



UNIVERSITI
TEKNOLOGI
PETRONAS

STUDENT INDUSTRIAL INTERNSHIP PROGRAMME LOGBOOK

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Programme: Bachelor of Technology in Information Technology

Place of Training: Universiti Teknologi PETRONAS (UTP) / Murdoch University, Australia

Period of Training: 6th May 2019 – 6th December 2019

Project Title: Project Neuromender (A Home Computer-Based Stroke Rehabilitation System).

LOG BOOK**WEEK NO: 11–12**

WEEK NO	DATE	BRIEF DESCRIPTION OF DAILY ACTIVITIES
11	15.07.2019	<ul style="list-style-type: none">• Detect problem with facebook authentication
	16.07.2019	<ul style="list-style-type: none">• Design authentication using google
	17.07.2019	<ul style="list-style-type: none">• Continue google• Set up playfab authentication to host server
	18.07.2019	<ul style="list-style-type: none">• Study how to multiplayer games work• Create multiplayer games
	19.07.2019	<ul style="list-style-type: none">• Presentation to SV• Figuring out the error
12	20.07.2019	<ul style="list-style-type: none">• Figure out how to connect multiplayer scene with multiplayer scene
	21.07.2019	<ul style="list-style-type: none">• Connecting server with other client pc
	22.07.2019	<ul style="list-style-type: none">• Recreate scene for multiplayer
	23.07.2019	<ul style="list-style-type: none">• Student Industrial Training (SIT) presentation with UTP supervisor• Connect multiplayer scene with different client pc
	24.07.2019	<ul style="list-style-type: none">• Update progress to supervisor• Integrate login scene with multiplayers

Logbook Weekly Evaluation by HOST COMPANY SUPERVISOR

Instruction 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: 11

Objective(s) of the activities :

- **Detect error with facebook authentication**

Contents :

Monday (15.07.2019)

1. Connecting our games authentication with facebook is to get the authentication either the user account is valid or not
2. However, when everything has been code, when we press play the program is running but it asked for user token to log in
 - This issue arises because the program is running in unity
 - Some people said it is the code is right, but the program need to build in apk file and try running the application
 - The other problem is some of the tutorial are outdated version, so some of the function are not supported

DETAIL REPORT

WEEK NO: 11

Objective(s) of the activities :

- **Authentication using google**

Contents :

Tuesday (16.07.2019)

1. We also try to get authentication to ensure that the email player used are valid
2. To do that we need to add google authentication, we need to import google sdk
3. However, the issue arise I because when login with google email, we need to have google keystroke but it is not been pop up unlike the tutorial
4. Some people also said it is because the API which make it did not produce

DETAIL REPORT

WEEK NO: 11

Objective(s) of the activities :

- **Connecting PlayFab authentication to database**
- **Find tutorial to connect multiplayer**

Contents :

Wednesday (17.07.2019)

1. All the authentication using Playfab working well however to ensure our data are well secure, we need to connect it to the connect it to our own database
2. Comment from SV
 - The headless server is already exist
 - Make sure to connect the authentication to own database
 - Try to make a multiplayer game which both player can see each other
3. Find on how to connect the multiplayer in a VR environment

DETAIL REPORT

WEEK NO: 11

Objective(s) of the activities :

- **Connect the multilayer sample games to server**
- **Make 2 user to see each other in the VR environment**

Contents :

Thursday (18.07.2019)

1. Study how to connect the multiplayer in a game
2. Connecting 2 player to in unity
 - Import SteamVR sdk in unity
 - Import Photon sdk
 - Enter server ip address and port
 - By using code, connect the program to server
 - However there were an error saying that we are connecting to false serve. It also says that we need to be disconnect before we can connect to the server.
 - Other than that, the server also did not detect either the program connected or not.
 - Next, the program can already running HMD.
 - Player also can do some action in the program such as teleport and grab.

