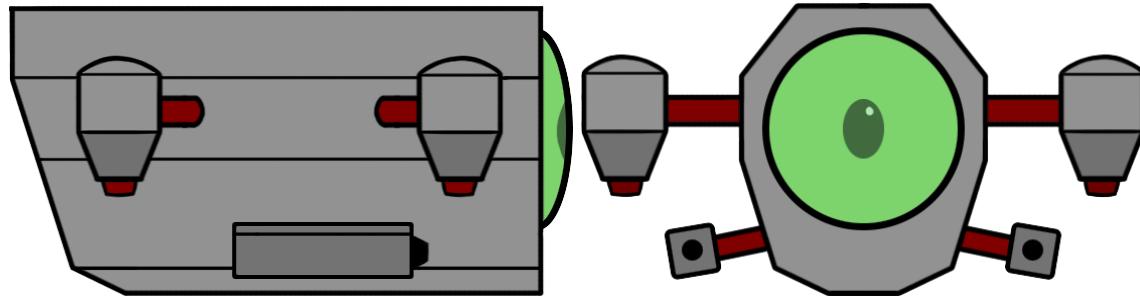


Figure 3.5: A.S.I.A

3.5.1 Back Story

A.S.I.A stands for Artificial Security Intelligence Administrator, and is the name of the AI developed by the CNB Security Technologies team to control the bank's security system. She is a highly advanced AI bot that controls the drones and traps 24 hours per day. A.S.I.A will be responsive to the player's actions and will dish out trash talk whenever she fails.

3.5.2 Personality

A.S.I.A was developed to be a sassy, pretentious, and cocky character to destroy any potential intruder's confidence and lead them to more errors. She looks down upon any intruder, and believes her security mechanisms are impenetrable.

3.5.3 Statistics

- Health (3/5)
- Speed (3/5)

3.6 Player Statistics

	'King'	'Jailbird'	'Shadow'	'Racoon'	'A.S.I.A'
Health	5	3	3	4	3
Speed	3	5	4	4	3
Dexterity	4	4	5	4	N/A

4 Levels

4.1 Main Floor

4.1.1 Synopsis

Cinque National Bank is one of the biggest banks in Europe, and is highly prestigious. The Ground Floor is the starting point for all characters. It contains the player spawn points. After spawning here, the players will attempt to find the stairs and go to the basement in order to find the vault. This floor has a lower number of pickups and obstacles than the Basement Floor. There are defenses set around, but fewer in comparison to the lower level of the bank. The map is viewed in a top-down, Isometric angle. The rooms present are offices, lobbies, meeting rooms, and bathrooms. They are all connected through a series of long hallways that will be filled with defenses and drones.

There are multiple ways to go through the bank. Cinque National Bank has a very nonlinear layout with multiple staircases, rooms, exits and long hallways. The players must decide the optimal route that allows them to either avoid drones and other players, or find weapons and attack them head on. If necessary, they can even travel back and forth between the two floors. The final destination for most will be the heavily guarded vault, but the route taken to get there is entirely up to the player.

4.1.2 Map

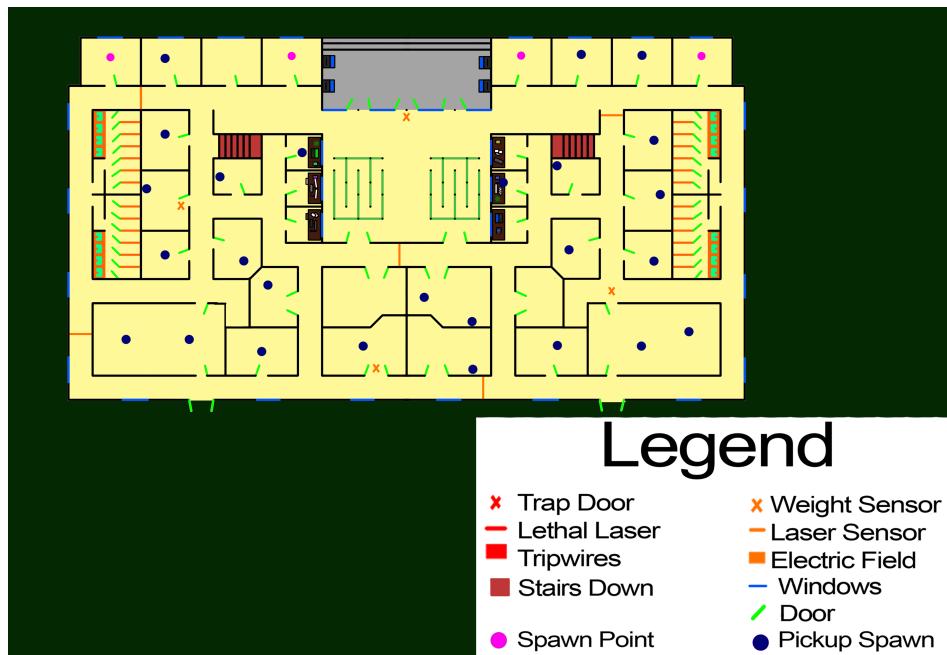


Figure 4.1: Ground Floor Map

Primary Path

(Shown in Blue) The player spawns and makes their way directly down the stairs to the vault. This way is the fastest, but the players miss out on valuable pickups.

Secondary Path

(Shown in Magenta) The player spawns and looks around the bank for pickups. This way they gain an advantage against other players and drones, but it is not as fast as just going to the ground floor.

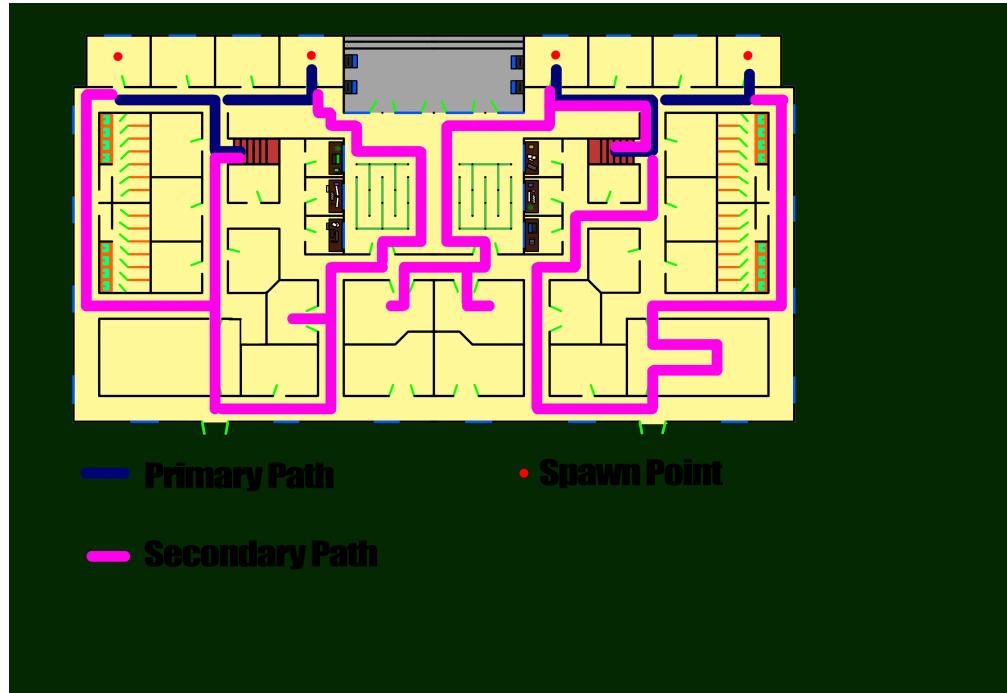


Figure 4.2: Player Critical Paths

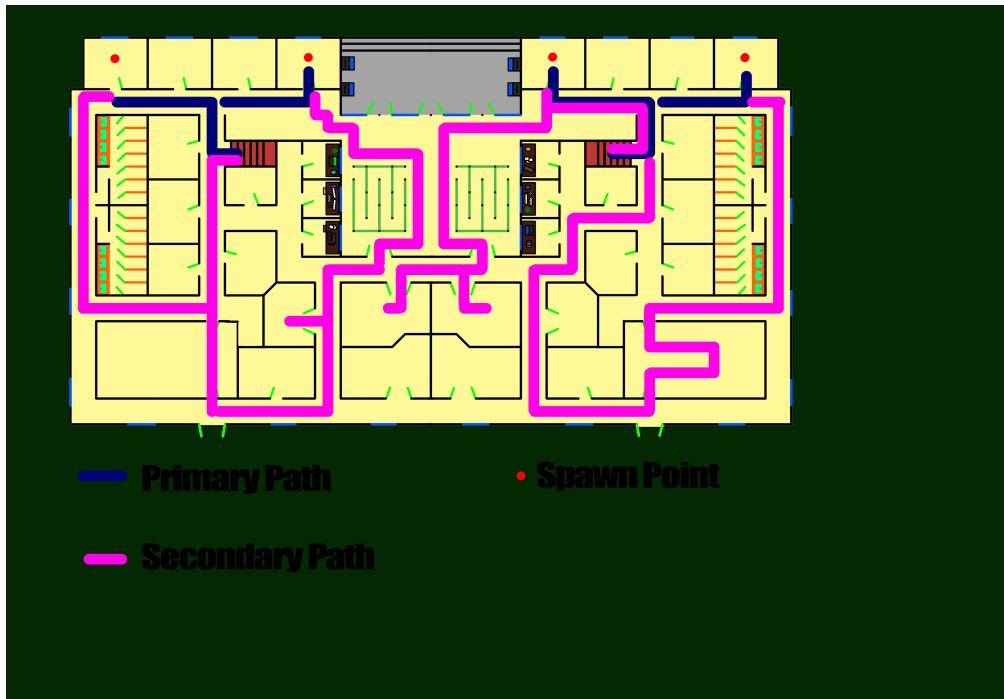


Figure 4.3: Drone Pathing on Ground Floor

4.1.3 Encounters

The player will encounter various challenges. The drones will attempt to stun them, and other players will be trying to prevent them from making it to the vault. There will also be various types of hazards that will slow the player down. When not in an alerted state, the multiple Drones follow the yellow paths (Figure 4.4) in opposite directions. Once alerted to player presence, they will hunt down and attempt to stun the players before returning to the scheduled patrol area

4.2 Basement

4.2.1 Synopsis

The basement floor is accessible through the staircases on the first floor. The basement contains a large amount of pickups and hazards - far more than the first floor. The vault is also located in the center of the basement. The players must go here to get the gold. The floor is viewed in a top-down, Isometric angle. The rooms present are security rooms, more offices, storage rooms, and server rooms, in addition to the large gold vault.

