

**STUDENT INDUSTRIAL INTERNSHIP PROGRAMME LOGBOOK**

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**Programme: Information Technology (IT)**

**Place of Training: Murdoch University, Australia**

**Period of Training: 7 months**

**Project Title: Nueromender Project**

**SIP LOGBOOK REPORT**

**LOG BOOK WEEK NO: 1-2**

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| **WEEK NO** | **DATE** | **BRIEF DESCRIPTION OF DAILY ACTIVITIES** |
| **1** | **02/09/2019** | * Phase 2 : integrating modules * Database Implementation |
| **03/09/2019** | * Room listing |
| **04/09/2019** | * Player listing |
| **05/09/2019** | * Integrate module 1 into core technology (front interphase) |
| **06/09/2019** | * Module 3 implementation |
| **2** | **09/09/2019** | * Designing 3D Model of Module 3 |
| **10/09/2019** | * Designing 3D Model of Module 3 |
| **11/09/2019** | * Designing User Interface (UI) for Module 3 |
| **12/09/2019** | * Setup VR Controller Interaction for Module 3 |
| **13/09/2019** | * Setup VR Controller Interaction for Module 3 |

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| Logbook Weekly Evaluation by HOST COMPANY SUPERVISOR | | | | | |
| I**nstruction to Host Company Supervisor**  Please refer to the student’s to assess his/her performance.  Please award the scores based on the range below: | | | | | |
| **Student’s Score** | **Beginning**  **(<2.0)** | **Developing**  **(2.0 to <3.25)** | **Accomplished**  **(Rare)**  **(3.25 to <4.0)** | **Exemplary**  **(Exceptionally Rare)**  **(4.0 to 5.0)** | **Score** |
| Initiative & Creativity | Had little observable drive and did not have new ideas | Some observable drive and some new ideas | Mostly self-starter and sometimes sought new challenges and offered new ideas | Always a self-starter and consistently sought new challenge and offered new creative ideas | **/5** |
| Task Accomplishment & Commitment | Partially accomplished given task despite full supervision | Accomplished given task but with full supervision | Accomplished given task but with some supervision | Accomplished given task with very minimum supervision | **/5** |
| Attendance & Punctuality | Frequently absent and always late | Sometimes absent and sometimes late | Never absent and almost always on time | Never absent and always on time | **/5** |
| Attitude & Self Control | Unable to demonstrate positive attitude and hardly maintained self-control under pressure | Occasionally demonstrated positive attitude and occasionally maintained self-control under pressure | Sometimes demonstrated positive attitude and maintained self-control under pressure | Consistently demonstrated positive attitude and consistently maintained self-control under pressure | **/5** |
| Total Score | | | | | /20 |
| **Comments:** | | | | | |
| **Host Company Supervisor’s Signature & stamp:** | | | | | |
| **Name & Designation:** | | | | | |
| **Date:** | | | | | |

*(make copies if necessary)*

**DETAIL REPORT WEEK NO: 1**

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| **Objective(s) of the activities :**   * **Phase 2 : integrating modules** * **Database Implementation** |
| **Contents :**  For the first week of Student Industrial Project (SIP) in Murdoch University, we as a team continue to develop phase two of our project. The first part, Phase 1, has been done in the Student Industrial Training (SIT). Phase 1 consist of core technology which will be used in Phase 2, integration of modules. In the project, it is mentioned that we should develop 4 modules that will use multiplayers.  Before developing the modules, I tried to implement database in the core technology that will be used to store data of users.    *Figure 3 Login Page*  Figure 1 shows the login page to get data from user and authenticate data. The setup of database was not a problem since I used XAMPP as server and MyPhpAdmin as the database. The challenges come when I wanted to connect to database from other PCs.   * Challenges I was facing along the way were:   + The database runs well in the host PC, but it does not connected when other user tries to login into database from other PC   + It is unsure that the user has connected to the database from other PC or not because error shown in the console tab was “Login Failed” and not “Failed to connect to database”   + Therefore, the database implementation is still in progress and was hold for the time being. |
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**DETAIL REPORT WEEK NO: 1**