DETAIL REPORT

WEEK NO: 11

Objective(s) of the activities :

- **Figuring out either the program is connected to server or not**
- **Present work to SV**

Contents :

Friday (19.07.2019)

1. Trying to figure out either the program are connected or not the server.
2. The outcome is the server are now connected to true server
3. But the problem is server still cannot detect the client
4. Present all work to SV
 - Standalone server
 - Standalone server which can accept login
 - A sample multiplayer VR app which can see other player in the VR environment
5. Comment from SV
 - There is some code error which need to be fixed to ensure that it can be detect by the server
 - The server is exist
 - Database are already there but, the are some error in code which need to be fixed to make it to taking the data

DETAIL REPORT

WEEK NO: 12

Objective(s) of the activities :

- **Figuring out how to connect multiplayer scene with server**

Contents :

Monday (22.07.2019)

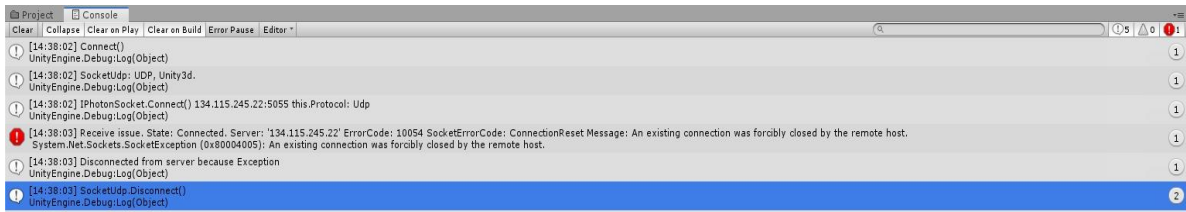
1. Read the documentation on photon server documentation
2. Once we have understood how it works, we tried to implement it to our project
3. Problem
 - Player still cannot join the same room although the same ip address for server are used

Objective(s) of the activities :

- **Detect the problem with the application**

Contents :**Tuesday (23.07.2019)**

1. We try to used the scene before on the different pc to see either it can connect to the server



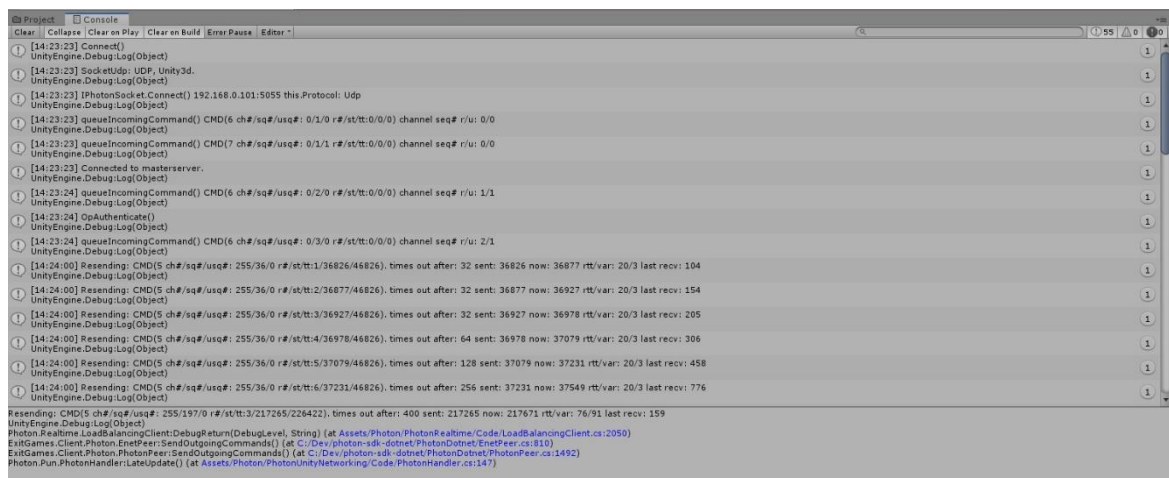
2. The same problem occurs which it still can connect to the server
 - The error said it can be connected because of the exception
 - We tried to exclude the ip address both for server and client on firewall to ensure it can allow the connection
 - However, the result are still the same
3. Other than that, we are also trying to create room by using photon cloud instead of photon server.
4. Problem
 - We are using load scene function, however the result is not consistent
 - Sometimes the scene can be load, sometimes cannot

