Human Computer Interaction CS449 – CS549

Group Assignment- End User Based Usability Testing of Virtual Reality Environments

This is a group assignment. It will be done with your term project group!

Due date – One of the group members has to upload group report to SUCourse by December 26th Tuesday, **(Late submission will not be accepted)**

Grading: 20 points

Aim: The main objective of this assignment is to make students familiar with conducting end user-based usability testing in virtual reality (VR) environments.

Task: In this assignment, you will conduct usability testing of two similar roller coaster virtual reality applications with real users. End-users will use both VR applications and give feedback regarding their experiences. You have to compare and assess the level of users' preferences in two Virtual Reality (VR) roller coaster applications. Evaluate factors contributing to higher or lower immersion and identify the strengths and weaknesses of these applications in creating a captivating VR experience.

VR Glasses: Every group will use one set of VR Glasses. One of your group members have to take it in lecture hour or from my office by signing a form. Those glasses are made with cardboard, so you must use them carefully.

The VR Applications: There are two VR applications which will be used in this assignment. You will use them with your mobile phones:

Application-1 CoSpaces. You must download and install it from Play Store (Android) or AppStore (IOS). At the store you may identify it with this icon:  After the installation, start "Pirate Roller Coaster" from https://edu.cospaces.io/VMX-SBG

Application-2 Youtube.
If you are going to use **Android** phone, use the following link:
Jurassic Dinosaur Coaster (There are 5 VR videos here, you will use the 4th one)
https://youtu.be/hNAbQYU0wpg?si=-Pwn4fKldEnDBku9&t=330

If you are going to use **Apple (IoS)** phone, use the following link:
3D Roller Coaster 05 VR Videos 3D SBS
https://youtu.be/kKQgFFz66a4?feature=shared&t=15

If you are planning to use Android phone, you have to switch to VR mode by clicking on VR icon in YouTube, see below

For YouTube

In Cospaces, there is a similar VR icon on screen.

Test Procedure:

1-Try both applications within your group first. Be familiar with application and the test procedure
2- Users: Prepare one persona for your target user group. Find **minimum 4 users** to test both applications. Keep gender and background balance. Make sure they have **no** previous VR experience. Before the test collect demographics data from each user.
3- Task: Ask them to watch both VR applications. Task order is important, if the first user watches Application-1 first, the second user has to watch Application-2 first.
4- Context: Conduct the test while the end-users sitting in a quiet place
5- Tool: Conduct the test with the same mobile phone for all users.
6- During the test (Quantitative and Qualitative data): Record reactions of users during the test.
7- Post interview (Qualitative data): Prepare interview questions to compare and assess the level of users' preferences in the two Virtual Reality (VR) roller coaster applications. Evaluate factors contributing to immersion and identify strengths and weaknesses in creating a captivating VR experience.
8- Post-test (Quantitative data): Ask subjects to complete SUS (System Usability Scale) for both applications (One for YouTube and one for CoSpaces). Use English version of it. (It is on SuCourse, Week-10)

The user test analysis must be reported under the following headers:

1- **Methodology (20 pts)**

Report the test methodology in detail (you may use tables if you want). If someone wants to replicate your study, there should not be any missing info. **Add photos from user testing sessions of 4 end-users**

Users: Present persona. Report demographics of 4 end-users who tested the applications.
Task procedure: Explain the task procedure, how they completed it.
Context: Explain the context of the study
Tool: Explain specs of phone you used

2- **Results (30 pts)**

Report data collected During the test (Quantitative and Qualitative data)
Report Post interview (Qualitative data) results
Report Post-test (Quantitative data) results

3- **Discussion and Conclusion (50 pts)**

What data tells us about the applications. Which one do people prefer? Why? How can we improve each application.
Limitations of the study
How can this test be improved (future study suggestions)?