



Unity Piscine - Module06

Navmesh, Light, Sound and Camera

Summary: In this document, you will find the Module06 subject for the Unity Piscine.

Version: 1.00

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Chapter I

Preamble

John Lemon, like all small felines, does not like to go to bed at night.

But, one night, when he was out for one of his nightly escapades, despite his excellent eyesight in the dark, he didn't see the root sticking out of the ground and caught his paw in it.

He stumbled and put both paws forward to catch himself! But at that moment, the ground gave way under his feet and poor Neit found himself in an endless fall.

After a while, which seemed like an eternity, Neit finally felt the ground under his feet.

He finds himself completely in the dark, and as he looks around he realises that he is in a cramped place. Panicking, he starts to gesticulate in all directions and the wall in front of him derobates.

He fell to the ground and realized that the place where he was trapped a few seconds earlier was a cupboard.

A dim light, disturbing noises, John did not seem to have fallen into a Wonderland.
In this hostile environment, discretion is the key!

Chapter II

Instructions

- If you have problems installing the tools needed for your project on the 42 computers, you can use a virtual machine. In this case, you will have to :
 - install the virtual machine software on your computer.
 - install the operating system of your choice.
 - install the tools needed for your project.
 - Make sure you have the space on your session to install all of this.
 - You must have everything installed before the evaluation.
- Only this page will serve as reference. Do not trust rumors.
- The exercises have been ordered from easiest to most difficult. Under any circumstance you can submit or take into account an exercise if a previous one has failed.
- Be careful with the access rights of your files.
- You should follow the submit procedure for all your exercises.
- Your exercises will be corrected by your piscine peers.
- You cannot leave any extra file on your repository except the ones explicitly specified on your subject.
- Got a question? Ask your peer on the right. Otherwise, try your peer on the left.
- Everything you need can be found on the `man` or out there on Google.
- Read carefully the exercises: they may contain some features you should implement that are explicitly mentioned on the subject.
- Use your brain!!!

Chapter III

Exercise 00: John Lemon in Nightmareland

	Exercise :
	Exercise 00: John Lemon in Nightmareland
	Turn-in directory : <code>unityModule06</code>
	Required elements : The "Stage1" scenes, script and anything relevant
	Forbidden functions : None

Poor John, he'll have to be discreet !
To start his adventure, you must go to create his character.
You will find him on Models/Character.

John must :

- Have an idle and walk animation.
- Be able to move.

Create the stage !

- Create the room where John arrived from the wardrobe, some other rooms, and corridors where the player must pass unnoticed.
Don't create too many pieces, you need to conserve your time.
- Place doors on certain rooms. Some will open when the player approaches them.
- Customize rooms with scenery elements, make them into bedrooms, bathrooms, dining rooms etc.
- You must have a room whose door can only be opened with 3 keys. In this room there will be a wardrobe similar to the one where john arrives. Player will have to borrow it to finish the stage.

- Add an key in 3 different rooms. The player must find and these keys to open the door where the exit cupboard is located.

your stage may look like this :



Chapter IV

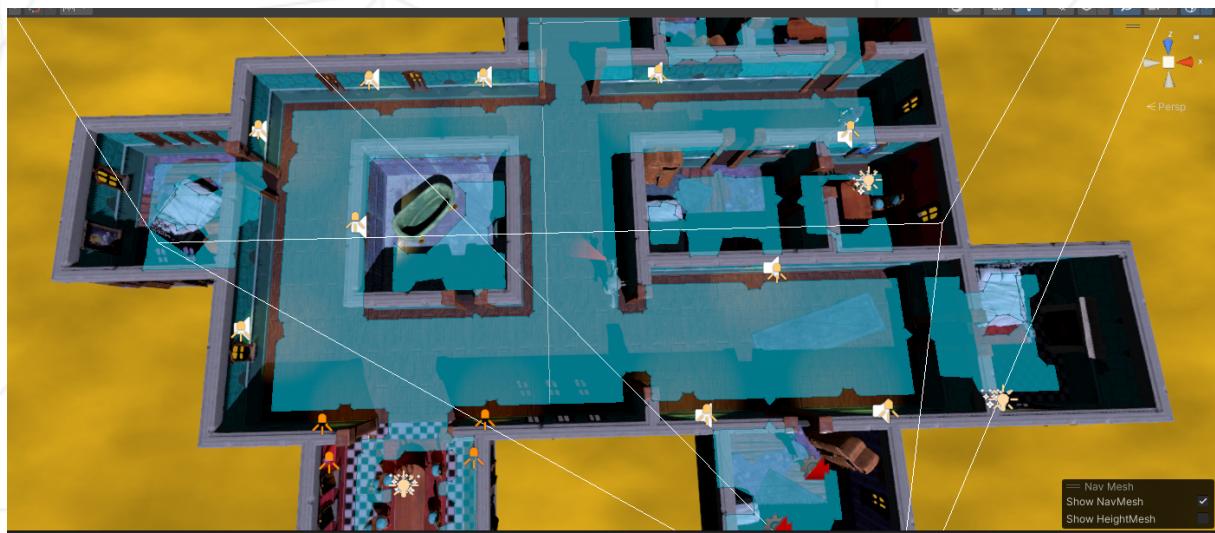
Exercise 01: Finding your way

	Exercise :
	Exercise 01: Finding your way
	Turn-in directory : <code>unityModule06</code>
	Required elements : The "Stage1" scenes, script and anything relevant
	Forbidden functions : None

Now that you have your playground, ou will add your enemies, gargoyles and ghosts. You can find the ghost and gargoyle models in the Models folder. You need to make sure that the ghosts enemies can move in a realistic way.