4.2.2 Map

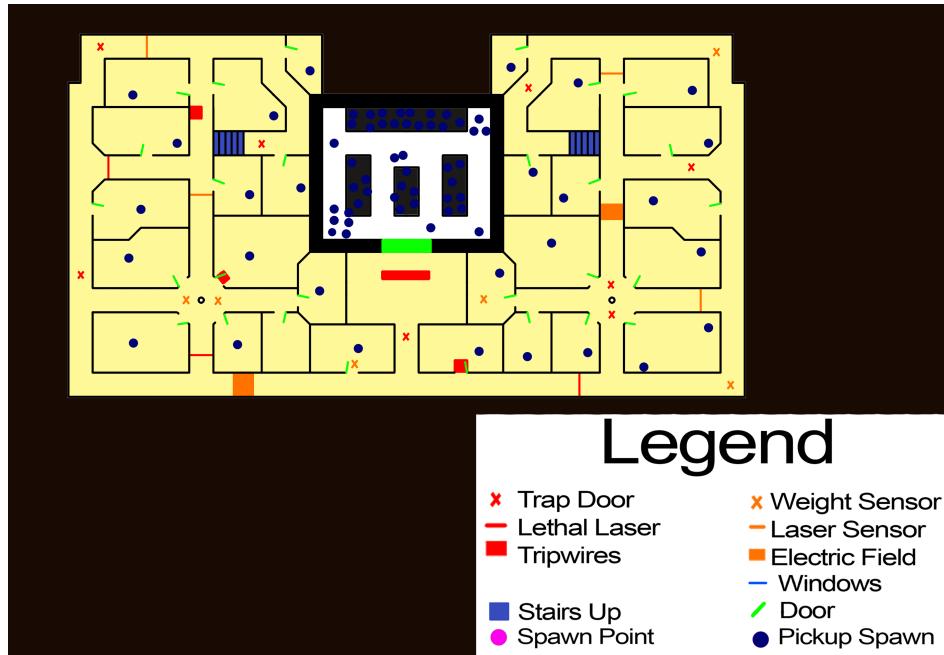


Figure 4.4: Basement Floor Map

Primary Path

(Shown in Blue) The player gets down the stairs and immediately makes their way to the vault. This way is the fastest, but the players miss out on valuable pickups around the basement.

Secondary Path

(Shown in Magenta) The player gets down the stairs and looks around the basement for pickups. This way they gain an advantage against other players and drones, but it is not as fast as just going to the vault.

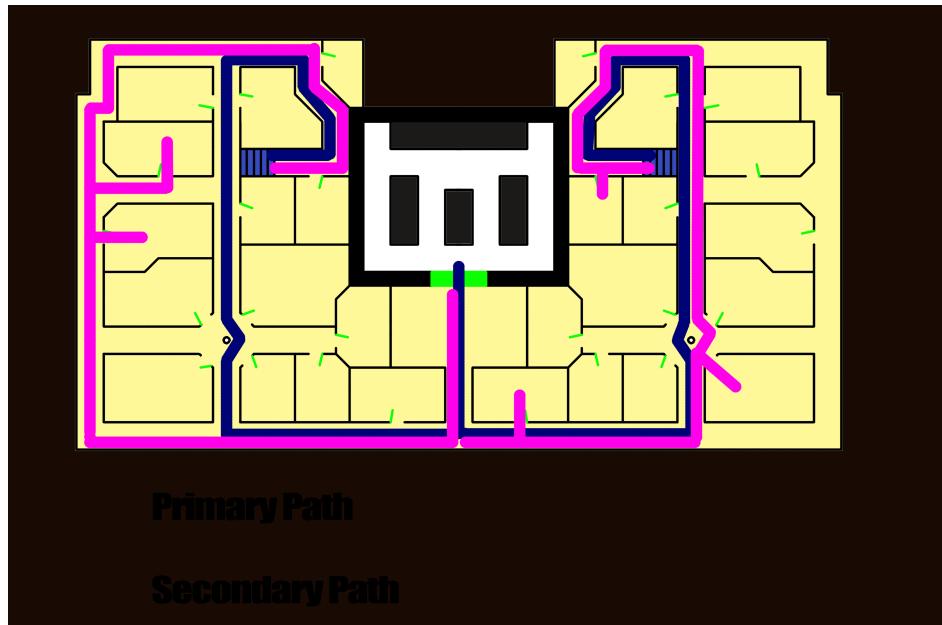


Figure 4.5: Player Paths on Basement

4.2.3 Encounters

The player will encounter various challenges. The drones will attempt to stun them, and other players will be trying to prevent them from making it to the vault. There will also be various types of hazards that will slow the player down. There will be far more hazards and drones in the basement. When not in an alerted state, the multiple Drones follow the yellow paths (Figure 4.7) in opposite directions. Once alerted to player presence, they will hunt down and attempt to stun the players before returning to the scheduled patrol area

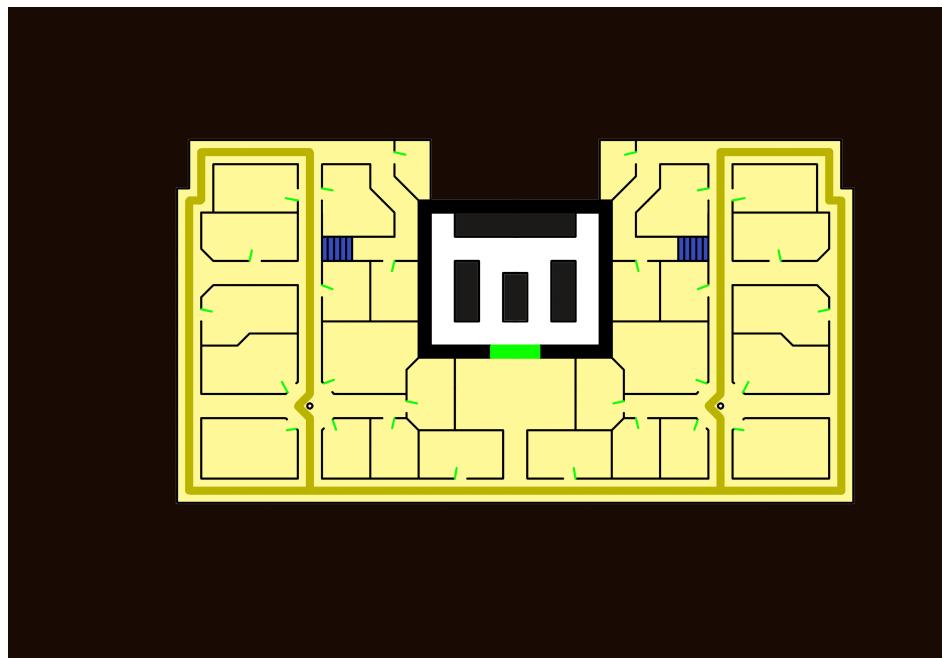


Figure 4.6: Drone Pathing on Basement

4.2.4 Closing Material

At the end of the game, the players will view a victory screen. The screen will show all four players as well as how much gold each player acquired. The players will be ranked in the order of how much gold they got (See Figure 6.7)



5 Gameplay and Mechanics

5.1 Game Progression

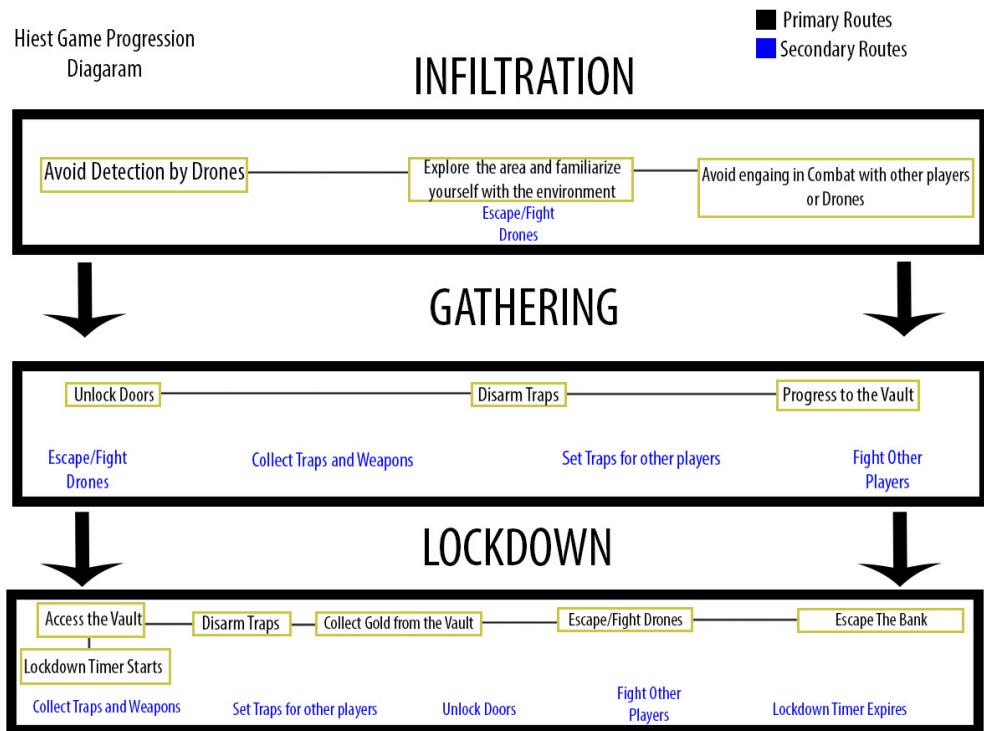


Figure 5.1: Game Progression

Game Progression split into 3 parts:

5.1.1 “Infiltration”

- Infiltration stage implies that the players start in the main floor and make their way towards the basement.
- Infiltration stage will require players to be more stealthy
- Players can engage in combat with drones or players if necessary.
- Players will familiarize themselves with the environment and its challenges in this stage
- Players will need to disable traps and unlock doors to progress.



5.1.2 “Gathering”

- This stage of the game blends between the other two stages
- They will explore rooms and hallways for loot
- Players will collect weapons and traps which will spawn as safes across the map
- Players will set traps across the map for other players

5.1.3 “Lockdown”

- This stage will be the most chaotic stage of the game
- As soon as a player accesses the vault, a lockdown timer initiates
- In this stage, players will be rushing and battling to gather as much gold as possible and try to escape the bank before lockdown.
- Only one exit will be available
- More traps and hazards will spawn
- Drones will be more aggressive

5.2 Challenges

5.2.1 Bank Layout & Defenses

- Levels are not going to be straightforward paths towards the vaults
- Levels will contain multiple paths, each with their own pros & cons
- Some doors will be locked, and will need to be unlocked through a quicktime event. If player fails quicktime event, drones will rush to their area.
- Level of difficulty and frequency of pickups will vary from area to area
- Defenses will already be set in the map at the beginning of the game and will increase in number as the game progresses.
 - Security Camera: will inform enemy drones to your position and send them to the player's area
 - Electric Field: Damages (1 DMG/2 seconds) and slows players.
 - * Lasts for 10 seconds after damaging player
 - Lethal Lasers: Damages players (2 DMG)
 - * Disappears after trigger
- Defenses will be strategically set at areas of importance
- Some Defenses (Electric Field & Laser) can be disabled through a quick-time event
 - If quicktime event is successful, trap is disabled for a short amount of time
 - If quicktime event is failed, trap is triggered
- New defenses will spawn as the game progresses
 - There will be a minimum and maximum number of traps set at a time.





