Human Computer Interaction CS449 – CS549
Assignment-4 Heuristics/Inspection Based Usability Testing of a Virtual Reality Application

Due date – Upload to SUCourse by December 1ˢᵗ Sunday midnight, **(Late submission will not be accepted)**

Grading: 13 points

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

Task: In this assignment, you will conduct heuristics-based testing of a virtual reality (VR) based gaming application. As an expert in HCI field, identify and explain usability problems of this application and also evaluate factors contributing to higher or lower immersion and identify the usability issues of this application in creating a captivating VR experience. You must propose possible solutions to eliminate the problems. You also must rate how serious those problems are.

VR Glasses: Every student will use one set of VR Glasses. 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 Gaming Application: One gaming VR application will be used in this assignment. You will use it with your mobile phones. You must download and install the game "VR Space Stalker" from Play Store (Android) or AppStore (IOS). At the store you may identify it with the following icons:
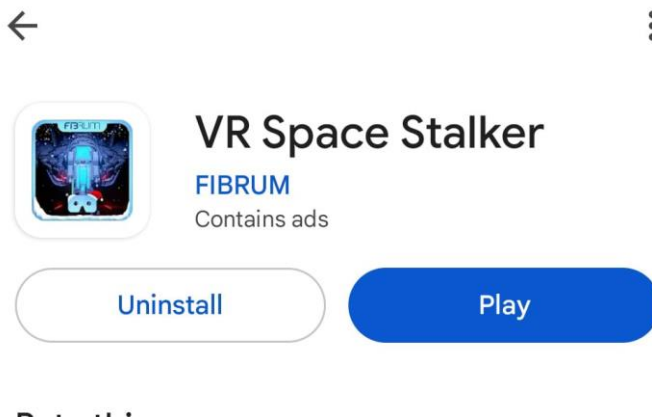
Report Structure:

1- **VR App Info and 2 pass process (27 pts)**

First, explain the application, its purpose, its technical structure, controls, how to use it, how much time a person spent to complete at least one level. (20 pts)

Explain how you applied two pass process of Heuristics evaluation: What did you do in the first pass and in the second pass (7 pts)

2-Heuristics Evaluation (70 pts – Explanation 35, Solution 30, Seriousness 5)
Analyze the app according to the Heuristics evaluation process, use
10 Usability Heuristics Applied to Virtual Reality
https://www.nngroup.com/articles/usability-heuristics-virtual-reality/
10 Usability Heuristics Applied to Video Games
https://www.nngroup.com/articles/usability-heuristics-applied-video-games/
Xerox Heuristics checklist.
Apply the **two-pass** evaluation strategy.

The detailed evaluation analysis must be reported in a table like the one in the next page

3- References (3 pts)

Strictly in APA format

Heuristics	Explanation of the Problems Add related visuals of problems from screenshots	Propose Solution(s)	Seriousness of each problem. (Low, Middle, High) Why?
Visibility of system status	1- 2- ..		
Match between system and the real world. ...	1- 2- .		
User control and freedom. ...	1- 2- ..		
Consistency and standards. ...	1- 2- ..		
Error prevention. ...	1- 2- .		
Recognition rather than recall. ...	1- 2- .		

Flexibility and efficiency of use. ...	1- 2- .		
Aesthetic and minimalist design.	1- 2- .		
Help users recognize, diagnose, and recover from errors	1- 2-		
Help and documentation	1- 2-		

Heuristics Usability Evaluation Resources:

10 Usability Heuristics Applied to Virtual Reality
https://www.nngroup.com/articles/usability-heuristics-virtual-reality/
10 Usability Heuristics Applied to Video Games https://www.nngroup.com/articles/usability-heuristics-applied-video-games/

10 Usability Heuristics for User Interface Design
https://www.nngroup.com/articles/ten-usability-heuristics/?lm=usability-heuristics-applied-video-games
XEROX Heuristic Evaluation - A System Checklist – It is on SUCourse

CS449 – CS549 Lecture Notes

Changing Phone Screen Settings for VR

There are two screen sizes, large and narrow. Test it with your phone on cardboard VR glasses for clear view.
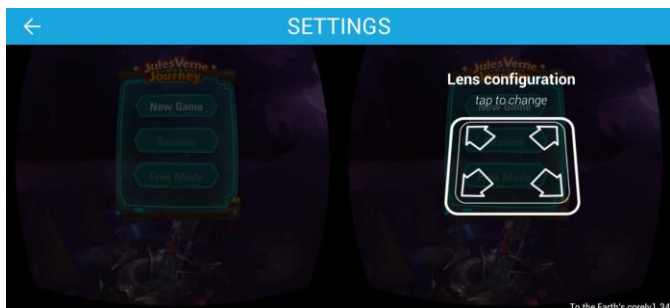
Large Screen

Narrow Screen

You may switch between Large and Narrow screen by clicking on
Click on Lens configuration and change it.

Setting up Cardboard VR Glasses

Make sure that your phone fits to the designated area well. You may need to move it to left or right for a clear view.

For safety reasons, it is better to hold the VR cardboard by hand.

Put your phone here