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| **Objective(s) of the activities :**   * **Room listing** |
| **Contents :**  Before choosing modules, we added one more scene where user can see list of rooms available and list of players in the room.    *Figure 4 Room Listing*  Figure 2 shows the interface of Room Listing. When user connected to Photon Server, before joining a room, user have to create or join room. User can either create a room name or join a room available listed created by other players. Whenever players enter a room, they can see list of players with different ID. The first player to enter the room is automatically assigned as MasterClient. When MasterClient leave the room, the role will be assigned to second person who enter the room. |
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**DETAIL REPORT WEEK NO: 1**

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| **Objective(s) of the activities :**   * **Player Listing** |
| **Contents :**  As mentioned before, whenever player enters a room, they will see list of players.  The logic sequence of players when entering a room is as explained below (I used two players to test the logic of connection)  PLAYER 1:   * If player 1 create room, player two will get to see list of room available * If player 1 starts the game first, player 2 will not be able to see list of players instead they will be direct to the game when joining the room * If player 2 starts the game first although player 1 created the room, player 1 still can see list of players in the room. Player 1 can still click button play game to enter the game   PLAYER 2:   * If player 2 create room first, player 1 will show list of room available. * When player 2 starts the game first after creating room:   + - The same will automatically load at player 1     - If player 2 starts the game first although player 1 created the room, player 1 still can see list of players in the room. Player 1 can still click button play game to enter the game |
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**DETAIL REPORT WEEK NO: 1**

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| **Objective(s) of the activities :**   * + **Integrate module 1 into core technology (front interphase)** |
| **Contents :**    *Figure 5 Sequence of interface*  The sequence of interface is shown in the figure above. User has to create room first then starts the module. As the project need user to select module before starting, the “select module” interface is proposed to be include after user has created / join a room. The “select module” interface is not included for the time being as the modules is not fully developed. |
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**DETAIL REPORT WEEK NO: 1**

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| **Objective(s) of the activities :**   * **Module 3 implementation** |
| **Contents :**  While developing Module 1 and module 2, we were brief about module 3.  While referring to the other modules, below are the explanation for each Modules developed:  Module 1:   * Basic Multiplayer scene where user in multiplayer mood can see each other. The scene also have some blocks that user can test whether each players can see the other player’s action or not. * This scene only uses vive as device in multiplayer scene.   Module 2:   * This scene uses Oculus Integration as device to get two multiplayer connected. * We uses modules named “Initial Cell” that has been developed by other students and change the setting to allow it to be multiplayer.   Module 3:   * The idea of developing the module is based on IKEA assembles instruction. Given was “IKEA ADILS” assemble instruction. The instruction is to be executed in Virtual Reality worlds where user experience to follow the instruction in using VR device. * Challenges predicted in developing this module are:   + To design a 3D model that suits the equipment like IKEA assembles instruction as we never used a 3D modeling tools / apps before.   + The player physics to control equipment that’s fits the action needed in completing task as given in the manual. The propose solution was to use Realtime Objet Snapping. |
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**DETAIL REPORT WEEK NO:2**

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| **Objective(s) of the activities :**   * **Designing 3D Model of Module 3** |
| **Contents :**  Referring to the idea of Module 3, there are several things that are needed such as 3D model of component to be assembled, Environment and setting up Virtual Reality properties. 3D model was first developed while referring to the 3D model of Ikea Adils Assemble Manual.    *Figure 6 ADILS LEG PLATE 3D Model*  To develop the 3D model I use SketchUp application. The other components of IKEA Adils were developed in Unity using 3D Game Object.    *Figure 7 3D Model from Sketchup*   * Challenges I was facing along the way was:   + The properties in Sketchup application were not familiar because it is first time to use 3D model application to model a component, therefore it took some times to develop the 3D model |
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**DETAIL REPORT WEEK NO: 2**

