Immersive Media Programming – Lab 1: Unity basics

In this lab you set up Unity and practice using it. Not much programming yet!

Doing these tasks require basic understanding of Unity, so make sure you understand the Unity Basics lecture (you can watch the recording again in AjouBB). This is very important especially if you haven't used Unity before.

NOTE: Create all tasks in one Unity project. The project is created in Task 1.

Submission instructions:
- For each task, <u>record a short video</u> that demonstrates all the required features of the task. Name the video according to the task, like Task2.mp4.
  - Place all videos in a separate folder OUTSIDE the project folder.
- Close Unity.
- Make a backup copy of your project folder.
- Remove unnecessary folders from your project folder: Build, Library, Logs, obj.
- Zip the project folder AND the video folder into a single ZIP file.
- Submit the ZIP file via AjouBB.

Deadline: March 15 at 23:59

Task 1: Unity project setup (2p)

<u>Set up your Unity environment</u> (see Unity Basics lecture notes for more info):

- Install Unity Hub: https://unity3d.com/get-unity/download
- Get a free license
- Install Unity Editor version 2020.3.30f1
- Create a new 3D project with name "Lab1-[your-id]" (e.g. Lab1-201912345)
- Adjust the editor view positions according to your preference.

Task 2: Practice using the Unity editor (8p)

- Rename the default scene to "Task2"
- Add a ground to your scene (3D Plane) and make its size appropriate.
- Practice scene navigation by different keyboard + mouse methods
- Add some basic 3D game objects (cubes, spheres etc) onto the scene and modify their transforms (position, rotation, scale) to build an environment.
  - Be creative (e.g. build a house, a wall, a ramp, a car, a plane, etc).
- Create new materials and apply them to the objects.
  - Use both colors and textures. You can download some free texture packs from the <u>Asset Store</u>.
- Choose one of the game objects and save it as a prefab.
  - Then duplicate the prefab by dragging it multiple times onto the screen.
- Find a nice free asset pack / packs (e.g. an environment pack) in the <u>Asset Store</u> and import it.
  - Add at least 10 different assets to make your scene more diverse.
- Find at least three different 3D models from <u>Sketchfab</u> and add them to your scene
  - FBX file type will be the easiest to import
- Move the camera to a bird's eye view angle so that the camera view contains all your game objects.
- Add an Audio Source component to the camera. Then assign a nice background music to the AudioClip property (first you need to drag the audio file into the project).
- (optional) add different <u>light sources</u> and see how they affect the GameObjects and their shadows
  - A short tutorial on different light types in Unity: https://www.youtube.com/watch?v=p13tuFdKwP4

(see next page)

- Create folders under Assets for different types of assets and move your assets into these folders (you can use different names and add more folders as needed):
  - Prefabs
  - Materials
  - Models
  - Sounds

Task 3: A little bit of animations (and a tiny bit of scripting) (4p)

First, create a new scene with name "Task3". Add a ground plane to it (resize as needed).

Repeat these basic tutorial steps on how to download models and animations from Mixamo, and how to use them in Unity.
- IMPORTANT: choose a different model and different animations (at least 3) than in the tutorial!

1. Part 1: https://www.youtube.com/watch?v=-FhvQDqmgmU
2. Part 2: https://www.youtube.com/watch?v=vApG8aYD5aI
3. Part 3: https://www.youtube.com/watch?v=FF6kezDQZ7s

Task 4: Reflection (2p)

Write a short reflection text based on your lab experience (e.g. a text file or a Word file) using the questions below. The positivity or negativity of your answers does not affect scoring.

Please answer to these questions (at least):

- What did you learn? What did you know already?
- What was difficult in the assignment? How did you overcome it?
- What was good about the assignment?
- Do you have any suggestions to improve the assignment? Please tell us!

Save your reflections as Reflections.txt/docx to the root of your project.