Objective(s) of the activities :

- **Recreate application**
- **Connect to server**

Contents :**Wednesday (24.07.2019)**

1. Scene has been recreated to ensure that it can work well for multiplayer scene.
2. Since all the documentation has been read and search, we get an idea how it will work and how to set up it.
3. This time, we more careful to read and search about the recent post either on YouTube or discussion forum because sometimes the answer to our problem are not applicable to use since the version has been upgraded
4. Result
 - Can connect to server
 - Able to create the new room
 - Able to join room



```
Project | Console
Clear | Collapse | Clear on Play | Clear on Build | Error Pause | Editor
[14:23:23] Connect()
UnityEngine.Debug.Log(Object)
[14:23:23] SocketUdp: UDP, Unity3d.
UnityEngine.Debug.Log(Object)
[14:23:23] [PhotonSocket.Connect()] 192.168.0.101:5055 this Protocol: Udp
UnityEngine.Debug.Log(Object)
[14:23:23] queueIncomingCommand() CMD(6 ch#sq#usq#: 0/1/0 r#st/tt:0/0/0) channel seq# r/ui: 0/0
UnityEngine.Debug.Log(Object)
[14:23:23] queueIncomingCommand() CMD(7 ch#sq#usq#: 0/1/1 r#st/tt:0/0/0) channel seq# r/ui: 0/0
UnityEngine.Debug.Log(Object)
[14:23:23] Connected to masterserver.
UnityEngine.Debug.Log(Object)
[14:23:24] queueIncomingCommand() CMD(6 ch#sq#usq#: 0/2/0 r#st/tt:0/0/0) channel seq# r/ui: 1/1
UnityEngine.Debug.Log(Object)
[14:23:24] OpAuthenticate()
UnityEngine.Debug.Log(Object)
[14:23:24] queueIncomingCommand() CMD(6 ch#sq#usq#: 0/3/0 r#st/tt:0/0/0) channel seq# r/ui: 2/1
UnityEngine.Debug.Log(Object)
[14:24:00] Resending: CMD(5 ch#sq#usq#: 255/36/0 r#st/tt:1/36826/46826), times out after: 32 sent: 36826 now: 36877 rtt/var: 20/3 last recv: 104
UnityEngine.Debug.Log(Object)
[14:24:00] Resending: CMD(5 ch#sq#usq#: 255/36/0 r#st/tt:2/36877/46826), times out after: 32 sent: 36877 now: 36927 rtt/var: 20/3 last recv: 154
UnityEngine.Debug.Log(Object)
[14:24:00] Resending: CMD(5 ch#sq#usq#: 255/36/0 r#st/tt:3/36927/46826), times out after: 32 sent: 36927 now: 36978 rtt/var: 20/3 last recv: 205
UnityEngine.Debug.Log(Object)
[14:24:00] Resending: CMD(5 ch#sq#usq#: 255/36/0 r#st/tt:4/36978/46826), times out after: 64 sent: 36978 now: 37079 rtt/var: 20/3 last recv: 306
UnityEngine.Debug.Log(Object)
[14:24:00] Resending: CMD(5 ch#sq#usq#: 255/36/0 r#st/tt:5/37079/46826), times out after: 128 sent: 37079 now: 37231 rtt/var: 20/3 last recv: 458
UnityEngine.Debug.Log(Object)
[14:24:00] Resending: CMD(5 ch#sq#usq#: 255/36/0 r#st/tt:6/37231/46826), times out after: 256 sent: 37231 now: 37549 rtt/var: 20/3 last recv: 776
UnityEngine.Debug.Log(Object)
Resending: CMD(5 ch#sq#usq#: 255/197/0 r#st/tt:3/217265/226422), times out after: 400 sent: 217265 now: 217671 rtt/var: 76/91 last recv: 159
UnityEngine.Debug.Log(Object)
Photon.Realtime.LoadBalancingClient:DebugReturn(DebugLevel, String) [at Assets/Photon/PhotonRealtime/Code/LoadBalancingClient.cs:2050]
ExitGames.Client.Photon.EnetPeer:SendOutgoingCommands() [at C:/Dev/Photon-sdk-dotnet/PhotonDotnet/EnetPeer.cs:810]
ExitGames.Client.Photon.PhotonPeer:SendOutgoingCommands() [at C:/Dev/Photon-sdk-dotnet/PhotonDotnet/PhotonPeer.cs:1492]
Photon.Pun.PhotonHandlerLateUpdate() [at Assets/Photon/PhotonUnityNetworking/Code/PhotonHandler.cs:147]
```

