The University of Queensland

DECO2300– Interactive Prototype 2

Test Plan

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# Test Plan – Interactive Prototype 2

Project: Star River Notes – Immersive Knowledge Map Space

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## 1. Test Objectives

This test plan builds upon the objectives of the first prototype evaluation.  
  
In the first prototype, the focus was on:  
- O1 Usability/Learnability: Whether participants could quickly complete the core linking operation.  
- O2 Navigation and Understanding: Whether participants could locate a target node and explain its relationship with neighbors.  
- O3 Sense of Structure/Load: Whether spatial layout could reduce cognitive load and enhance structural understanding.  
  
In this second prototype, those objectives are retained and extended:  
- Emphasis on collecting verbalizations during the linking task (Think Aloud).  
- Introduction of a standardized SUS questionnaire for quantifying overall usability.  
  
Specific objectives are:  
- O1 Usability: Can participants complete basic tasks (create, link, and retrieve nodes)?  
- O2 Navigation & Understanding: Can participants clearly understand the relationships between nodes in 3D space?  
- O3 Interaction Clarity: Are the interactions (click, link, retrieve) intuitive? Especially in the linking task, participants are required to verbalize their thoughts.  
- O4 User Perception: Participants’ subjective evaluations through the SUS questionnaire.

## 2. Methodology

- Method 1: Thinking Aloud Protocol  
 Participants verbalize their thoughts, confusions, and decisions while performing tasks.  
- Method 2: SUS Questionnaire  
 After the test, participants complete the 10-item SUS questionnaire (1–5 Likert scale).

## 3. Prototype Description

The prototype is an immersive knowledge map space with the following functions:  
- Create and name nodes (stars/planets)  
- Establish connections between nodes  
- Write and store content inside nodes  
- Drag and rearrange nodes  
- Reopen nodes to retrieve stored content

## 4. Participants

- Target group: Students with design or computing background (classmates and tutors)  
- Sample size: At least 5 participants  
- Recruitment: Voluntary participation in class

## 5. Test Procedure

Step 1 – Introduction (1 min)  
- Explain purpose: “We are testing the system, not you. Please keep saying what you are thinking.”  
- Obtain verbal consent  
  
Step 2 – Task Execution (5-10 min)  
1. Create a new node named “Topic-A”  
2. Link “Topic-A” to a nearby node (participants must verbalize their thoughts)  
3. Reopen “Topic-A” and check stored content  
4. Navigate to “Goal-X” and describe its relationship with two neighbors  
  
Step 3 – SUS Questionnaire (2 min)  
- Participants complete the 10-item SUS questionnaire  
  
Step 4 – Debrief (1 min)  
- Collect final feedback and suggestions

## 6. Data Collection

- Think Aloud Data: Record verbalizations, especially during the linking task.  
- Task Completion (Yes/No): Record whether tasks were completed independently (e.g., “Was the linking successful?”).  
- Questionnaire Data (Likert scale): SUS 10 items scored on a 1–5 scale, converted to 0–100 usability score.  
  
Clarification:  
- Yes/No data measures objective completion.  
- Likert scale data measures subjective usability. They are treated separately.

## 7. Success Criteria

- SC1 Usability (Yes/No): ≥80% of participants complete all tasks without help.  
- SC2 Interaction Clarity (Think Aloud): ≥60% explicitly indicate that the interaction is clear.  
- SC3 SUS Score (Likert): Average score ≥68 indicates acceptable usability.

# Appendix A: SUS Questionnaire

Please indicate how strongly you agree or disagree with each of the following statements about the prototype. Use a 5-point Likert scale: 1 = Strongly Disagree, 5 = Strongly Agree.

1. I think that I would like to use this system frequently.

2. I found the system unnecessarily complex.

3. I thought the system was easy to use.

4. I think that I would need the support of a technical person to be able to use this system.

5. I found the various functions in this system were well integrated.

6. I thought there was too much inconsistency in this system.

7. I would imagine that most people would learn to use this system very quickly.

8. I found the system very cumbersome to use.

9. I felt very confident using the system.

10. I needed to learn a lot of things before I could get going with this system.

Rating Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree