

Project Report

1. Overview

This game is an anti-gambling game named “No More Gambling”. There are gambling games including Blackjack and Roulette. Blackjack is a gambling game which can be counted with math and Roulette is a game of completely luck. There is a red building in the theme, which is the house owned by the player. Also, there is a machine gun which player can use his bank roll to buy it and use it to kill other non-player characters.

Player can reach to non-player characters to start playing gambling games, when the player win some money, it will be added to bank roll. But when player losses, the lost amount of money will be removed from bank roll. When bank roll reaches to 0, player can sell his property, which is the red building, to have more bank roll to continue playing the game. However, when all the properties player has are sold, and the bank roll reaches to 0, player will be chased by other non-player characters and killed by them, this is the time that this game is over.

1.1. The list of all assets

1.1.1. Textures

The skybox texture:

Emil, P. (2013) *Night Skyboxes* [Digital art]. Available at: <https://opengameart.org/content/night-skyboxes> (Accessed: 5 November 2023).

The terrain texture:

Marble 017 (2021) Available at: <https://ambientcg.com/view?id=Marble017>

(Accessed: 5 November 2023).

The poker card texture:

Matth_met (2021) Available at: [https://sketchfab.com/3d-models/poker-set-](https://sketchfab.com/3d-models/poker-set-841e271f392b4b3187b19fbdbb81ef62)

[841e271f392b4b3187b19fbdbb81ef62](https://sketchfab.com/3d-models/poker-set-841e271f392b4b3187b19fbdbb81ef62) (Accessed: 6 December 2023).

The tetrahedron texture:

Tiles 130 (2023) Available at: <https://ambientcg.com/view?id=Tiles130>

(Accessed: 11 November 2023).

Bankroll Box texture:

[https://www.bing.com/th?id=OIP.Uchf4hxIToFIMloS0vugcgHaGB&w=155&h=2](https://www.bing.com/th?id=OIP.Uchf4hxIToFIMloS0vugcgHaGB&w=155&h=200&c=8&rs=1&qit=90&o=6&dpr=1.5&pid=3.1&rm=2)

[00&c=8&rs=1&qit=90&o=6&dpr=1.5&pid=3.1&rm=2](https://www.bing.com/th?id=OIP.Uchf4hxIToFIMloS0vugcgHaGB&w=155&h=200&c=8&rs=1&qit=90&o=6&dpr=1.5&pid=3.1&rm=2) (no date) (Accessed : 27

July 2024).

1.1.2. Meshes

Red building model:

Flavio (2018) *Red Building* [Digital model]. Available at:

<https://opengameart.org/content/red-building> (Accessed: 4 November 2023).

Machine gun model:

Goswick J. (2015) *.308 Machine Gun* [Digital model]. Available at:

[https://sketchfab.com/3d-models/308-machine-gun-](https://sketchfab.com/3d-models/308-machine-gun-4ca5f52eef6244629770c56752b67583?sscid=c1k7_6w5yb&utm_source=shareasale&utm_medium=affiliate&utm_campaign=1238556_1272560)

[4ca5f52eef6244629770c56752b67583?sscid=c1k7_6w5yb&utm_source=share](https://sketchfab.com/3d-models/308-machine-gun-4ca5f52eef6244629770c56752b67583?sscid=c1k7_6w5yb&utm_source=shareasale&utm_medium=affiliate&utm_campaign=1238556_1272560)

[easale&utm_medium=affiliate&utm_campaign=1238556_1272560](https://sketchfab.com/3d-models/308-machine-gun-4ca5f52eef6244629770c56752b67583?sscid=c1k7_6w5yb&utm_source=shareasale&utm_medium=affiliate&utm_campaign=1238556_1272560) (Accessed:

3 December 2023).

Blackjack table model:

Powell N. (2020) *Casino Poker Table* [Digital model]. Available at:
<https://sketchfab.com/3d-models/casino-poker-table-f36fc75d825148618aa6e5cbfb43f28e> (Accessed: 1 December 2023).

Roulette table model:

Tameranian (2023) *Roulette Table* [Digital model]. Available at:
<https://sketchfab.com/3d-models/roulette-table-f276b7fc198e4556932c7b52761e409c> (Accessed: 2 December 2023).

1.1.3. Sounds:

Background music:

UNIVERSFIELD (2023) *Last Time* [Mp3]. Available at:
<https://freesound.org/people/UNIVERSFIELD/sounds/712306/> (Accessed: 30 November 2023).

Bounce sound:

JustInvoke (2018) *Bounce* [Wav]. Available at:
<https://freesound.org/people/JustInvoke/sounds/446100/> (Accessed: 2 December 2023).

Main character walking sound:

Markagames (2018) *Walking* [wav]. Available at:
<https://freesound.org/people/markagames/sounds/444666/> (Accessed: 3 December 2023).

