

IM Learning

Instructions:

Create a Blank Project in Unreal Engine 4.27, name it with your full name and implement the following tasks. You can use blueprints, c++ or both to develop. Don't use the Unreal templates. If you find it necessary to add anything that wasn't listed, feel free to implement. Some tasks may be not so detailed, so you can do them the way you find it's better. When we ask you to name anything, you can add any extension or tag to it if you want, there is no problem. And any questions, don't wait for us, google it first! You can easily find all the content needed to develop that project on the web.

When you are finished, upload the project to the Class Drive folder (found in our Google Classroom) with the executable inside a .zip, with your full name. After the project development phase, there will be a presentation to us, in person, on a date to be defined. You will have a maximum of 10 minutes each to show us your project. There will be a PC (windows), tablet, smartphone and a Quest 2 available on this day in case you have generated build for one or more of these platforms.

Unreal project:

- Create a level, name it “StartLevel” and add a PlayerStart to the scene (you can use the default level if you want).
- Create a Character and make it first-person like.
 - Implement the basic movement to the character (walk, jump, crouch and rotate camera with mouse).
 - Implement a double jump to the character movement (the player can jump twice before hitting the ground, like an extra jump in the air).
- Create a GameMode and set it as default.
- Create an actor to be a door (use anything at your choice) and add it in the scene. The character can't pass through it.
 - When the character approaches the door, it must open. When he gets far from it, it must close.
 - Make some kind of trigger in the scene that opens and closes the door when it's activated.
 - Create something that when the character jumps on it, he will be launched. Add it to the scene.
 - Create some kind of teleport (use anything of your choice) and put it twice in your scene. When the character stays on one of them for 2 seconds, he will be moved to the other.
- Create a system where the player can place a cube, a cone, a sphere or any different assets of your choice in-game (during the play). Each one of those objects will have a price. Each time one of those objects is spawned in the scene, the respective price will be decreased from a total of cash that needs to be displayed on screen during the play. If he doesn't have enough cash, he can not put that object in the scene. For example: A player is going to have a total cash of \$500. The cube, the cone and the sphere are going to cost \$10, \$15 and \$20, respectively. Each time a cone is added in the scene, it's cost will be decreased from the total of \$500. When the total is less than the price of the object, it can't be spawned anymore.
- Make some way of changing the color of those objects.
- Create a widget blueprint. Name it “StartMenu”.

- Add a “Start” button. When pressed, the StartLevel will be opened.
 - Add an “Options” button. When pressed, an Options screen will appear.
 - Add an “Exit” button that closes the application when pressed.
- Add the following to the Options screen (all the fields must be identified to the user):
 - An input called “Speed” that receives a number between 300 and 900.
 - An input called “Cash” that receives a number.
 - A Check Box called “Windowed mode”.
 - A button called “Back”. When pressed, return to the StartMenu screen.
- When the “Start” button is pressed, besides opening the StartLevel it will set the character speed and the total of cash to the values specified in “MaxSpeed” and “Cash” fields, respectively. If “Windowed mode” is checked, the game must run in window mode instead of full screen.