Mobile Applications Development 3 – Project Developer Diary

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Week1

Received the project Design from the designer. He gave me a brief description on what the project entailed when doing so. I looked through the design doc and during this time and tried to figure out how I would implement the design pattern of the game.

Week2

I start the implementation of the project with the track that the player would playing on. The design of the lane and the pavement, making sure the player could not fall off the edge.

I created a simple sphere as a player and using a script gave the player speed and had the camera follow it. The player can move left and right but is still able to move backwards and forwards. The player does not move automatic like it should from the design.

References

Track Assets:
Road/Scenery -
https://assetstore.unity.com/packages/3d/environments/urban/meshtint-free-city-lite-pack-mega-toon-series-152378

Week3

Fixing of the player controller, whereby, the player is unable to move backwards and can move forwards without an input.

Developing a mechanism for the track where the track does not have to be extremely long for the game. The way in which this was done was by have a list of 9 track objects. Using scripts this list can sort itself into the right order.

A trigger was placed at the end of each track object. When activated it calls the move track method which takes the current first track object in the list removes it and add it to the end of the list. On runtime this means the track moves along with the player meaning it can spawn forever with only these 9 pieces.

Player sphere was replaced with a car prefab. When implementing this the car was spawning in facing the x axis instead of the z axis. This was not fixed by rotating the as moving forward caused the car to sideways. This was fixed by placing the can within an empty game object and placing the box collider on this empty object.

References

Car - https://assetstore.unity.com/packages/3d/vehicles/land/low-poly-cars-101798

Week4

Coins, as the first pickup in the game were implemented. The coins where sets to rotate on the z-axis using Vector3.forward, a rotation speed and using Time.deltaTime.

Once this was successfully done, a script to allow the spawning of these coins at runtime was made. This script allows object to be spawned on any of the 3 lanes present on the road. This is achieved using the modulus of 3.

The objects are spawn randomly between the beginning and the end of the track. There is a track check in places to ensure these objects are only spawned when the track is correction position.

References

Coins - https://assetstore.unity.com/packages/3d/props/gold-coins-1810

Week5

Now that the spawning of objects had been set up, I decided next would bet to spawn obstacles that appear on different lanes, life pickups and powerUps.

I create a GameSession scripts to control how these objects would affect the player. If the player dies the Game is destroyed and reloaded.

A player canvas was adding to the player so that user would be able to tell what these objects where doing. The player Canvas shows the players live, score, distance and current powerup. The GameSesssion oversees setting up the value of these on start up and changing as needing as game is run.

Distance – this is the output of the player position on the z-axis, it is shown as meters.

Coins – are giving a value of 10 and are adding to the score on pickup.

Hearts/Lives – if the player has lost any of their 3 lives this gives the 1 back.

Vehicle Obstacles – take lives away from the player, Car – 1.
(Bus – 2, Truck -3) to be implemented later. Use same assets as player.

PowerUps - loaded but do not have functionality.

On discussion with the designer, I change the look of some of the power ups. The first being the Coin x2 which was change to a diamond instead of another coin we agreed this made it easier for the player to distinguish between them. The second being the Boost as the star went with the design of the other object better.

References

PickUps - https://assetstore.unity.com/packages/3d/props/simple-gems-ultimate-animated-customizable-pack-73764

Shield - https://assetstore.unity.com/packages/3d/props/weapons/shield-61351

Week6

Adding functionality to the powerup – last for 10seconds on pickup.

Shield – player becomes invincible.
Boost – player's speed increases.
Coin x2 – value of coin doubles.

Road Object where added – Archway, Damaged Roads, Ramp and Bridge.

I designed the archway and damaged roads, adding red markings to the damaged road to help indicate to the user they where coming. The designer also thought this to be a good idea as when testing it was very hard to tell they were there before it was too late.

The Bridge is used an indicator for level change.

For these new objects it was necessary to create 2 new was of spawning objects. They work a lot like the previous spawning, however, these spawners only spawn object in fixed x position.

The random spawns between the beginning and end of the track while the second spawns at a set z position between the beginning and end of the track.

References

Road objects - https://assetstore.unity.com/packages/3d/vehicles/land/low-poly-cars-101798

Week7

This week was spent fixing problems with the bridge and ramp objects. They were unable to be spawned.

I also added the implementation of multiple levels, changing the type and frequency that objects would spawn. A trigger places on the bridge is what calls the methods relating to this.

The beginning of menu design was also done. After using the design for the menu that was given, I found it quite hard to read in game. I discussed this with my designer, we agreed on change the background colour to a light grey instead of a black. To keep close to the original look, the buttons change to black once clicked on.

Week8

This week was spent finishing up the menus and adding the functionality. This included allowing easy transition between the menus.

A High Score Menu was adding which can check if the score the player got was higher then the current high score, if so then this score is the new high score. This menu also has the option of resetting the high score back to 0.

A Game Over Menu was added which shows the player their score and gives them the option to restart (still to implement) or reset the game.

The Options Menu shows the player the controls of the game and has an audio slider which can change the volume of the music of the game.

The option for the user to be able to pick from 3 different cars was done. Blue being the slowest, green normal and red the fastest. The player chooses which one before they play.

The Pause Menu freezes the game, gives the user the option functionality and allows the user to quite the game returning to the main menu.

Week9

Scenery and skyboxes were added to the track, these are set to change every time the player reaches a new level.

Restart functionality was implemented where the game reset the player canvas value and the car position but keep the care that the player was using.

References

Skybox - https://assetstore.unity.com/packages/2d/textures-materials/sky/customizable-skybox-174576

Week10

Adding audio to the menus and the gameplay. Adding audio to pickups and obstacles.

Cleaning up the spawning so that they are put into a parent object.