DETAIL REPORT

WEEK NO: 12

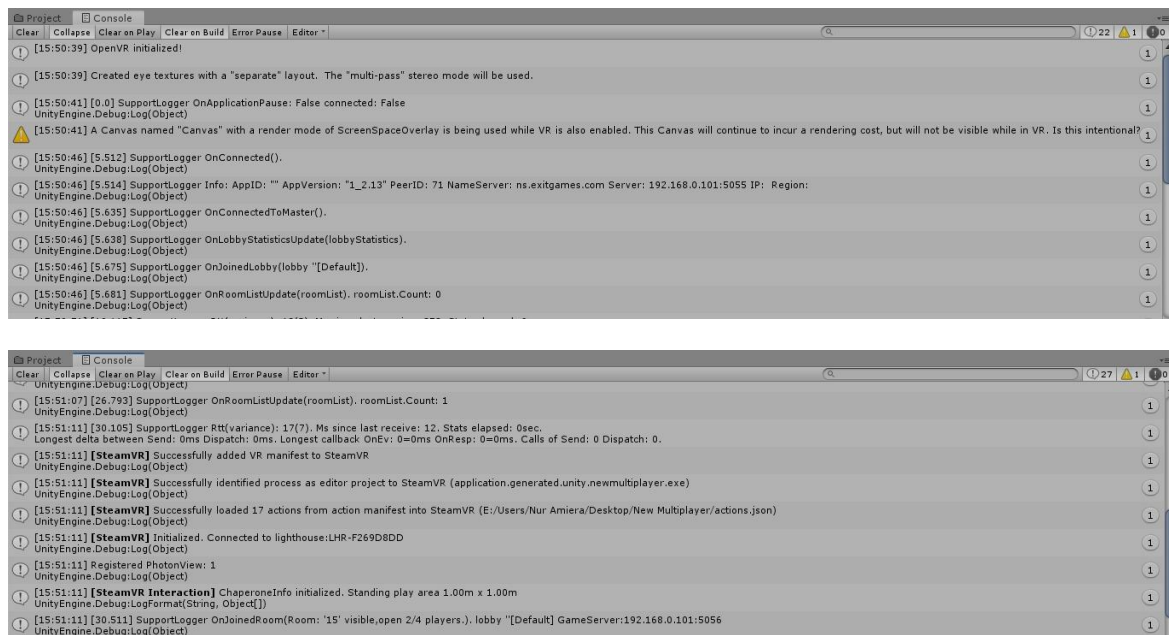
Objective(s) of the activities :

- **SIT presentation**
- **Connect multiplayer scene with different pc**

Contents :

Thursday (25.07.2019)

