**Script of VR project**

Hi, This is Emily. Today I would like to introduce my VR project: Lunar Exploration.

First, let's consider the setting of environments. The local setting is in an empty classroom. There are a bunch of students who are interested in lunar exploration as an astronaut but can't realize their dream due to practical reasons. So they chose to experience it through VR. They can take turns entering the classroom to engage with the experience. Each session lasts up to one minute and is limited to one participant at a time. The television and table in the classroom serve as the bridge between virtual reality and the local site. Participants can see whole procedure of the lunar exploration on the television. Imaging themselves as astronauts for lunar exploration, they can interact with robot rover, which can only operate for one minute before needing to recharge due to battery limitation. The television also displays an overview map showing the rover's location on the moon. Meanwhile, the table represents the control platform in virtual reality.

In terms of the moon setting, I choose it due to two reasons. The primary reason is that it is innovative for participants to explore lunar environment, especially for astronomy enthusiasts. It can cultivate the interests of people towards space exploration through this VR experience. Another reason may lie in the fact that it is instrumental in astronomical studies and serves as a steppingstone for further solar system exploration. (During lunar exploration, rovers can provide extended reach, advanced instrumentation, and longer mission duration. Unlike stationary landers, rovers can traverse diverse terrains to conduct scientific experiments and gather data from a wider variety of locations. Besides, the rover is equipped to conduct geological and atmospheric measurements that have been crucial in understanding the lunar environment.) Therefore, I choose rover as the main tool for lunar exploration in my project.

Then we can focus on ideation cards. My VR project mainly revolves around ten ideation

cards. The relevant opportunities include core concepts, exploration, collecting, time pressure, standing, virtual reality, controllers, and new card (remote control). For starters, the game can be summarized in one sentence: As an astronaut, can you collect all the asteroid samples and return to the charging station before rover battery runs out? As is shown in the picture, the exploration means that players slowly uncover and examine the mysterious game area. The player can observe the moon base and lunar environment with eyes while remotely control the robotic rover. In our moon base, there are satellite, capsule, habitats, oxygen tanks, water tanks, solar panels, oxygen tanks and robot rover. They can also enjoy the view of twinkling sky and earth. When it comes to collecting card, the player can collect asteroid samples with the help of robot rover. The number of collected asteroid samples is shown on the screen in real time. The time pressure card is realized by the battery limitation in robot rover. It is also displayed on the screen in real time. In next card, I choose standing because participants must stand up for lunar exploration. In a real lunar expedition, all the astronauts finished their tasks standing up. The controllers card is carried out when participants use the controllers to remotely control the robot rover. It ensures the fun of game experience. Also, Virtual reality can give the most realistic and immersive experience to players on the moon.

The question for my VR project is attention. They may forget collecting asteroid samples and busy enjoy the view of lunar environment. The main challenge is battery life. It is based on time and keep the game limited to one minute.

Afterwards, we can see the prototype of the game in the video.

Subsequently, here is the testing part of prototype. Most of the participants describe the experience as interesting and thrilling. They like the lunar environment.

Finally, my reflection is mainly focus on three key questions. To address the first question,

vision, touch, temperature, and sound senses are engaged to enhance the experience. We perceive robot rover from our binocular vision and observe moon base from peripheral vision. The testers can touch the real desk, which acts as the terminal platform in my VR project. the room's temperature is lowered to simulate the moon's conditions. Regarding the second question, we highlight the three characteristics (lunar surface, touch, low temperature, and outer space sound) to improve immersion experience in the harsh lunar environment. Moving on to the third question, we will display the picture and instructions of asteroid samples collections on the room screen so that they know their task before starting.