Figure 5.2: Lethal Lasers Outside Vault

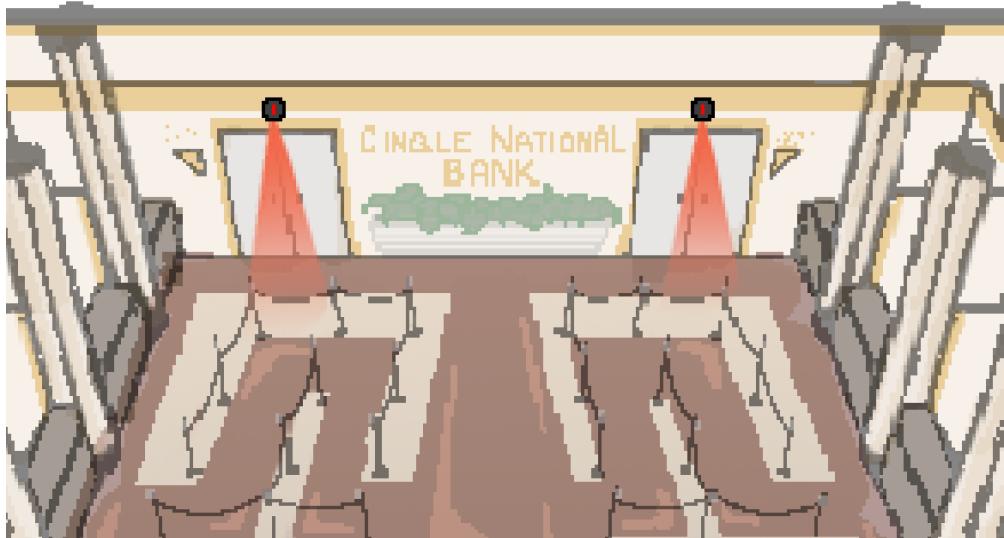


Figure 5.3: Security Cameras in Lobby

5.2.2 Security Drones

- Drones are the primary enemy for the players
- They patrol the bank, and will detect players in their vision radius
 - Will notice sounds that the player makes, and investigate the area
- Drones will attack the player if detected
- Drones will be equipped with either weapon

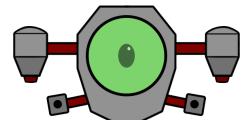


Figure 5.4: Drone



Salty Bunch Co.

- Stun Gun: ranged weapon that charges up before firing (dodgeable) does 1 DMG

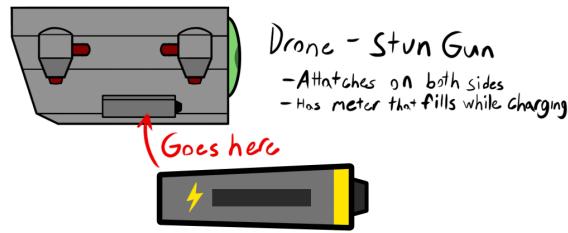


Figure 5.5: Drone — Stun Gun

- Electric Field: AoE weapon that drones can deploy for short bursts, it deploys an electric field under them, that will damage players (1DMG/2secs) that step in it. Drones will be faster and chase players around

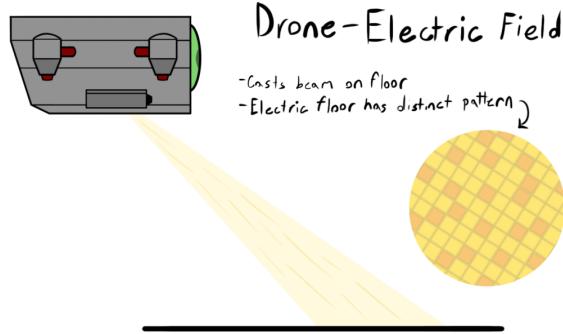


Figure 5.6: Drone — Electric Field

- Drones will drop gold when they are damaged or stunned.
- Drones will need to lose 3 health stacks to be stunned.
- If drone stuns player, they will move on to other targets, or continue to patrol their area.
- New drones will be deployed as the game progresses
 - There will be a minimum and maximum number of drones deployed at a time.

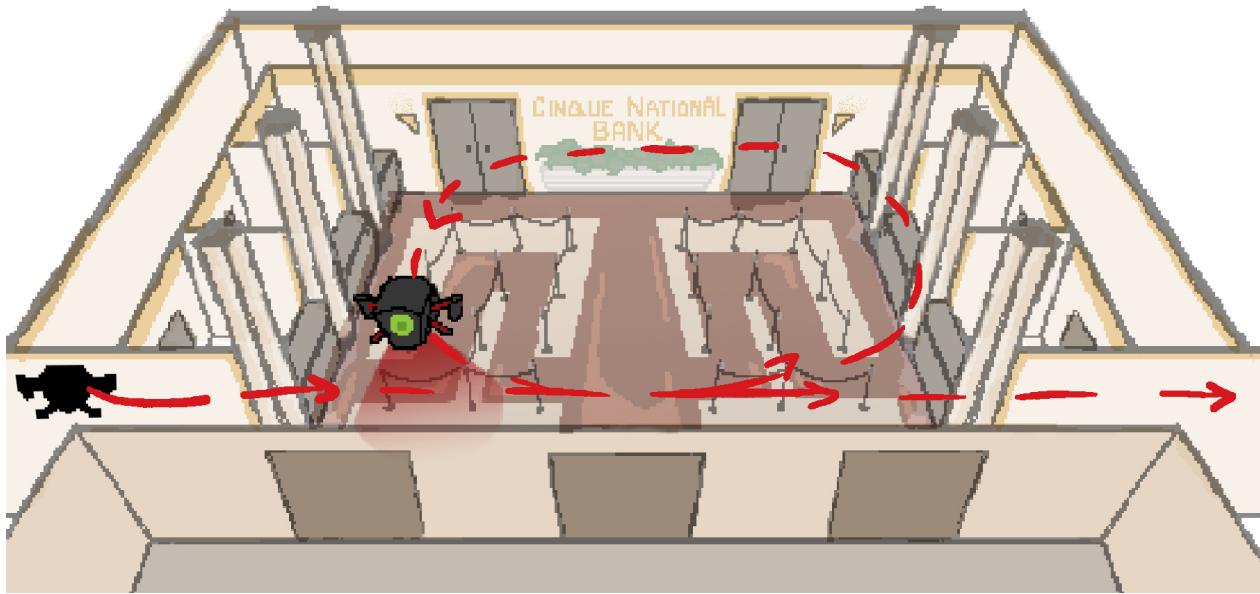


Figure 5.7: Drone — Pathing in Lobby

5.3 Mechanics

5.3.1 Movement

Players will be able to walk, crouch and dash. Each of the movement states will give out a different detection radius (crouch is the lowest, dash is the highest) which will be picked up by the drones in the area. Dash will have a short cooldown. When a player runs into another player, they will push the second player in the direction they are moving. Weapons and melee attacks also push players. Players will also be able to aim their character in a different direction than they're moving.

5.3.2 Interactions

- Quick time events are going to be presented to the player in certain situations





Figure 5.8: Interaction — Inside Vault

- There are two types of quick time events
 - Players must press a button to stop the slider in the green area of the bar to succeed in this quick time event
 - Players must quickly press the series of buttons presented to them to succeed in this quick time event



Figure 5.9: Quicktime Events

- Players can interact with safes to unlock them
 - Players will be presented with either quicktime event challenges
 - If successful, player will gain the weapon or trap assigned to the safe and safe will disappear.
 - If failed, drones will be alerted to player's location and safe disappears.
- Players can interact with locked doors to unlock them
 - Players will be presented with either quicktime event challenge
 - If successful, player will unlock door
 - If failed, drones will be alerted to player's location
- Players can also interact with defenses/traps to disable them
 - Players will be presented with either quicktime event challenge
 - If successful, player will disable trap
 - If failed, drones will be alerted to player's location and trap will be activated.

5.3.3 Vault Looting

- Score will be calculated according to how much gold is collected.
- Player with the highest score (that manages to escape) will win
- Players will channel a looting state in the vault when near a gold pile
 - Players will channel for 10 secs
 - Players will gain 100 Gold/Sec
- While inside the vault

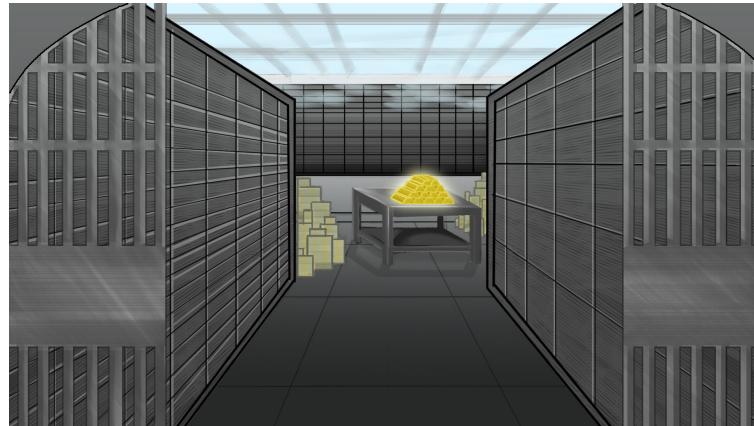


Figure 5.10: Inside the Vault

- Players will not be able to use weapons or traps
- Drones will not be able to enter vault
- Players can only melee attack other players
 - * That does not cancel the looting state.
 - * Players that are in looting state get pushed by a reduced amount
- Players/Drones drop gold when damaged/stunned. Players will need to have gold in their inventory to drop any.
 - 20 for each attack taken
 - 200 for stun
- Each drone will drop a maximum of 500 gold
- Gold that is dropped will appear as floating gold bars and will be pickupable by drones and thieves

5.3.4 Character Statistics

Health

- Players and Drones will share the same health system with differences in stats.
- It will be a health point system
 - 1 Damage point will reduce a Health Point on the player/drone
 - Health Points will regain after 15 seconds for the first point and 5 seconds for the following points, if player/drone is not damaged
 - If player/drone loses all their health, they will be stunned for 5 seconds
 - If player is attacked while stunned or up to 3 seconds after stun, no health points will be lost and no gold will be dropped.



Figure 5.11:
Health Point

Dexterity

- Each Thief will have their own dexterity stat
- Dexterity dictates how difficult the quicktime events are
 - The higher the Dexterity stat is, the faster it is to succeed.

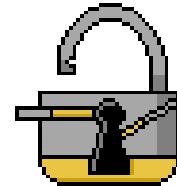


Figure 5.12:
Dexterity
Icon

Movement Speed

- Players and Drones will have different speed stats
- Speed can be affected by certain weapons or defenses



Figure 5.13:
Speed Icon

5.4 Combat

- Players will be able to engage in combat with:
 - Other Player Characters
 - Drones
- Players will have a basic push that does no damage but pushes players/drones away. This push will have a short cooldown.
- Weapons will also push away enemies
- Players drop gold when they take damage



5.4.1 Safes (Pickups)

- Safes are available in designated areas in the bank
 - Players will need to interact with safe
 - A button prompt will appear when player in range
 - Player can press button to attempt to unlock safe
- Safes will contain Weapons and Traps
- They are represented as small glowing safes with an image of what's in it.
- Player will need to complete a quicktime event to unlock safe.
 - If successful, player will gain the weapon or trap assigned to the safe and safe will disappear.
 - If failed, drones will be alerted and safe disappears.
- New safes appear as the game progresses
- There is a minimum and maximum number of pickups available at all times.

5.4.2 Player Weapons

- **Stun Gun:**

- Shoots a projectile in a straight line.
- Projectile will do 1 DMG when enemy is hit
- Projectile will disappear upon impact
- Player gets 5 shots (ammo) per Stun Gun pickup
- After 5 shots, Stun Gun will disappear from inventory



Figure 5.14: Stun Gun

- **Electric Baton**

- Activatable weapon, does AoE DMG around character
- Does 1 DMG per hit
- Pushes enemies away
- Melee weapon that increases player movement speed by 30%
- Lasts for 8 seconds (Active)



Figure 5.15: Electric Baton

5.4.3 Player Traps

- **Electric Field:**

- Pick up
- Can be deployed on any tile (if the tile has no traps already)
- AoE damage field
 - * Does 1 Damage/2secs
 - * Slows Players Movement Speed by 25%
 - * Lasts for 2 Minutes if untriggered



- * Lasts for 30 seconds after triggered

- **Lethal Lasers:**

- Pick up
- Can be deployed on any tile (if the tile has no traps already)
- On-Contact damage
 - * Does 2 Damage/contact
 - * Lasts for 2 Minutes if untriggered.
 - * Disappear after trigger.

5.4.4 Inventory System

- An inventory system will be in place for weapons and traps pickups
- Picking up a weapon that the player already has refreshes the ammo
- Picking up a trap that the player already has adds to the ammo (Max 4)
- Players presses button to cycle between items



Figure 5.16:
Weapon Select

5.4.5 Game Flow Summary

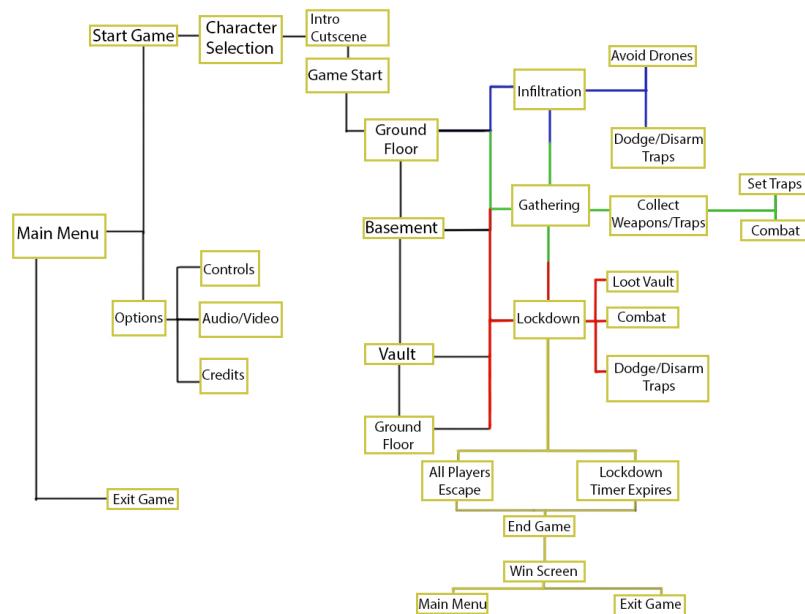


Figure 5.17: Game Flow

6 User Interface

6.1 UI Layout

As seen in Figure 6.1, the UI elements will appear on the corner of each respective player's screen. The elements shown in the UI are going to be:

- **Player Health:** Health is represented using the red bars
- **Gold Score:** Score is represented above the health using numbers
- **Character Profile:** A picture of the selected character
- **Active Item:** An icon of the selected weapon/trap
 - This will disappear if player doesn't switch/use weapons/traps for 10 secs

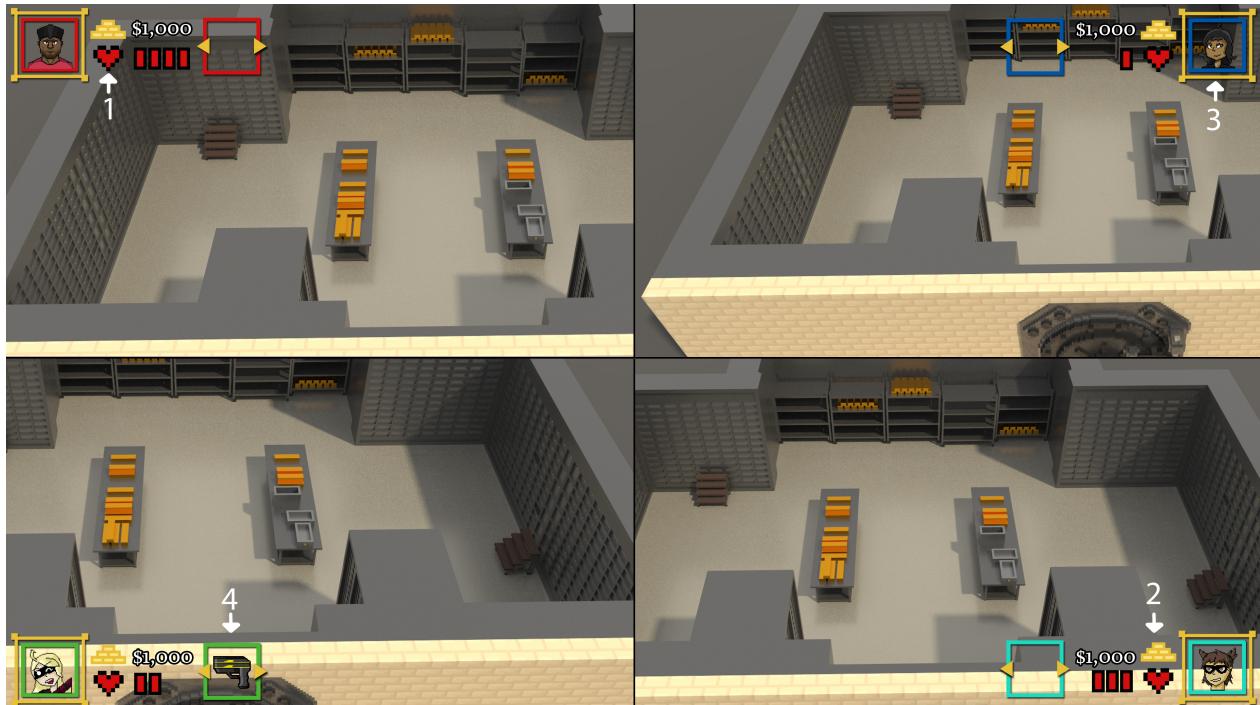


Figure 6.1: UI Layout

6.2 Menus

6.2.1 Menu Flow Chart

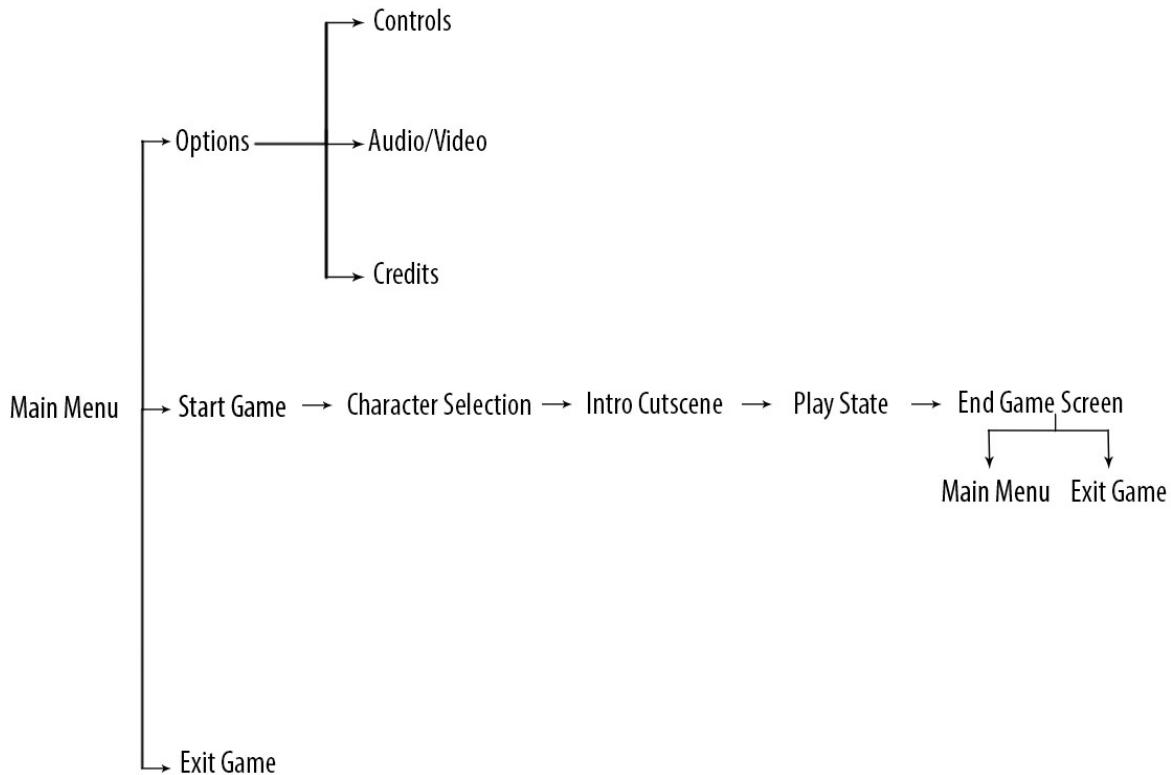


Figure 6.2: Menu Flow Chart

Main Menu Screen

First Screen that the player has access to. Contains Start Game, Options, and Exit Game buttons.





Figure 6.3: Main Menu

6.2.2 Game Screen

- This screen starts after player selects Start Game, and includes multiple other screens.
 - **Character Selection:** In this menu, players select their characters before the match starts (See Figure 6.8)
 - **Intro Cutscene:** This cutscene plays before the match starts, giving context for the game and explains the setting (See Figure 6.6)
 - **Play State:** This screen includes everything in the actual game, from UI to the Characters. It is the main screen the players are going to be on.
 - **End Game Screen:** This screen shows the winner's character splash art then all of the players ranked in order of score in front of the vault (Figure 6.1). This screen contains Main Menu and Exit Game buttons

6.2.3 Options Menu Screen



Figure 6.4: Options Menu

- This screen can be accessed through the **Main Menu** by selecting the **Options** button. It contains multiple other screens.
 - **Controls:** This shows the controls for both controllers and keyboard
 - **Audio/Video:** This allows the player to customize Audio and Video settings
 - **Credits:** This shows the credits screen.

The only in-game menu available is the pause menu. It will include 2 buttons:

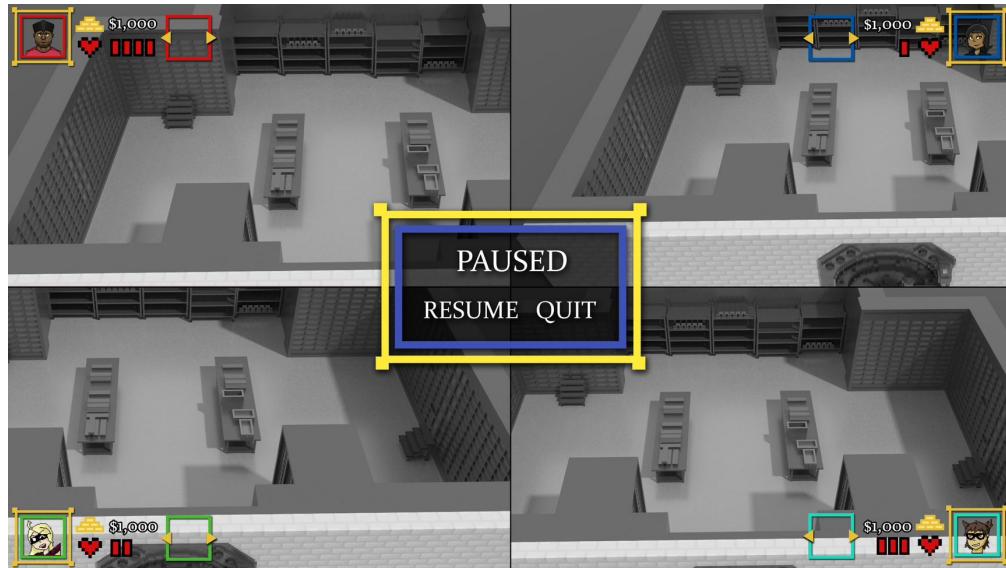


Figure 6.5: Pause Menu

- **Resume Game:** Exits pause screen and continues game.



- **Exit Game:** Exits game

– If a player presses exit game, other players may press A to accept or B to resume game.

Gameplay is paused when screen is brought up.

6.2.4 Cut Scenes

Introduction

All four characters are introduced to the player through a slanted comic book style to demonstrate to the player exposition of how the four thieves got to the bank (See 6.6). This cutscene is triggered after the players have all selected their characters and enter the game.

Description

EXT. Outside of Bank – NIGHT

- Four characters are seen on the left side of the screen on one of the slanted comic book-like panels.
- First panel is of the one of the four characters running/sneaking to the bank.
- Second panel is one of the four characters staring up at the bank in awe.

INT. Inside of Bank – NIGHT

- Third panel is one of the four characters breaking/sneaking into the bank.
- Last panel is one of the four character gesturing that they are ready to rob the bank.

Storyboard

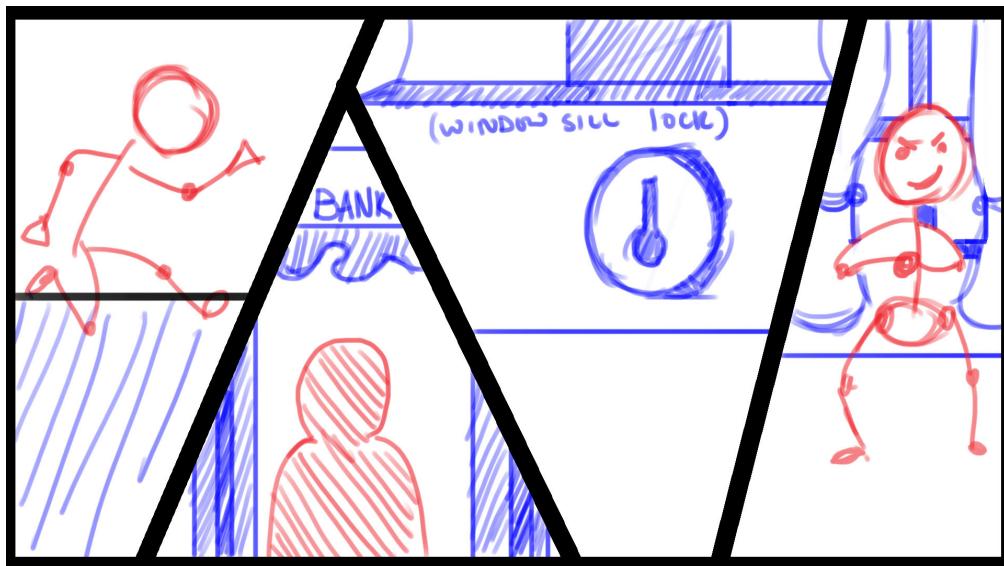


Figure 6.6: Opening Cutscene

Victory Screen

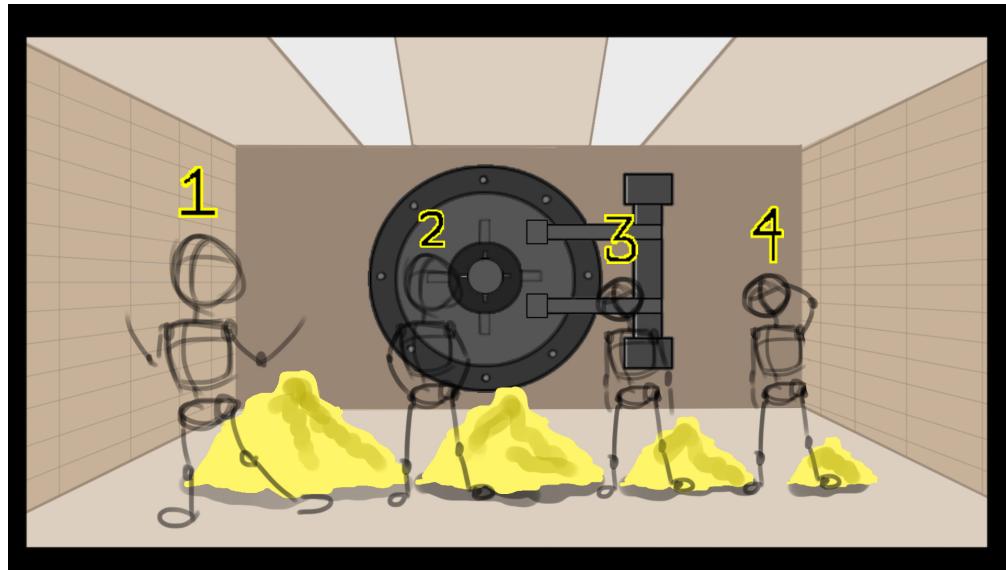


Figure 6.7: Victory Screen

Character Selection Screen

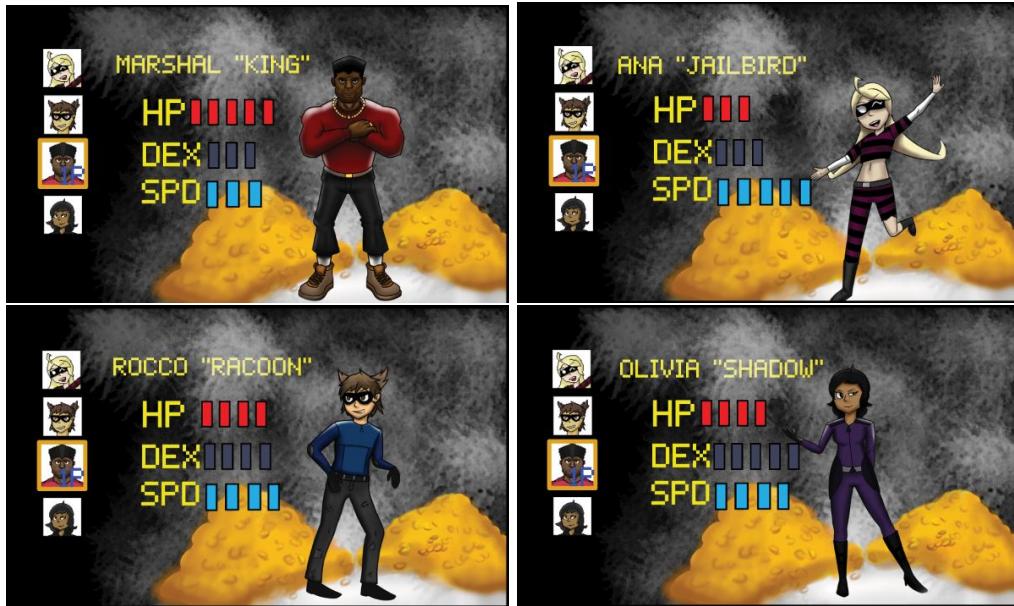


Figure 6.8: Character Selection Screens

6.3 Control Scheme

Heist is played using a controller for each player.



Figure 6.9: Controller Control Layout

6.4 Audio

- Audio prompts will aid the players comprehension on when key events are happening in game

6.5 Music

- Three general themes will be present, and be active once a certain stage in the game has passed:
 - Infiltration Phase
 - Gathering Phase
 - Lockdown Phase
- Additionally, different “jingles” will play depending on the outcome of the match for the player:
 - Victory Jingle
 - Defeat Jingle

6.6 Sound Effects

- Sound effects will play depending on the situation:
 - Picking up an object
 - Placing a trap
 - Succeed/fail a quicktime event
 - Taking damage
 - Opening a door
 - Collecting/dropping gold



- Attacking with weapons
- Drones
- Activating a trap
- Lockdown Siren

6.7 Help System

- Button prompts will appear when player is:
 - Close to a pickup
 - Close to an unlockable door
 - Close to a gold pile in the vault
- Controls will be shown in the beginning of each match after the cutscene.



7 Artificial Intelligence

7.1 Enemy AI

7.1.1 Drones

- Patrols a set path until alerted and returns to the path once threat level returns to zero
- If it is alerted by a sound, the threat level becomes one and attempts to find the source of the sound
 - It will go to the place the sound originated at, and once there begin a patrol of the area. Once patrol is complete and it doesn't see anything, its threat level returns to zero and resumes its initial patrol.
- If it sees a player, its threat level goes to two and attempts to follow and stun the player.
 - If it loses sight of the player for 5 secs, the threat level becomes one, and it will begin to patrol the area.
 - If the drone successfully stuns the player, it will pick up gold till it is full, or there is none left. Then it will return back to its original patrol.
- If the drone, while following or patrolling an area, moves beyond a set distance from its original patrol, it will disengage, set its threat level to zero and return to its original patrol.
- Once the lockdown has been activated, the drones will begin threat level three, where their patrol distance is increased and their speed is increased.
- If at any point the drone takes enough damage, it will get stunned and drop 200 gold.

7.2 Drone Indicators

Indicators on the drone's face will change based on what state it is in.

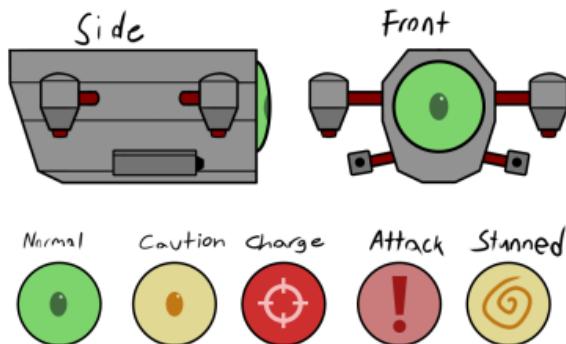


Figure 7.1: Drone States

States

- Normal — Patrolling
- Caution — Notices a sound, and is going to investigate
- Charge — Has targeted a player and is charging up an attack
- Attack — Noticed a player and is currently following them
- Stunned — Cannot act for a few seconds and drops 200 gold

