**MCSD**

**GPG512 Games Programming**

**DOCUMENT code: FA2**



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| **Fill in the following form with your information.** |

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| **Student Number:** |  |
| **Surname:** |  |
| **Full names:** |  |

Unit Standard(s): N/A

# INSTRUCTIONS:

1. Submit documents on the project information below. The documents must be submitted electronically, uploaded to your ePoE / ColCampus
2. Rename this document to:
   1. GPG512 Surname Name StudentNumber FA2
3. Fill in your details and hand the Rubric document also in to be used as a mark sheet.
4. Hand in a document named:
5. GPG512 Surname Name StudentNumber FA2
6. References must be listed, when applicable.
7. Save all your documents regularly while you are working.
8. After you have completed the assignment below, keep a copy of your work, keep a backup copy and hand your work in.

# Instructions to Learner. Answer ALL questions BRIEF

Digi-TechCorp recently hired you as their new games developer. You are to design and develop a game using techniques you have learnt. The game is called Terra Hawks.

Using a third person controller, the player’s goal is to accumulate as much treasure as possible, within the Outpost. He scores 5 points for every treasure he has picked up. At the end of the game, the total sum of scores he accumulates should be displayed on the screen. To complete the first stage, he needs to accumulate a sum of 20 treasures in all. This has to be completed within 180 seconds of game start, after which he is declared a winner and may then proceed to the next stage of the game. The next stage will be more demanding, as he has to pick up 25 treasures within the same time frame as the first stage.

However, there are obstacles on his way to achieve his goal. The doors to the outpost will not open, until he has accumulated 4 batteries. He will then have sufficient battery power to open the door. That way, he is able to gain access to treasures within the outpost. Also, there are traps within the scene that “kill” battery power, thus reducing the number of batteries accumulated. Use C# to provide interaction within the game. You are to follow the instructions given below.

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|  | Mark | Obtained |
| 1. Set up your game so as to have a forest terrain with a volcano at the center of the terrain. Set up the length and width of the terrain to 1000 each. The terrain must include trees (preferably palm trees) and a stream and must be covered in grass and some sandy areas. Set the base map settings to 10meters.     Fig. 1.1 the Volcano | 5 |  |
| 1. Create sunlight to light up the terrain and ensure it shines consistently with the direction of light it casts. Reposition and rotate the light object to ensure the sun’s position will match the light of the skybox. | 5 |  |
| 1. Using the zip file given to you, locate the sound1.unityPackage file package and locate a simple MP3 sound file, hillside.mp3. Ensure that this sound plays as soon as the player enters the scene and continues to loop till he exits the scene. | 3 |  |
| 1. Add a skybox to the scene and ensure its set to sunset. Ensure you reposition   your light in Q2 to match your skybox. | 5 |  |
| 1. Add a third person controller in the scene and save the scene as Island-“studentNumber”. NB Ensure your scenes are saved in the assets folder. To   keep it neat, you may create a “levels” sub-folder and save it there. | 2 |  |
| 1. Using the package given to you, ensure the “Outpost” model is imported to the scene and adjust settings for its meshes, materials and animations.   a. Ensure it has a scale factor of 1.   1. Create colliders for the Outpost. 2. Ensure all surfaces are set up to render properly in the game. 3. The Outpost FBX file comes with its animations. Add the animations in Unity, name them “dooropen” and “doorshut”. The former to open the door in the Outpost and the latter, to shut the door. | 10 |  |
| 1. Write a programme, using collision detection to trigger the door in the Outpost to open and close. Also use the sound files located in “doorSounds” to add a corresponding sound to either of the events.   Add sound clip to the “Open and Close door” events respectively.The door should open after 3 seconds. The player should be able to adjust this time. | 12 |  |
| |  |  | | --- | --- | | 1. If you haven’t already, locate the package which will allow you the use of battery assets and do the following. | Mark / 30 |  * Use prefabs to generate multiple batteries on the scene. Ensure you apply the appropriate textures to the batteries. Create a rotation effect for the batteries that ensures they rotate. * Using triggers, allow the player to pick up batteries which “disappear” on player walking into the batteries. * Write a function/script that ensures the player will not be able to open the door to the Outpost, until he has accumulated a total of 4 batteries. This ensures the player has sufficient battery power to open the door. * Create and set up traps within the scene using prefabs. Write a function/script to reduce the accumulated battery power of the player when he walks into a trap. Extra marks are given for your creativity here.   Write a script to display the accumulated or depleted batteries on the screen, using GUI Texture. The textures are in the package given to you | 10 |  |
| 1. Use GUI Text to display points accumulated in the game. Points are picked Mark / 15 up with each treasures picked up. You may create a small box for this and place a sufficient number across the screen. | 15 |  |
| 1. Create and add fire across the terrain, with heavy smoke coming off it. Mark / Points may be reduced should the player accidentally walk on the fire. Use firepack.Unitypackage for this.     Fig. 2.1 | 13 |  |
| Total: | 80 |  |