

Board Game in Unity

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Scripts

- TurnManager :

Change the turn and the current player name.

- Nodelist :

A list with all the nodes of the game.

- CheckPlayerNode :

Check if the player while was moving passed an entrance pass through and make the entrance pass through action. Then checks if in the current node the player must pay the other player. If he must pay, then he pays and the turn ends. Finally, it check the name of the player current node and set the State of the game to the corresponding action.

- TurnDisplay :

Displays the current number of turn in the main screen.

- DropDownMenu :

Fill the dropdown with the availables region that a player can build or can buy entrys. Note that in the region case, it fills the exact location, (example region 1 position 2).

- DisplayP1Money-DisplayP2Money :

Displays in the main screen the Money of the player Pi.

- DisplayPlayer1Reg-DisplayPlayer2Reg :

Displays in the main screen the current Region of the player Pi.

- VirtualCamChange :

Changes the 3 cinemachine cameras. The first two are for the players and the third

is for the Dice. The way the cameras change is from the states of the game and the player turn.

- RollDice :

Change the states of the game to roll the normal dice and the build dice. Both of the function in this script are onClick on Buttons.

- Resign :

When The player press this button the state changes to gameOver and he loses the game.

- EndTurnButton :

When this Button is pressed the turn changes and many boolean variables and gameObjects change values to reduce the bugs that may happen in the game.

- BuyButton :

When this Button is pressed, the state of the game change to buyNode.

- Sound :

In this script there are some variables that helps to set up each audio in the list. The songs are added in the inspector.

- AudioManager :

This script manages the Audio that is playing. It can play many audio at the same time.

- RegionDetector :

This script check if the collider of a player enter in a collider of a region, and save the regionName.

- Money :

This script check if the collider of a player enter in a collider of a Money Pass Through. If it happens the player gains some money and a sound starts to play.

- Entrance :

This script check if the collider of a player enter in a collider of a Entrance Pass Through.

- PlayerMove :

In this script is the code that moves and rotates the player to the next node.

- Player :

This script has only the Node index of the Player

- CarManager :

This script sets the new target for the player to move and increase the index of the player node.

- Rules :

This is the script that controls the flow of the game. Here there is an enumeration with states of the game that control which script is running each time. There are also some public static variables that set some conditions.

- InputScript :

This Script is connected with the Enter Button. It gets the input, for how many houses the player wants to build.

- InitVars :

In this script in the awake init all the gameObject that are not decor to visible or invisible. Here also init and some useful variables and arrays. It keeps as public static gameObjects all the gameObjects that changes to invisible and visible during the game.

- GameOverScene :

If the State is GameOver the Scene Changes to the EndGameScene.

- Pay :

This script checks if the state is Pay and computes the cost that the player he has to pay. If after the payment the player has negative amount of money he Loses.

- FreeEntrance :

If the state is free Entrance or EntrancePoint and he chose from the dropdown menu an item, then he can build an entrance where he wants to build it. Otherwise, if he pass by an entry pass through, he can buy an entrance when the same conditions are met.

- FreeBuild :

When the state is free Build , and if he hasnt build already all the houses in the region that he chose from the dropdown, he build one for free!

- Buy :

In this script, checks if the region that the player is now is available for buying. Of courses if none of the players bought it, it is. The other case is if a player bought it, but has not build anything yet.

- Build :

At first checks what region the player chose from the dropdown menu. If it was not null, and he hasnt already build all the houses at this region. He builds as many

houses as he can from the number of houses that he chose. The cost of the houses is already fixed from the build Dice. If after a build he has negative amount of money,he loses.

- DiceScript-BuildDiceScript :

These are the Scripts that are attached to the Dices, normaldice-builddice. These scripts roll the Dice with a random force, to have random results.

- DiceCheckZoneScript :

IF a Dice Enter in The Zone Collider, it Displays The result. If it is RollDice, The player Move or Pay. If it is The buildDice The Player learns if he will build and the final price.

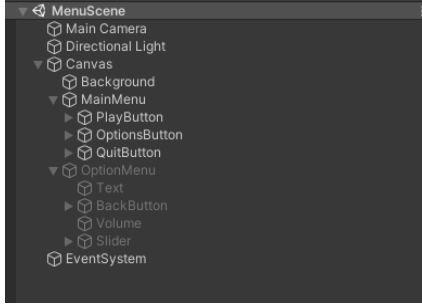
- MainMenu :

The starting MenuScript. Loads the Game or Quits from the Game.

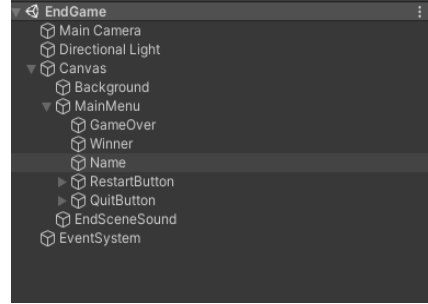
- EndMenu :

The ending MenuScript. restarts the Game or Quits from the Game.

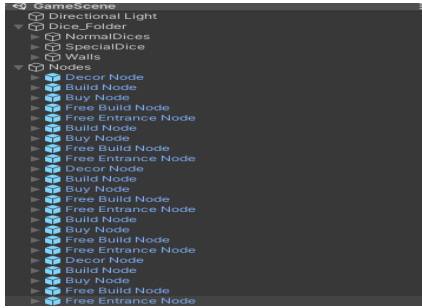
Hierarchy Of the Scenes



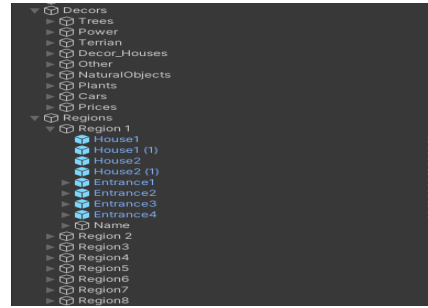
(a) MenuScene Hierarchy



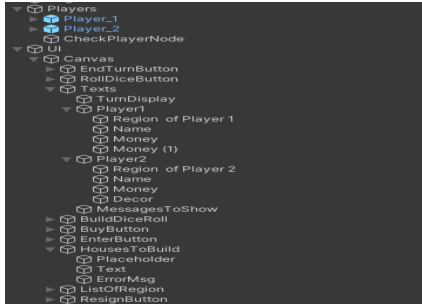
(b) EndMenuScene Hierarchy



(c) Nodes And DiceFolder



(d) Regions And Decors



(e) Players And UI



(f) Camera And GameObjects

Figure 1: Scenes Hierarchy

Bugs in the Project

I tried to fix every exception that may happen, so the game doesnt crash. Some bugs may be to do some abnormal things, show msg and buttons that are not supposed to show, but in the end of the turn, the problems will be solved. Most of the times the bugs happens when the uses dont play normal the game. The main reason that something will bug, is after the Entrance Pass through. Also in the option the volume doesnt work at all.

Project Credits

MountainAsset
PlayersAsset
CashAsset
HammerAsset
PavementAsset
CityPackAsset
Dice6Asset
HouseAsset
ExtraHouseAsset

Project Link

<https://drive.google.com/file/d/1NaHlnTYxScCs0n4cFXAB0xNrMzmtBbyC/view?usp=sharing>