7.3 Drone Finite State Machine

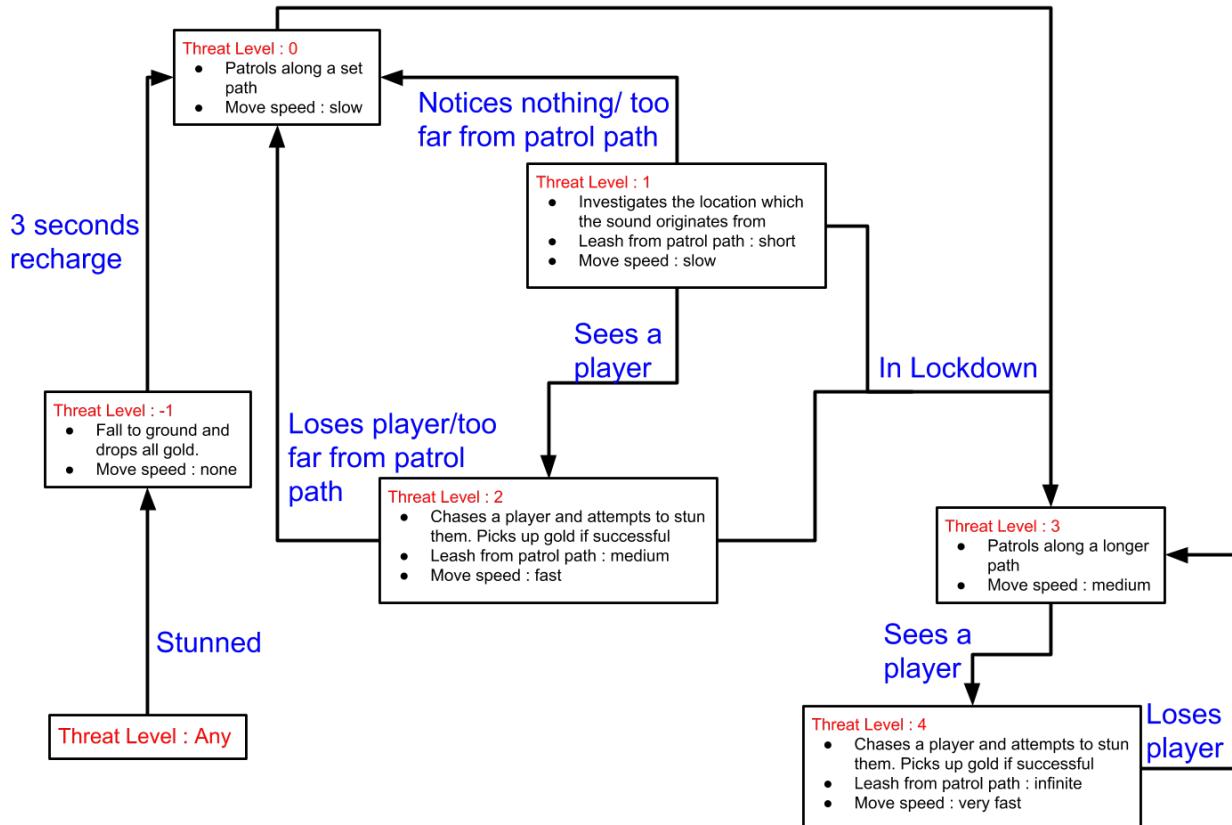


Figure 7.2: Drone FSM



8 Technical

8.1 Target Hardware

Target hardware is as follows:

	Minimum	Recommended
CPU	Pentium G4500 or Equivalent	Core i3-8500 or Equivalent
GPU	AMD 7750 or Equivalent	AMD 260X or Equivalent
RAM	2 GB	4 GB
OS	Windows	Windows

8.2 Game Engine

The game engine will be Unity 2018.4 LTS once it has been released. Pre-production work will be done in the most up to date version of Unity.

8.3 Scripting Language

All scripts are written in C# following the guidelines that are outlined on Microsoft C# Coding Conventions



9 Appendices

9.1 Asset List

9.1.1 Art

Playable Characters

Playable Characters	Description
Marshal_‘King’	Male, athletically built, African American, brown eyes, black hair, primarily long sleeves (top color variations for how many players choose King) dark bottoms and heavy boots/shoes.
Olivia_‘Shadow’	Female, slender built, middle eastern ancestry, brown eyes, black hair, full body catsuit (top color variations for how many players choose King) and knee high black boots.
Ana_‘Jailbird’	Female, slender, Caucasian, brown eyes, blond hair, wears a mask, and dressed in prison attire from being a consistent escapee.
Rocco_‘Racoon’	Male, medium built, Caucasian, blue eyes, tattered clothing, hair is disordered with two bunches are pointed up that resembles ears and wears a mask.

Non-Playable Characters

Non-Playable Characters	Description
Security_Drone	Follows set path to stop players from getting away with gold.
A.S.I.A. (Artificial, Security, Intelligence, Administrator)	A.S.I.A. controls all of the bank’s security systems that including the drones who will interact with the player through voice lines.



Model and Texture List

3D Models	Description
Plants (5)	Potted plants to fill the environment
Filing Cabinets (4)	Filing Cabinets to fill the environment
Tables (4)	Assorted tables to fill the environment
King Character	King character model
Jailbird Character	Jailbird character model
Shadow Character	Shadow character model
Racoon Character	Racoon character model
Security Camera	Model of a Security Camera
Electric Field	Model of electric field hazard + particles
Lethal Laser	Model of laser emitting hazard
Drone	Model of a Drone
Taser	Model of the Taser Weapon
Baton	Model of the Baton Weapon
Computers (6)	Assorted Computer Models
Laptops (3)	Assorted Laptop Models
Papers (3)	Assorted Paper Models
Books (4)	Assorted Book Models
Couches (3)	Assorted Couch Models
Loveseat	Loveseat Model
Desk Chair	Desk Chair Model
Chairs (4)	Assorted Chair Models
Small Bookshelves (3)	Assorted Small Bookshelf Models
Large Bookshelves (3)	Assorted Large Bookshelf Models
Desks (6)	Assorted Desks
Teller Windows	Model of Teller Windows
Bank Machine	Model of Bank Machine (ATM)
Wall Segments(3)	Assorted styles of wall. (Brick/Plaster/Metal)

Sprites

Sprites	Description
Stun Sprite	Stars spinning around character. Disappears after stun is over.
Punch Sprite	Energy burst from punch animation. Disappears after impact.
Stun Timer	Intuitive circle that hovers above the player's head to signify how long they are stunned for.
Gold Channelling Sprite	
QuickTimeEvent Sprite	Displays the sprite object for when the Quick time event happens for players to interact with.
Security Door Lights Sprite(optional)	Simple triangular sprite that rotates around the alarm lights at the vault to security points.
InGame Timer Sprite(optional)	Timer is displayed for when the vault has been infiltrated.
LockDown Icon Sprite	



Animation List

Animation List	Description
Player Idle (In-game)	While player is not moving, idle animation consist of character controlled rocking bobbing slighting up and down as if ready to move any time.
Player Pose(Victory screen)	Players who are first will have fist in air or arms pumping to signify that they got the most gold.
Player Push	
Player (ReactiontoPush)**	
Drone Hover	Bobs slighting up and down with a slight rock
Drone Dropping Gold	Spins or shakes while gold drops
Player Picking Up/Dropping traps or weapons	
Safe(Pickups) door open	Door of safe opens when player successfully passes a quick time event to get pick up
King Walk Animation	King walks with a heavier gait, lumbering around the bank due to his larger build and being able to carry more gold than other characters.
Shadow Walk Animation	Shadow walks with longer and faster gait. Skulking around the bank, with hers swift movements.
Jailbird Walk Animation	Jailbird walks carefree with looser gait.
Raccoon Walk Animation	Raccoon walks with a slight stagger due to his jerky nature.
Vault Door Animation	Vault door opens when player(s) reach the vault and the 'gear' spins as a separate object.
Room Door Animation	Door to rooms will open when characters enter a room. (physics based when character hits door it moves on a pivot)
Security Drone Attack	Security drone can engage or retract arm to attack/stun players.
SpotLight Animation	Spotlight moves left to right repeatedly.
Player Push	All characters have the same general punch animation.
Player Shoot	All characters have the same general shoot animation. Weapon spawns into character hand.
Player Baton Swing	All characters have the same general baton hit animation. Weapon spawns into character hand.
Character Slow Movement	Character moves half a speed slower when slowed.
Character Menu Chosen	Layout will be 2 dimensional with character stats and short description with character and a image of the character.
Character Endgame	Character does victory cheer for 1st,2nd,3rd,4th
Security Drone Default	Drone moves along the set path normally.
Security Drone Caution	Drone moves along the set path slightly faster and LED's change to orange.
Security Drone High Alert	Drone moves along the set path faster and LED's change to red.



Interface Art List

User-Interface List	Description
Controls UI	Display of controller/keyboard to show players the controls of the game.
Player InGam HUD	Displays player stats, gold, health, player icon, weapon selected.
Menu Start Screen GUI	Menu options are displayed (start, characters select,
Character Selection GUI	Characters are displayed for players to select between the four characters.
Menu Pause Screen GUI	Pause options (resume, settings, extras)
Player Scoreboard GUI	Displays how many gold that has been obtained to the player throughout/endgame.
EndGame Victory Screen GUI	Displays the winner with the most gold, second most, third most and lowest at endgame.
LowdownTimer UI	Displays timer during lockdown.
Introduction CutScene	Comic Book style how the characters get into the bank.

9.1.2 Audio

Music

Sound	Description
Infiltration Theme	Quiet, tension raising jazz piece, lots of swagger and focus on drums and upright bass
Gathering Theme	Jazz piece with higher overall volume and faster tempo, high focus on sax lead.
Lockdown Theme	High intensity, fast paced jazz piece. Parts are pure chaos and meant to conflict with each other. Heavy focus on brass.
Victory Jingle	Quick 10 second long sax line, use of positive chordal tones
Defeat Jingle	Quick 10 second long jazz line, negative chordal tones to convey sadness

Environmental Sounds

Sound	Description
Bank Door Open	
Room Door Open	
Collecting Gold	Cash register “Cha-Ching”
Losing Gold	Coins dropping
Electric Field Zap	Zap
Lethal Laser Shot	Laserbeam
Footsteps	
Lockdown Siren	Loud Naval siren
Drones Ambient patrol	Machine whirring
Drones Pursuit	Machines aggressively beeping
Drones Attacking	Loud zap sounds
Set Trap	Click
Pick up Trap	Click



Weapon Sounds

Sound	Description
Stun Gun Pickup	Click
Stun Gun Fire	Muzzled gunshot
Stun Gun Hit	Zap
Stun Gun Out of Ammo	Gun firing empty clip
Electric Baton Pickup	Click
Electric Baton Fire	Swinging bat through air
Electric Baton Hit	Whack and zap
Electric Baton Out of Time	Open electric current powering down
Basic Melee Weapon Hit	Whack

Interface Sounds

Sound	Description
Quicktime Event Success	Electric device being powered down
Quicktime Event Fail	Quiet alarm beeping
Open Menu	Vault opening

Voice

Sound	Description
Enter Bank(4)	
Exit Bank(4)	
Pick up Trap(4)	
Pick up Weapon(4)	
Spot Security Drone(4)	
Taking Damage(4)	
Collecting Gold(4)	
Losing Gold(4)	
Taunt(4)	
Joke(4)	
Victory(4)	
Defeat(4)	
Capture(4)	



10 Game Art

10.1 Concept Art

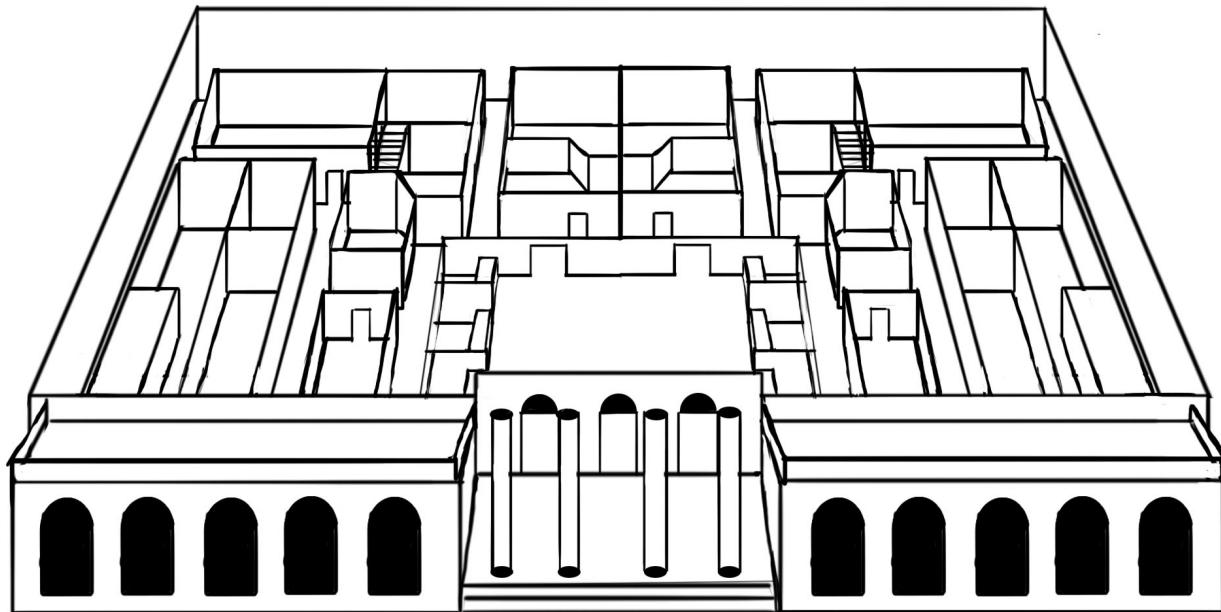


Figure 10.1: Early layout showing perspective



Salty Bunch Co.