To start, you need to create a navmesh for the environment in which your enemies will move.

The navmesh of your stage should look like this :



Once you have created your navmesh, you can configure the enemies to use that navmesh to move.

The ghost particularity:

- It have a walk animation.
- It Has a zone which will detect the player if he passes through it.
- Your ghost has to move from one point to another with the NavMesh. Don't forget the Nav Mesh Agent on the player and use the SetDestination methode on your script.

The gargoyle particularity :

- It must have an idle animation.
- The player must not be able to pass through the gargoyle object.
- It has a zone he has a detection zone represented by the red light of his torch, which detects the player if he through it.

When the ghost detect the player :

- The ghost chases the player for a few moments and then returns to its place. If the ghost catches up with the player, the player faints restart the stage.
- You must have at least 4 ghost in your scene.

When the gargoyle detect the player :

- All ghosts are alerted and move towards the player.
- You must have at least 2 gargoyles in your scene.

Chapter V

Exercise 02: Question of viewpoint

	Exercise :
	Exercise 02: Question of viewpoint
	Turn-in directory : <code>unityModule06</code>
	Required elements : The "Stage1" scenes, script and anything relevant
	Forbidden functions : None

Camera, How many times have you complained about games that have a bad camera? Now it's up to you to create a good camera.

You can import the Cinemachine package from your package manager/Packages:Unity Registry, and use it. But you're free to use it or not.

Your camera must have 2 points of view:

- A Third Person Shooter view (TPS).
- A First Person Shooter view (FPS).

To change the view, player must press a key, for example, the key C.

The TPS camera :

- It is placed high behind the player.
- It follows the player.
- Can make the camera face the same direction as the player or not, depending on your preferences.
- Player movement is done by keyboard WASD keys;

The FPS camera:

- It placed at the eyes of the player.
- The player can look around with the mouse and when he presses Z key, he moves in the direction he is looking.



Like the Cinemachine, unity offers you the possibility to use a very powerful Input System that could be used to manage the movements of your character. You can use it or not.

Chapter VI

Exercise 03 Ending game

	Exercise :
	Exercise 03: Ending game
	Turn-in directory : <code>unityModule06</code>
	Required elements : The "Stage1" scenes, script and anything relevant
	Forbidden functions : None

You can Create an simple Ending game.
You have 2 images in the Textures/UI folder.

You need to create 2 fades in/out animations:

- The first, when the player is caught and return at start, with the appropriate image.
- The second, when the player wins the game, with the appropriate image.

Chapter VII

Exercise 04: Light and sound

	Exercise :
	Exercise 04: Light and sound
	Turn-in directory : <code>unityModule06</code>
	Required elements : The "Stage1" scenes, GlobalPostProcess GameObject, and anything relevant
	Forbidden functions : None

Lighting and sounds are important to give the player a sense of atmosphere. Unfortunately for John he arrives in a rather dark and gloomy place.

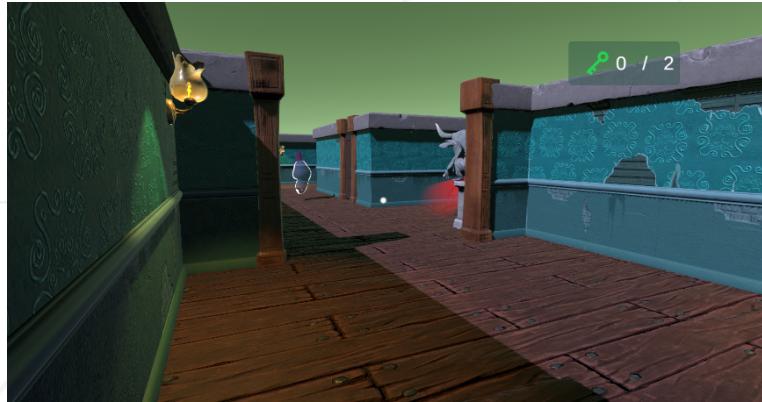
You must have an GlobalPostProcess GameObject on your scene which will contain some of post processing effects.

The Post-processing components will be useful to you.

Change the property of your Directional Light and Change the Lighting Settings will also help you.

Here you can see the difference with and without post processing effects :





For sounds, you may have noticed that some sounds are already integrated, but this is not enough.

- Add Ambient sound.
- Add sound when the player fainted.
- Add sound when player win.
- Add footstep sound for your character.
- Add an ghost sound. You should only hear their noise when you are close to them.

Chapter VIII

Submission and peer-evaluation

Turn in your assignment in your **Git** repository as usual. Only the work inside your repository will be evaluated during the defense. Don't hesitate to double check the names of your folders and files to ensure they are correct.

You should not put all the files of a project on git, otherwise the disk space occupied by the repository will be unnecessarily increased. Here is how to configure Unity and GIT for an optimal use.



- Make sure that Unity saves as many files as possible in text form instead of binary. In Unity, go to Edit >Project Settings > Editor. Under textAsset Serialization, you have to choose the Force Text Mode.
- check that the .gitignore file automatically generated by unity is present.



The evaluation process will happen on the computer of the evaluated group.