1. Held a skype presentation for SIP Presentation with UTP supervisor, Dr Dayang
 - Update about the progress work here
 - Explain her about all the equipment used
 - Work culture, experience and skills gain
2. Since the new multiplayer scene has been created and it has work well, we tried to use 2 pc and connect both to server.
3. Result
 - Both can create and join room
 - All the update from both pc are update such as list of room, number of player, player in and out
4. Problem
 - Scene works well for both pc but the open log on server did not detect connection by both pc
 - Both pc can create and enter the same room but still cannot see each other



```
Project | Console
Clear | Collapse | Clear on Play | Clear on Build | Error Pause | Editor
[15:50:39] OpenVR initialized!
[15:50:39] Created eye textures with a "separate" layout. The "multi-pass" stereo mode will be used.
[15:50:41] [0.0] SupportLogger OnApplicationPause: False connected: False
UnityEngine.Debug:Log(Object)
[15:50:41] A Canvas named "Canvas" with a render mode of ScreenSpaceOverlay is being used while VR is also enabled. This Canvas will continue to incur a rendering cost, but will not be visible while in VR. Is this intentional?
[15:50:46] [5.512] SupportLogger OnConnected().
UnityEngine.Debug:Log(Object)
[15:50:46] [5.514] SupportLogger Info: AppID: "" AppVersion: "1_2_13" PeerID: 71 NameServer: ns.exitgames.com Server: 192.168.0.101:5055 IP: Region:
UnityEngine.Debug:Log(Object)
[15:50:46] [5.635] SupportLogger OnConnectedToMaster().
UnityEngine.Debug:Log(Object)
[15:50:46] [5.638] SupportLogger OnLobbyStatisticsUpdate(lobbyStatistics).
UnityEngine.Debug:Log(Object)
[15:50:46] [5.675] SupportLogger OnJoinedLobby(lobby "[Default]").
UnityEngine.Debug:Log(Object)
[15:50:46] [5.681] SupportLogger OnRoomListUpdate(roomList). roomList.Count: 0
UnityEngine.Debug:Log(Object)

Project | Console
Clear | Collapse | Clear on Play | Clear on Build | Error Pause | Editor
UnityEngine.Debug:Log(Object)
[15:51:07] [26.793] SupportLogger OnRoomListUpdate(roomList). roomList.Count: 1
UnityEngine.Debug:Log(Object)
[15:51:11] [30.105] SupportLogger Rtt(variance): 17(7). Ms since last receive: 12. Stats elapsed: 0sec. Longest delta between Send: 0ms Dispatch: 0ms. Longest callback OnEv: 0=0ms OnResp: 0=0ms. Calls of Send: 0 Dispatch: 0.
[15:51:11] [SteamVR] Successfully added VR manifest to SteamVR
UnityEngine.Debug:Log(Object)
[15:51:11] [SteamVR] Successfully identified process as editor project to SteamVR (application.generated.unity.newmultiplayer.exe)
UnityEngine.Debug:Log(Object)
[15:51:11] [SteamVR] Successfully loaded 17 actions from action manifest into SteamVR (E:/Users/Nur Amiera/Desktop/New Multiplayer/actions.json)
UnityEngine.Debug:Log(Object)
[15:51:11] [SteamVR] Initialized. Connected to lighthouse:LHR-F269D8DD
UnityEngine.Debug:Log(Object)
[15:51:11] Registered PhotonView: 1
UnityEngine.Debug:Log(Object)
[15:51:11] [SteamVR Interaction] ChaperoneInfo initialized. Standing play area 1.00m x 1.00m
UnityEngine.Debug:LogFormat(String, Object[])
[15:51:11] [30.511] SupportLogger OnJoinedRoom(Room: "15" visible,open 2/4 players.). lobby "[Default]" GameServer:192.168.0.101:5056
UnityEngine.Debug:Log(Object)
```



DETAIL REPORT

WEEK NO: 12

Objective(s) of the activities :

- **Update progress to both supervisor**
- **Integrate Login function with Create room function**

Contents :

Friday (26.07.2019)

1. Update progress to supervisor
 - a. Server
 - i. Connection database to photon server has been establish
 - ii. Scene for log in into the database has some error in build mode as certain file are missing
 - b. Multiplayer scene
 - i. Player still cannot see each other even though 3D object has been attached to VR camera
 - ii. It needs to connect to the server so that the data for player movement can be updated to all client
2. Integrate both database scene and multiplayer scene
 - a. However, there is a problem which the database can't connect to the server, but it is solve by updating the database importing I18N.dll and I18n.West.dll
1. Figuring out either the other pc is connected to master server or not since the player can't connect to each other.