Figure 10.2: Assets for Bank interior

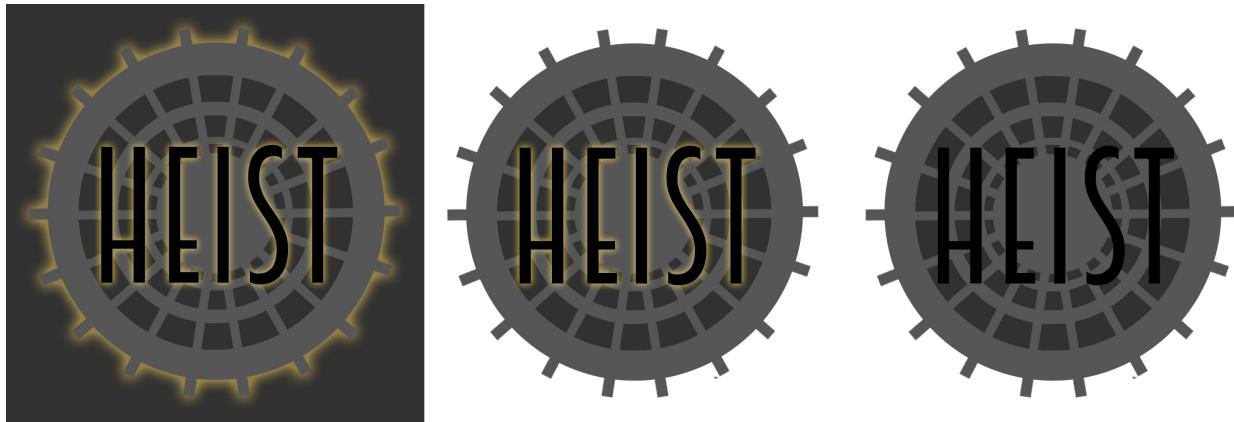


Figure 10.3: Logo concepts



Salty Bunch Co.



Figure 10.4: Main Menu

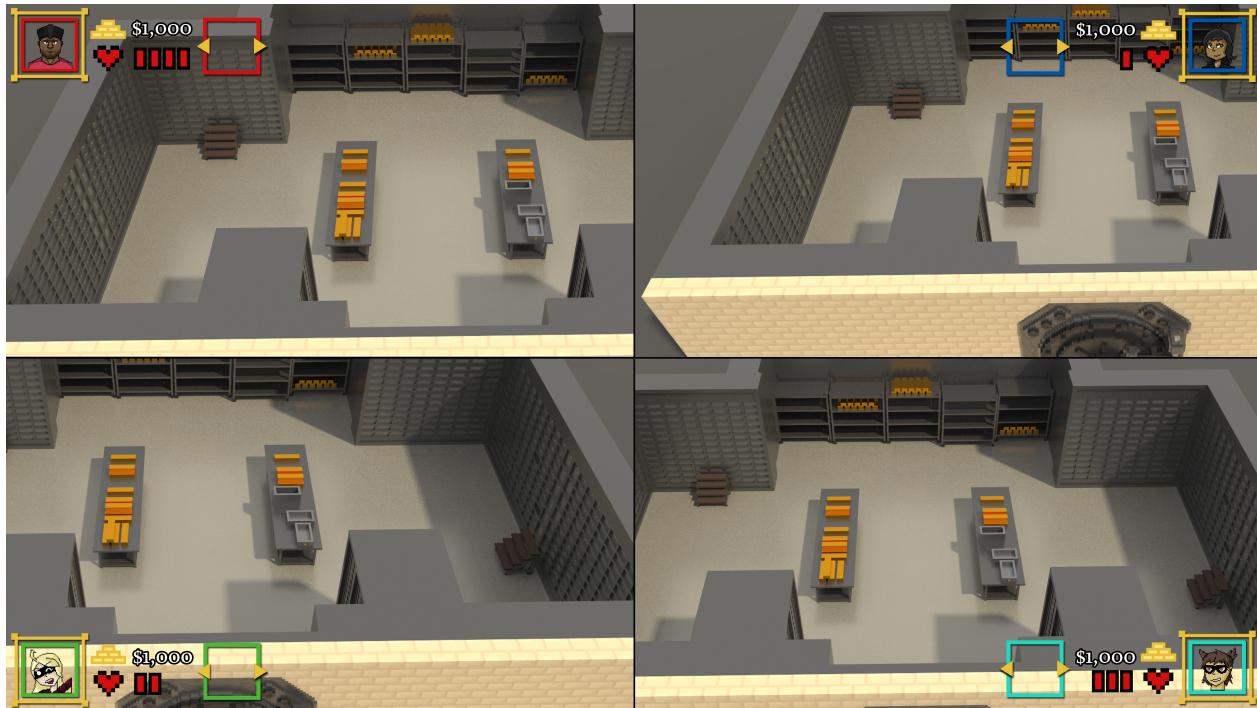


Figure 10.5: In-game UI



Salty Bunch Co.

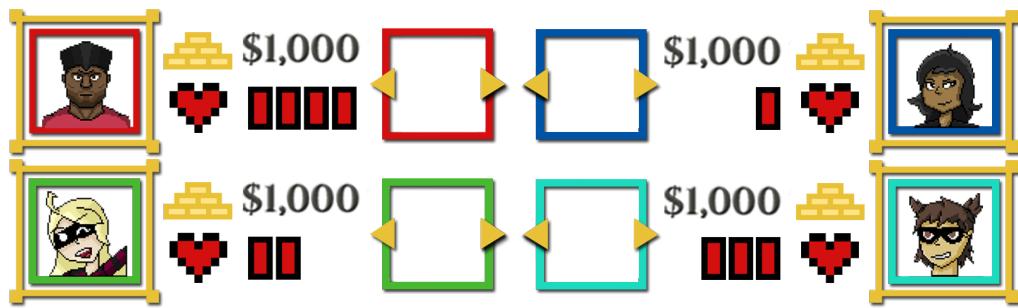
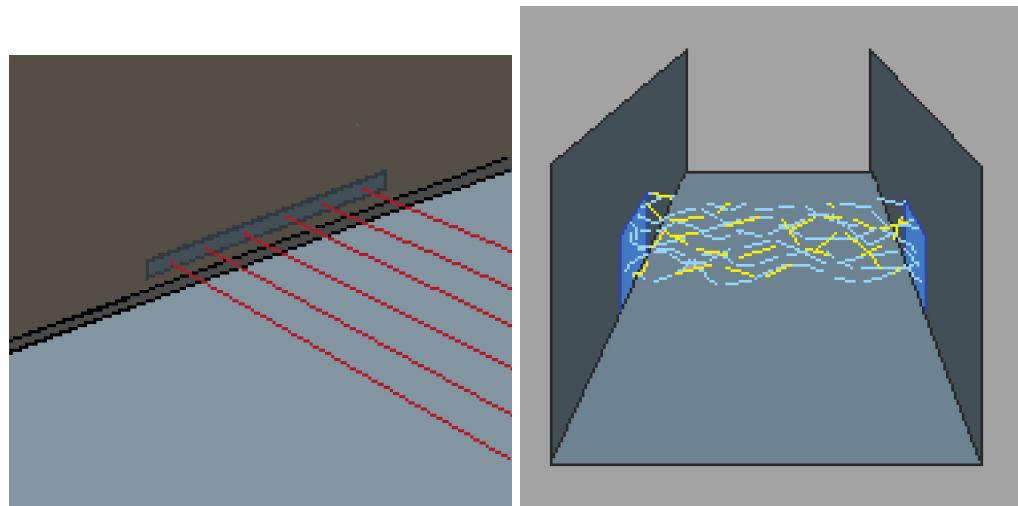


Figure 10.6: Early Character UI



(a) Lethal Laser

(b) Electric Field

(c) Camera Sensor Early Concept

Figure 10.7: Concept of Hazards

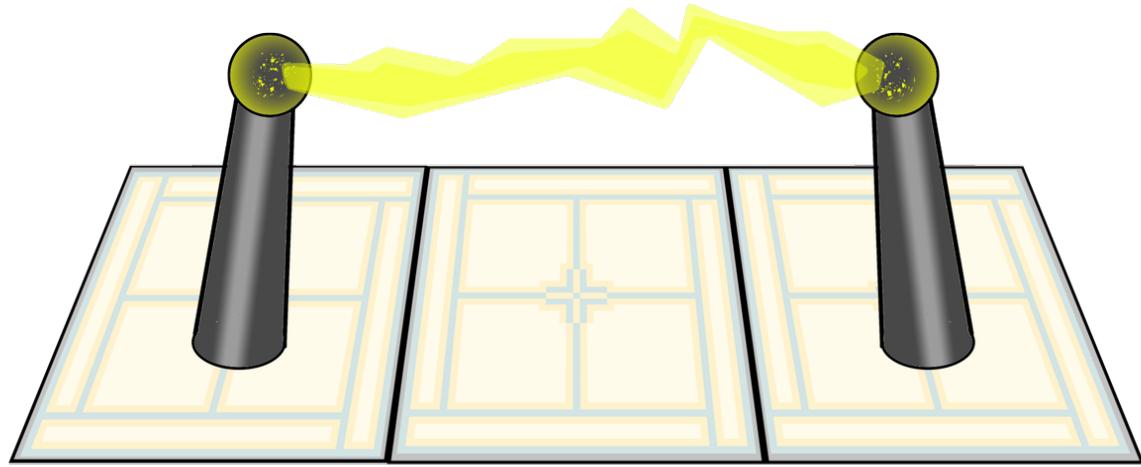


Figure 10.8: Electric Field Concept



Figure 10.9: Stun Gun and Baton Concept Art

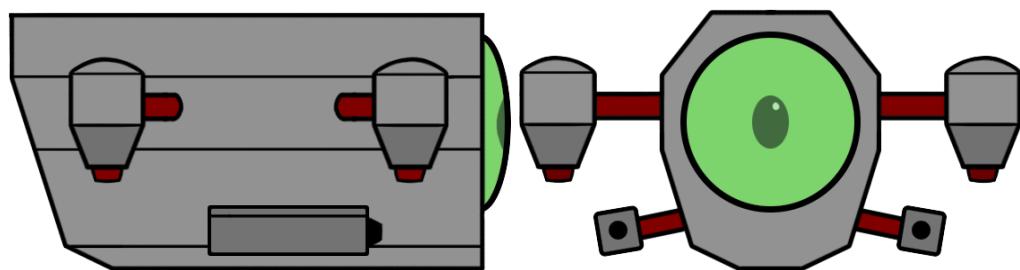


Figure 10.10: Security Drone



Salty Bunch Co.