1.1.4. No meshed objects

Tetrahedron

Ball

Poker card

Bankroll box

Bullet

2. Basic Game Modelling

2.1. Intro-screen

The final game intro-screen including the name of the prototype with “No More Gambling”, instruction of starting the game by pressing “ENTER” text, and the listing of keyboard controls including player walking forward with “W”, player walking backward with “S”, camera turning left with “A”, camera turning right with “D” and player jumping with “SPACE”.

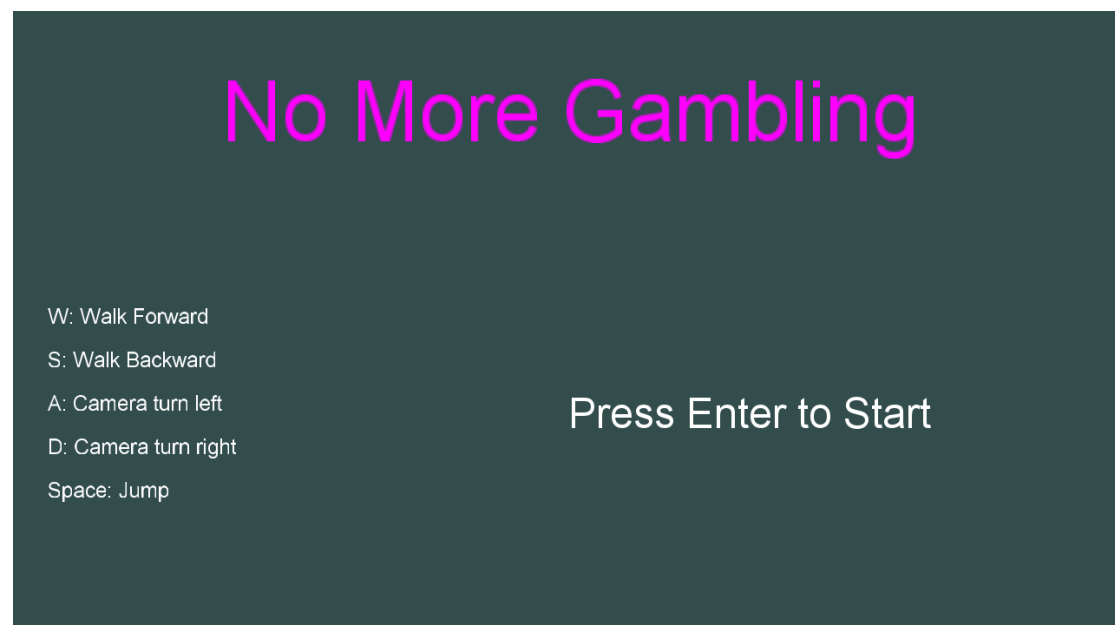


Figure 1 Intro-screen

2.2. Primitive-based game objects

There are five primitive-based game objects including the poker card, the bankroll box, bullet, the tetrahedron object and a bouncing red ball. The poker card of Duce of club is created based on cuboid class and been placed in the world by calling card class. The bankroll box is created and properly meshed based on cuboid class and been placed in the world by calling bankroll box class. The bullet is created based on the ball class. The tetrahedron object and the bouncing red ball are from template (Dr. Chris C., 2023), the change of tetrahedron object is that the texture has been changed to fit in the world more properly.

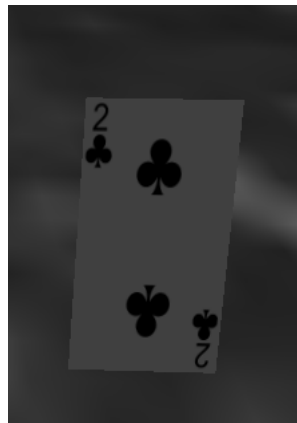


Figure 2 card



Figure 3 Bankroll box



Figure 4 bullet

2.3. Skybox and terrain

The skybox in this game uses one of Emil's Night Skyboxes (2013) with castles and old buildings to create a quaint atmosphere. The terrain in this game uses marble material to fit in the whole atmosphere (Marble 017, 2021).

2.4. Audio

There are three music in this game. The background music is using Last Time from UNIVERSFIELD (2023), and after all game models are being loaded, the background music will be paused. When the ball falls to the ground, there is a bounce sound from JustInvoke (2018). When the player is walking, there is a walking sound playing at the same time (Markagame, 2018).

2.5. HUD

There is a bank roll text on the top left screen to show how much money the player has left to continue playing gambling games.

There is also a time remaining countdown right under the bankroll text.



figure 5 HUD texts

3. Camera, Meshes, Lighting, and FX

3.1. Camera

The camera is behind the player while moving player around. When press A and D, the camera will rotate to left and right to change the view of the player.

3.2. Mesh-based objects

There are four mesh-based objects in this game and all objects are added with collider boxes. There is a red building on the left side of the starting screen developed by Flavio (2018). The rest of the models are on the right side of the starting screen including the Casino Poker Table (Powell N., 2020), the roulette table (Tameranian, 2023) and the .308 machine gun (Goswick J., 2015).