LOG BOOK**WEEK NO: 13–14**

WEEK NO	DATE	BRIEF DESCRIPTION OF DAILY ACTIVITIES
13	29.07.2019	<ul style="list-style-type: none">• Connecting integrate scene with database from other pc
	30.07.2019	<ul style="list-style-type: none">• Make client in other pc connect with multiplayer mode• To make player see each other
	31.07.2019	<ul style="list-style-type: none">• Make client connect and see each other in multiplayer mode
	01.08.2019	<ul style="list-style-type: none">• Make client on other pc see each other in one room
	02.08.2019	<ul style="list-style-type: none">• Fixed the position of avatar when entering room
14	05.08.2019	<ul style="list-style-type: none">• Fixed the avatar position• Adding controller to avatar
	06.08.2019	<ul style="list-style-type: none">• Briefing for new task• Install android studio
	07.08.2019	<ul style="list-style-type: none">• Setup oculus device• Install ADB
	08.08.2019	<ul style="list-style-type: none">• Turn on developer mode on oculus• Transfer cell application into oculus
	09.08.2019	<ul style="list-style-type: none">• Make sure two controller appear in the scene

Logbook Weekly Evaluation by HOST COMPANY SUPERVISOR

Instruction to Host Company Supervisor

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Total Score					/20
Comments:					
Host Company Supervisor's Signature & stamp:					
Name & Designation:					
Date:					

(make copies if necessary)

Objective(s) of the activities :

- **Connecting database from others pc**

Contents :**Monday (29.07.2019)**

1. Scene which has been integrate has been transfer to other pc to test about the consistency in validating data
2. However, we cannot execute the project as it keeps telling us error
 - i. The database cannot be connected to database pc at server
 - ii. Connection to database cannot be establish from client pc but able to run on host computer
 - iii. Even privilege has been given to user, it still did not work. There are 2 option to connect to database
 - a. Client pc need to install database, but drawback is data is not secure anymore
 - b. Upload database in online hosted server and use PHP code to allow access

DETAIL REPORT

WEEK NO: 13

Objective(s) of the activities :

- **Make client in other pc connect to multiplayer mode**
- **Make other player see each other in other room**

Contents :

Tuesday (30.07.2019)

1. Fixing the scene which has been develop before
2. Read on how to instantiate other player in client pc
 - i. Local and remote player
3. However, the same problem arise which is player still unable to see each other
4. The reason for this problem is because the camera is not attached to a game object

Objective(s) of the activities :

- **Make client in other pc see each other in multiplayer mode**

Contents :**Wednesday (31.07.2019)**

1. Photon did prepare a tutorial in developing a multiplayer game however not in VR environment. However, we can still implement the ways for our project.
2. To develop a VR scene games, there are some things that we need to know
 - i. Make sure the application version are same for all the player
 - ii. Make sure player has different id because player with the same user id cannot entered the same room
 - iii. Asynchronous matchmaking, webhook, etc. are code with proper configuration
3. To ensure that player entered with different id, I tried to used playfab in a meant time while database can be connect. However, the problem is photon server on premise are not support by playfab
4. Scene was successfully developed and run in another pc
 - i. Player can be spawn successfully
 - ii. Player has entered the same room
5. Problem arise are,
 - i. Scene are not in VR setting
 - ii. Player can see each other but not by using HMD

Objective(s) of the activities :

- **Make player see each other in one room**

Contents :**Thursday (01.08.2019)**

1. To make sure player see each in one room, we need to update player position to server then it needs to be sent back to the user
2. The scene was run without connecting it to the HMD. When the player entered the room, it will be spawn.
3. Then, we change the camera view into camera rig which it can support HMD. The camera was not attached to the avatar and when we run the scene the player seems to fall down.
4. The challenge is,
 - i. When player entered the room, it was clone into double for the player who start the games. While, the other player can only see 2 avatars has been spawn. The view is different from all player.
 - ii. Other than that, the player position is detached from the camera as the player has gravity and fall once spawn.
 - iii. When player entered the room, both players can see each other but the position is a bit mess up

