**Material Selection in XR**

**Testing plan for interactive prototype 2**

The

**Testing Objective**

Assumptions

* Users already know how to move, pick up, drop, and rotate materials on screen.
* Users can relate to the on‑screen UI, understanding that it represents interaction with the closest object.
* Users understand the concept of lighting options and how toggling lights (on/off or adjustments) affects material visualization.
* Users will recognize how shortlisting works within the interface.

Unknowns

* Do users find the object manipulation controls (pick, drop, rotate, move) intuitive?
* How do users expect to interact with lighting controls (e.g., toggles, sliders, presets)?
* What is the user’s mental model when shortlisting materials in a virtual environment?

Test Objectives

This test aims to discover:

* Whether users can move and adjust their viewpoint easily.
* If users can pick up, drop, and rotate objects without confusion.
* Whether the interface feels intuitive and users can successfully shortlist materials.
* How users conceptualize shortlisting in a virtual context compared to real-world material selection.

**Testing Methodologies**

This testing plan will use **Qualitative methods** to better understand users’ behaviours and thought processes while interacting with the prototype. A think‑aloud protocol will be applied, where participants are encouraged to verbalize their thoughts as they complete tasks. I decided to do A/B testing to understand how users understand the vicinity of UI in Virtual World.

* After each task, participants will be asked short reflection questions such as:
* Were you able to finish the task?
  + If yes, what was the easiest part of the process?
  + Where did you find difficulty while completing the task?

The goal is to evaluate how users experience a digital prototype built in Unity, including the intuitiveness of interactions (e.g., moving, rotating, and shortlisting materials) and the clarity of the interface.

**Prototype description/requirements**

The prototype designed to provide interactive functionality that allows testing of user interaction with materials in a virtual environment.

Tasks

* Move, pick up, drop, and rotate material samples cubes on the screen.
* Change viewpoint/eye-level to see materials from different angles.
* Shortlist selected materials for comparison.
* Toggle lighting conditions to observe how materials look in different environments.

**Data collection method**  
During the testing process, I will observe and record users as they interact with the prototype, encouraging them to think aloud to express their thoughts and decision-making. I will take notes on users’ behaviours, difficulties, and comments related to each task. Additionally, I will use screen recording to capture interactions and may record short post-task interviews to gather users’ feedback and reflections.

**Testing Setup**

To prepare for the test, I will:

* Ensure the Unity prototype is fully functional and tested for bugs.
* Set up the testing device (PC or XR headset) with the prototype ready to launch.
* Arrange a quiet, comfortable space where participants can focus without interruptions.
* Prepare recording equipment for screen capture and audio to record think-aloud commentary.
* Have consent forms and introductory materials ready for participants.

**Testing process: (also considering the schedule/time)**

* Welcome and Introduction (30 seconds)
  + Greet the participant and briefly explain the purpose of the test.
  + Explain that this is a test of the prototype, not of their abilities.
  + Encourage them to think aloud as they complete tasks.
* Consent and Setup (2-3 minutes)
  + Obtain informed consent.
  + Help the participant get comfortable with the device and controls.
* Tasks (15-20 minutes)
  + Ask participant to complete a series of predefined tasks
    - Task 1 - You are exploring a material in Virtual reality, you need to pick drop and rotate the material
    - Task 2 - You are shortlisting the materials
    - You are visualising material, toggle between lights on and off from different positions
  + Observe and take notes as they do so.
* Post-Task Interview (5 minutes)
  + Ask questions about their experience, difficulties, and overall impressions.
* Thank and Debrief (1 minute)
  + Thank participant for their time and provide any final information.