NGEE ANN
SCHOOL OF INFOCOMM TECHNOLOGY

ITD & DDA Diploma in Immersive Media Year 2 (2020/21) Semester 2.2	Version 1 Week 6 - 9
Assignment Project 2 (20%) Virtual Reality Project	

OVERVIEW

Requirement: To conceptualise, propose, create and develop an educational Immersive Experience using Virtual Reality (VR).

Goal: To utilize extended reality platforms to create an immersive application that provides an educational and interactive experience for users. The main consideration is on how to create an immersive and interactive experience that can be enhanced with the use of a connected database and web front-end.

AIM

Form a team of 4-6 within your class.
Check your groupings here:
Assignment 2 Grouping

This is a studio-based Assignment involving **ITD & DDA**.
You are required to fulfil the following core requirements:

Module	ITD	DDA
Requirement	**VR Application** Create a VR app on Unity based on your proposed concept. The application should have a GUI for the menu and tutorial checkpoints on how to use the application. All the features in your app must work well enough for demo purposes. Do consider usage of audio and visual cues for the user experience.	**Full Stack Dev** Integrate Firebase services with VR application and create a web based front-end system that interacts with Firebase services All features should interact with Firebase DB for real-time updates. Web data must be synchronized with the VR application.

Your Own Big Idea

Within your team, conceptualize, prototype and develop your case scenario with the following requirements.

GUIDELINES

VR App Prototype (ITD)

Your end product will be assessed based on the following criteria:

1. Technical production, smoothness of flow, thorough testing to ensure no bugs
2. Design and Usage of device, virtual elements
3. Visual, textual and audio cues used. Feedback mechanism.
4. Engagement value of prototype

You may want to ask yourself the following questions as you go along:

- Consideration for physical space, time usage of device? What's the optimal time for usage on the device?
- Practical design considerations – Is the environment too small for this? Is the average runtime for my application too long for this form of consumption? (e.g. spending too long on a VR headset can cause headache/nausea)
- Interactivity of application, am I using suitable typography, menu design, visual hints on using the VR app?
- Usage of materials, tracking
- Balance of 2D and 3D elements
- Think about fulfilment of task. What are you trying to get your users to accomplish?
- Visual and audio cues/indicators placing and timing
- Load & waiting time. Visual and textual hints and guides?
- Have I tested enough? User physical height? Is it at only certain angles my prototype works?
- How VR is used to enhance the experience?
- If there's audio, do you need to cue users to plug in headphones?
- Device limitations
- You may consider using APIs to enhance the experience and real time simulation

Full Stack Dev (DDA)

Your end product will be assessed based on the following criteria:

1. Technical production, smoothness of flow, thorough testing to ensure no bugs
2. Design and Usage of database, usefulness of web dashboard and front-end
3. Engagement value and integration of Firebase with project

You may want to ask yourself the following questions as you go along:

- What data structure should you adopt
- What kind of content to display and interact on the dashboard
- Useful administrative features for ease of real-time updates?
- What kind of data to be stored in game, when is the data being stored?
- Have I tested enough? Web site testing? Back end data checks?
- Completeness of project
- User experience and flow of VR & web

GRADING RUBRICS

ITD	DDA
▪ Technical (30%) ▪ Interactivity (20%) ▪ Collaboration (10%) ▪ Game Juice (10%) ▪ UI/UX (10%) ▪ Peer + Individual Work, VIVA & Video (20%)	▪ Technical & Integration(40%) ▪ Data Structure, Authentication (20%) ▪ User Experience & Interactivity (20%) ▪ Peer + Individual Work, VIVA & Video (20%)

DELIVERABLES

For ITD - VR App Prototype

1. **(Shared with DDA)** Unity Project that includes all asset files (e.g scenes, scripts, materials, textures, packages, models, videos, etc)
   - Ensure all files are organised and have proper file names
2. **1 video demo compilation** of the whole VR experience
   - Showcase VR in action
3. **1 set of Read Me & walkthrough**
   - Readme should include detailed instructions (key controls, “game cheats/hacks”, answer key, etc) on how to use and run your application.
   - Indicate the platforms/hardware required to run your application
   - Indicate the limitations or bugs in the application
   - Indicate references and credits to the models/textures/materials used
   - If there are any games/applications that require solving, please write out your solutions.
4. **(Shared w/ ITD) VIVA presentation pitch**
   - Pitch idea of project
   - Demo ITD & DDA in action