DETAIL REPORT

WEEK NO: 13

Objective(s) of the activities :

- **Fixed the position of avatar when clients enter a room**

Contents :

Friday (02.08.2019)

1. Avatar will be spawn twice which makes we have three avatars in a room
2. Avatar spawned still have a camera detached which cause the avatar fall from camera
3. Finally, the character is fixed, and application can be run successfully
4. The result is user can entered the same room and see each other along with its position, camera also be attached in avatars

DETAIL REPORT

WEEK NO: 14

Objective(s) of the activities :

- **Fixed the avatar position**
- **Adding controller to avatar**

Contents :

Monday (05.08.2019)

1. Fixing the avatar position once they entered the room
2. Adding controller to the avatar which has been provided by steamVR.
3. Problem,
 - i. One of the client pc has problem with unity which is it always pause when we run the application
 - ii. This problem has cause the player will be spawn several times

DETAIL REPORT

WEEK NO: 14

Objective(s) of the activities :

- **Briefing for new task**
- **Trying Oculus Go and Oculus Quest**
- **Install android studio**

Contents :

Tuesday (06.08.2019)

1. We had a briefing with supervisor to delegate our new task
 - i. A pair will work with multiplayer
 - Create module which work with Photon server
 - ii. Work with haptic pen
 - Make a project as a training module for nurse to inject patient
2. Task that we need to do is make the cell biology VR games work in Oculus Quest since now it only running in Oculus Go.
3. Learn on how to use both Oculus and feel the different between Oculus Go and Oculus Quest
4. Explore the cell biology VR games in Oculus to understand more about what the games is about
5. All of us need to install android studio since oculus need to run in android version only

DETAIL REPORT

WEEK NO: 14

Objective(s) of the activities :

- **Setup Oculus device**

Contents :

Wednesday (07.08.2019)

1. To use oculus as a developer, we need to download oculus application on mobile. Then, we need to turn on developer mode on the oculus
2. Problem,
 - i. When we tried to pair the oculus with mobile app, oculus should display a 5 digit code but it did not shown
3. We continued to follow the guideline provided which we need to download ADB application
4. Problem
 - i. The latest version of the ADB cannot be supported, so the solution is we downgrade the version and it work well.
5. We had download the side quest into the pc which it is use to transfer the apk application from pc to oculus. However, the side quest still cannot the application since the oculus did not in the developer mode yet.

Objective(s) of the activities :

- **Turn on developer mode**
- **Transfer cell application into oculus**

Contents :**Thursday (08.08.2019)**

1. To turn on the developer mode for oculus we have tried several ways to solve it,
 - i. Turn on and off the oculus quest
 - ii. 2. Install and uninstall the oculus mobile app
 - iii. 3. Log in and log out the oculus mobile app
 - iv. 4. Factory reset the oculus quest
2. The solution for this problem is,
 - i. The oculus needs to be reset from the headset itself
 - ii. We must use same internet connection when connecting oculus
3. Then, we transfer the cell application into oculus quest by using side quest. Once developer mode on oculus has been turn on, side quest can detect that oculus has been connected to the pc. Cell application need to be upload into the oculus
4. To view the application on oculus, we need to go to Library >> Unknown Source >> Application name
5. Cell application has been transfer into oculus successfully, however there are still one controller appear in the game since the application are from oculus go

DETAIL REPORT

WEEK NO: 14

Objective(s) of the activities :

- **Make another controller appear in games**

Contents :

Friday (09.08.2019)

1. To ensure that there will be two controller in the games, there are some changes need to do in the games
2. However, the controller did not appear as double
3. We tried to do the tutorial given by our supervision to understand the code, however it is still the failure.
4. Other than that, we also tried
 - i. Read the code to understand how it works
 - ii. Change the OVRControllerHelper in controller section
 - iii. Change the controller
5. However, the result that we have received are still a failure