10.2 Characters



Figure 10.11: Heist Characters



Figure 10.12: Individual Heist Character Portraits

10.3 Environments



Figure 10.13: Bank Exterior

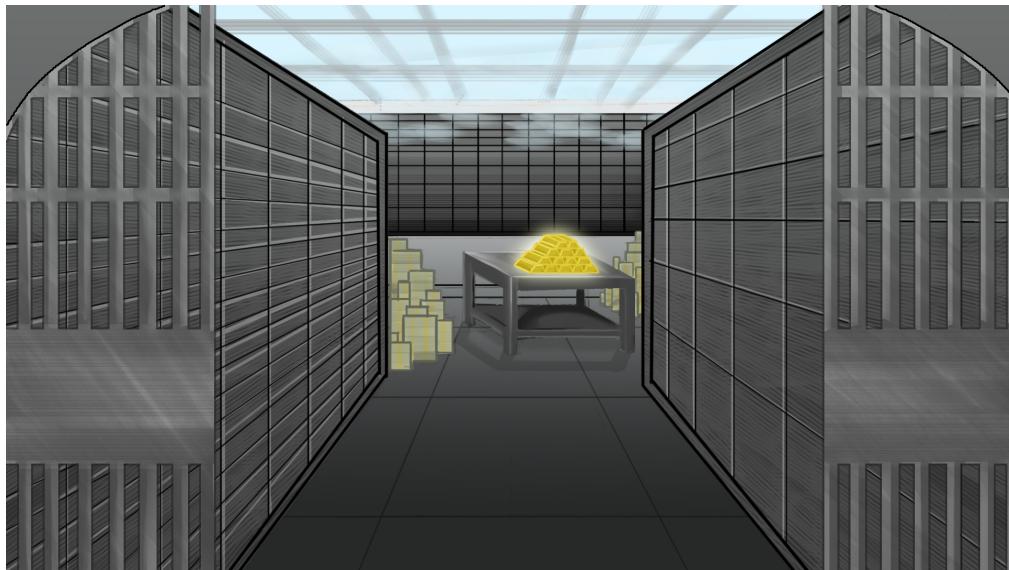


Figure 10.14: Vault Interior

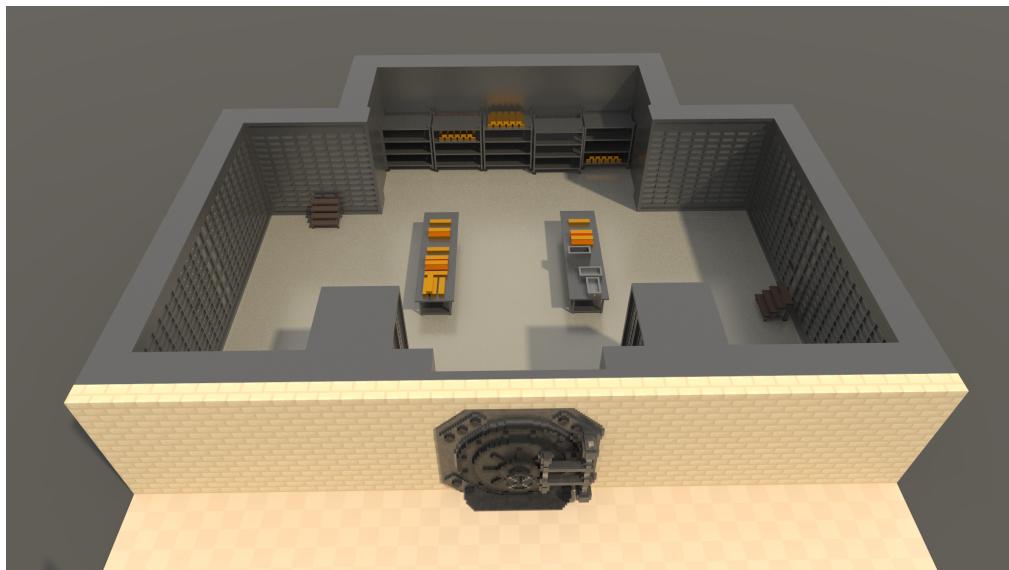


Figure 10.15: Render of Vault Concept



Figure 10.16: Render of Vault Concept

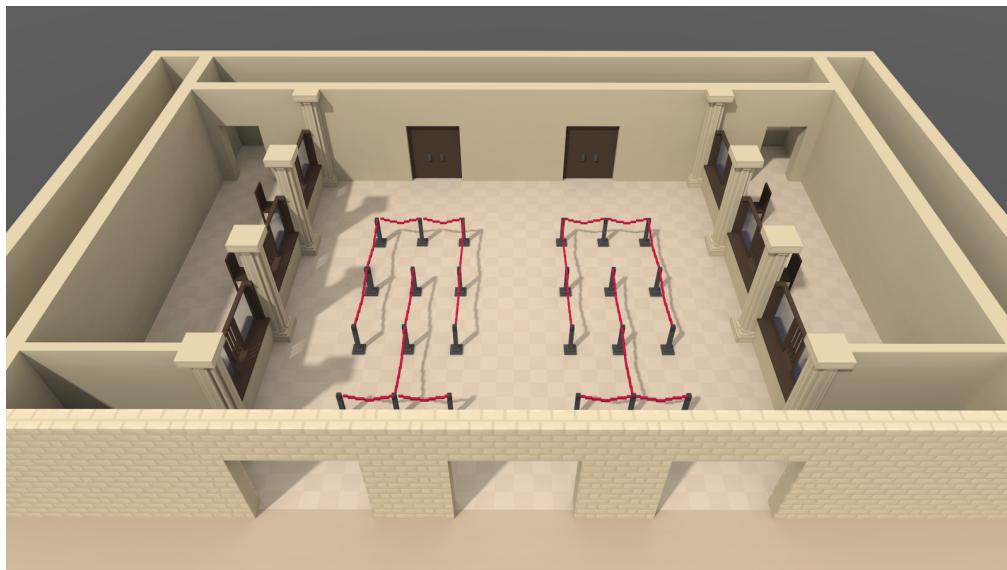


Figure 10.17: Render of Lobby

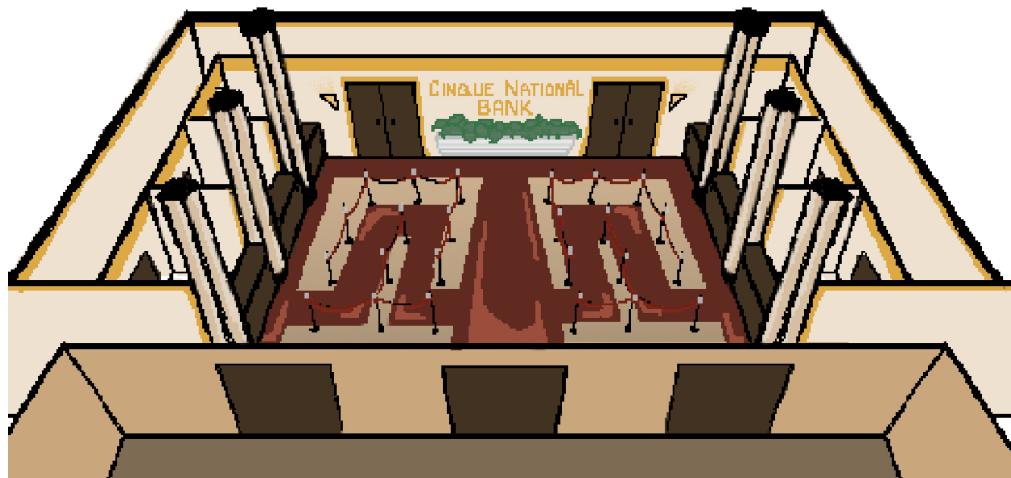


Figure 10.18: Bank — Main Lobby

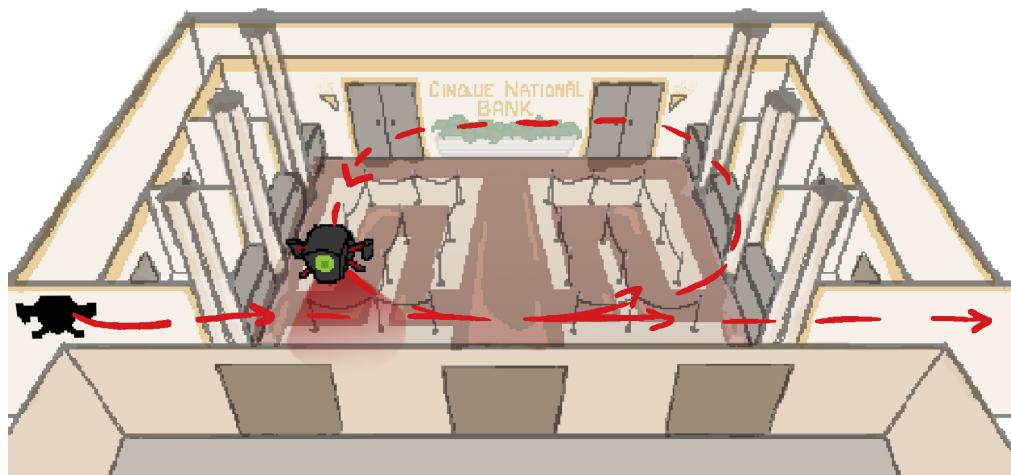


Figure 10.19: Drone Pathing within Main Lobby

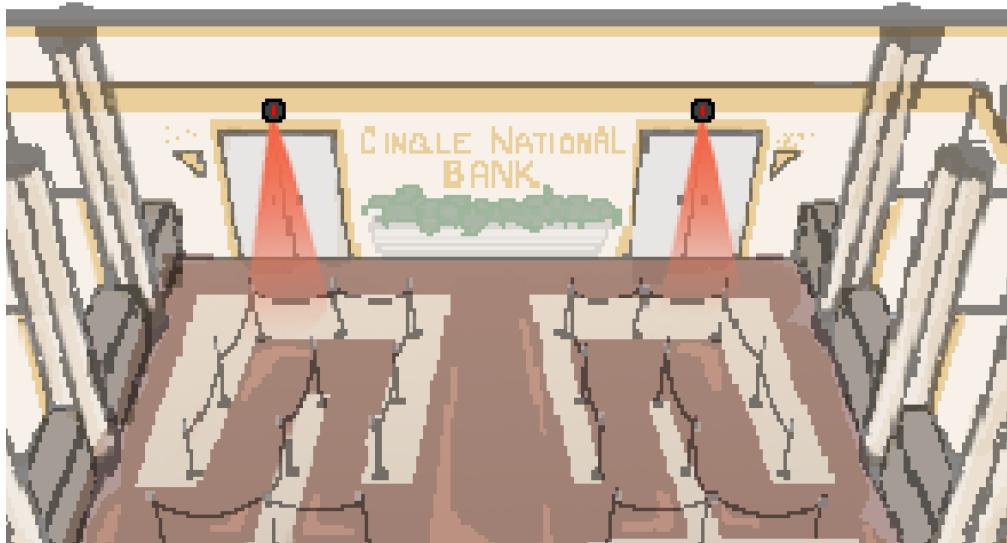


Figure 10.20: Security Cameras in Lobby



Figure 10.21: Concept Render of Basement Hallway



Figure 10.22: Lethal Lasers Outside Vault



Salty Bunch Co.