ITD Submission		
Item(s)	**Naming Convention**	**Submission Channel**
1	**ITD_Assg2_ProjectName.zip**	Submit via Google Classroom *(Only the team leader need to submit, include team members in comment)*
*The **zip file** should contain the following **4 deliverables:***		
Item(s)	**Naming Convention**	**Description**
1	**Assg2_ProjectName_Unity_Project.zip**	The Unity project folder holding all the assets. ***(Shared with ITD/DDA)***
2	ITD_Assg2_ProjectName_Video.**mp4**	The video demo of the application.
3	ITD_Assg2_ProjectName_Readme.**pdf**	The readme & walkthrough of the application
4	**Assg2_ProjectName_VIVA.zip**	Video recording, slide deck, any additional marketing materials ***(Shared with ITD/DDA)***

For DDA - Full Stack Dev

1. **(Shared w/ ITD) Unity Project that includes all asset files** (e.g scenes, scripts, materials, textures, packages, models, videos, etc)
   - Ensure all files are organised and have proper file names
2. **Web Project files**
   - Proper file management and appropriately named files
   - Firebase config is properly setup
3. **Database Export**
   - Include all need sample data information
4. **1 video demo compilation** of DDA
   - Demo video + voice recording to showcase VR and Web able to authenticate properly, game play and dynamic data from Firebase is being transacted
5. **Readme**
   The readme is to contain all documentation and research done.
   - What content you are displaying
   - What is the application catering for
   - Documented Wireframes/game flow
   - State & Attribute all external assets/libraries used
   - State original artwork/assets done
6. **(Shared w/ ITD) VIVA presentation pitch**
   - Pitch idea of project
   - Demo ITD & DDA in action

DDA Submission		
Item(s)	**Naming Convention**	**Submission Channel**
1	DDA_Assg2_ProjectName.zip	Submit via Google Classroom *(Only the team leader need to submit, include team members in comment)*
*The **zip file** should contain the following **6 deliverables:***		
Item(s)	**Naming Convention**	**Description**
1	**Assg2_ProjectName_Unity_Project.zip**	The Unity project folder holding all the assets. ***(Shared with ITD/DDA)***
2	DDA_Assg2_ProjectName_Web.**zip**	Zip of web application
3	DDA_Assg2_ProjectName_Database.**json**	Database export with sample data
4	DDA_Assg2_ProjectName_Demo.**mp4**	Video recording, slide deck
5	DDA_Assg2_ProjectName_Readme.**pdf**	Detailed readme of DDA content
6	**Assg2_ProjectName_VIVA.zip**	Video recording, slide deck, any additional marketing materials ***(Shared with ITD/DDA)***

SUBMISSION CHECKPOINTS & TIMELINE

Please note that there are milestone **submissions and timeline to follow**

Week	How?	What?
6	**F2F**	Forming of groups + Taking headsets
7	HBL	Pitching of idea
8	**F2F**	Progress Check/Consultation
9	HBL	Consultation
10	**SUBMISSION**	

DUE DATE

Week 10

Sunday, 26th December 2021, 2359hrs

LATE SUBMISSION

Late submission will be penalised (10% of the marks for each day late after 12 noon). Submission will not be accepted after 5 days (including weekends and public holidays) from the date of submission.

PLAGIARISM AND COPYRIGHT ISSUES

Plagiarism means, “copying any part of a source, and then submitting it, claiming that it is your own work.”

Please ensure that all the works submitted by you are not copied from other sources. Any attempt to plagiarize will be dealt with severely, and it may result in your failing the module.

If you have made any references to certain materials, make sure you cite the sources by acknowledging and providing the information necessary to find the source (e.g. Title and author of book, Internet links, etc)