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| **Objective(s) of the activities :**   * **Designing 3D Model of Module 3** |
| **Contents :**    As the 3D modeling of *Adils Leg Plate* done, the object was export in *.fbx* format and imported in Unity as prefab. As reference, the format to import files to Unity are *.fbx / .dae / .3ds / .dxf / .obj / .skp*. Sketchup provide several formats that allow it to be imported to Unity. However, when the 3D model was imported to Unity, some parts of the object were missing and cannot be used with other component in Unity. Therefore the 3D model needs to be redeveloped. Below are the changes of the 3D model.    *Figure 8 Old 3D Model*    *Figure 9 New 3D Model*  The new 3D model was a simpler model because the important part of the model is the holes that needed to insert screws and Adils component. |
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**DETAIL REPORT WEEK NO: 2**

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| **Objective(s) of the activities :**   * **Designing User Interface (UI) for Module 3** |
| **Contents :**  Next part is to develop the User Interface for Module 3. The User Interface (UI) is used to give instruction to user as they start to assemble the component in Virtual Reality (VR) environment. Before developing the UI, I did some research and sketch up the ideas of the UI.    *Figure 10 Instruction User Interface*  The Instruction of User Interface is simple as user need to read the instruction display and click the button to see the next step. The button needs to be clicked using VR controller. Next is to develop the environment of Module 3. Below are some ideas of the environments created. We chose to use the first idea.    Figure 11 First Environment    Figure 12 Second Environment |
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**DETAIL REPORT WEEK NO: 2**

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| **Objective(s) of the activities :**   * **Setup VR Controller Interaction for Module 3** |
| **Contents :**  After finalizing the environment, we need to setup the VR controller to let the user interact with UI. We imported SteamVR plugin as we are going to develop scene using Virtual Reality environment. In SteamVR, I included SteamVR\_laser\_pointer setup script and attached it to the controller. To allow interaction between user and UI where user need to point to the button and click with pointer from controller, some steps are need to setup:   * First to initialize the laser pointer by drag and drop the script to either left or right controller game object. * To test the laser pointer. To enable the button to be clicked, the UI button must be wrapped with box collider * The pointer laser script handles 3 possible input from VR laser:   + When laser pointer enter a game object   + When laser pointer exit the game object   + When laser pointer click a game object * Challenges I was facing along the way were:   + The canvas of UI at first was setup to follow user and allow user to click button using controller pointer, but the UI cannot be fully seen as it was blocked by other objects in the scene. To overcome the problem, the scene space was change to WorldSpace and let the UI static at one place.   + The controller was able to Raycast the pointer but it cannot click the button although the pointer already pointed to the button space.   + The button was actually clicked because there is a state of button been click during runtime in console tab. The problem was in the arrangement of scripts. |
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**DETAIL REPORT WEEK NO:2**

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| **Objective(s) of the activities :**   * **Setup VR Controller Interaction for Module 3** |
| **Contents :**  The problem of button was fixed by rearrange the script. Before, the script was attached to the controller. Instead, the script is attached to the Camera Rig. The controller now fixed, the pointer can be seen and the button can be clicked using the pointer. While testing the pointer, new problem arises :   * The pointer is not needed at all times because we need the controller to be able to grab components in the scene. Currently there are two pointer attached to the controller, color of pointer and color of pointer when button of controller is clicked. * Challenges I was facing along the way were:   + The default color of pointer attached to VR cannot be removed as it is by default attached to the controller when we include the pointer script to the scene. The alternative way to solve the problem is to remove the script however the button cannot be clicked when the script removed.   + I tried to change the color of pointer to transparent, but the same problem still occurred. Steps to overcome the problem are (steps still in development and not yet apply):     - To remove the pointer script and let the controller touch the button without any pointer     - To find a way to hide the pointer and allow the pointer to be raycast whenever a button on controller is clicked. |
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