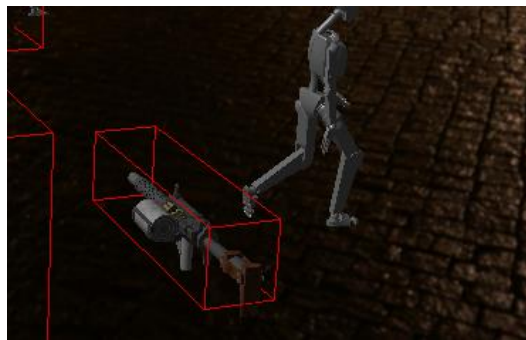


Figure 6 machine gun



Figure 7 Blackjack table



Figure 8 Roulette table



Figure 9 Red building

3.3. Lighting

There is a lighting working in the world as the sun to give more liveness to this world (Dr. Chris C., 2023).

3.4. Special effects

The fog effect has been applied to the skybox to add more tensity to the gameplay environment.

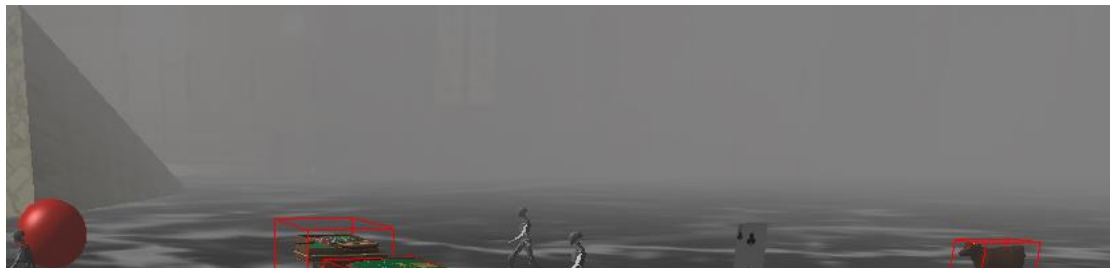


Figure 10 Fog effect

4. Physics, AI and Gameplay

4.1. Game physics

There is a ball in this game, starting from the sky and falling on the ground and bounce back, which add gravity, velocity, momentum and bounce to the ball bouncing physics (Dr Chris C., 2023).

4.2. Non-player characters and artificial intelligence

There are four non-player characters in this game, walking back and forward

around four different mesh-based objects.

One of the NPCs is designed to holding the machine gun with bullet loaded, the designed function is when the player's bankroll reaches to a very high amount, for example, 100,000,000 dollars, this NPC will chase the player and shoot the player with exploding effect, then the player will die, and the game will over.

4.3. Gameplay elements

4.3.1. Power-ups

There are two kinds of bankroll box can give boost to player's bankroll, one gives 100 dollars and disappears, another one can give as much bankroll as player colliding with the bankroll box.



Figure 11 initial bankroll amount



Figure 12 One time boost bankroll box

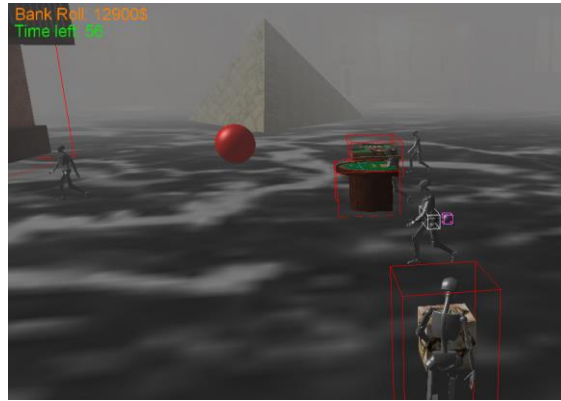


Figure 13 infinite boost bankroll box

4.3.2. Timers

A timer texture to count down the remaining time left in the game that the player needs to reach to the goal amount of bankroll by gambling. In the prototype, when the time is enough for the player, the colour is green. Then, when there is little time left for the player, the colour is red.



Figure 14 colour for enough time left

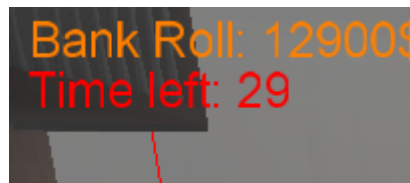


Figure 15 colour for little time left

5. Further improvements

For gameplay, there would be functions that when main character comes to non-player character around Roulette table and Blackjack table, a text will pop up saying “press E to start playing Roulette game” or “press E to start playing Blackjack game”, after player press E, a new window will pop up and player will start playing these two games. In the gambling game, there would be

three buttons player can choose of how much money to start the game with, and the bank roll text will change according to the money of buy in. And there would be a timer that shows how long player has left to start betting the money they want to play, and there would be a cash out button in the window, after player click this button, the money has left will be added to bank roll.

For special effects, when player fires machine gun, there will be a fire effect at the muzzle and when non-player characters are hit by machine gun, there will be a bleeding effect on their body.

6. References

Dr Chris C. (2023) agt-template. Available at: <https://github.com/cs-agt/agt-template-nvdiidpc10086> (Accessed: 6 November 2023).