Design Report
Concept

DECO 2300/7230 Digital Prototyping and Extended Reality

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XR Kindle Redesign: Immersive Reading Experience

1. Application Selection & Justification

Application: Amazon Kindle
Category: Creation (Primary) / Productivity (Secondary)

Justification: Reading is fundamentally a creative, immersive mental process that translates exceptionally well to XR environments. Unlike passive media consumption, reading requires active cognitive engagement, imagination, and interaction with content. Current digital reading platforms suffer from limitations including eye strain, environmental distractions, lack of spatial context for complex information, and limited annotation capabilities. XR can address these issues while enhancing the natural immersion that reading provides.

2. User Tasks & Goals

Task 1: Interactive Narrative Exploration	Task 2: Note-Taking	Task 3: Collaborative Reading
-Current Kindle Interaction: Linear page turning, static text, basic search and navigation. **-Goal:** Actively engage with story content through spatial manipulation and environmental control. - Navigate through chapters using spatial gestures and interactive 3D story maps that users construct. - Actively customize and manipulate environmental elements (lighting, atmosphere, soundscapes) to match personal interpretation. **-XR Enhancement Opportunities** - Create and rearrange 3D visualizations of story elements (character networks, plot timelines, location maps). - Build personal story interpretation spaces by placing virtual objects and notes in 3D environments.	**Current Kindle Interaction:**Linear highlighting, flat text-based notes, separate bookmark system. **-Goal:** Organize reading notes and highlights in 3D space for better visual understanding. - Use gesture based highlighting and create virtual sticky notes that can be placed around text in 3D space. - Grab and move highlighted text passages to organize them spatially. - Use simple hand gestures to create and position notes around reading content. - Visually group related concepts by placing them near each other in a virtual workspace.	**-Current Kindle Interaction:** Static popular highlights, individual reading, external sharing via social media. **-Goal:** Engage in shared reading experiences and community discussions. - Join virtual book clubs in user-customizable themed 3D environments. - Share annotations and highlights with reading groups in real-time through spatial gesture sharing. - Participate with spatial audio discussion.

3. Initial Ideation:

For my initial ideation i engaged with different apps given and chose amazon kindle application to redesign in XR. The idea was very simple- Create an immersive space for reading without disturbance and enhance the reading process. As discussed before, reading is fundamentally creative and a tool to support that imagination while also making learning fun was what I had envisioned. I thought of the existing product and the interactions it performs; the limitations it has; and interpreted what I could achieve in XR that does not take away from the core of the concept but at the same time bring enhancements that are only possible through XR.
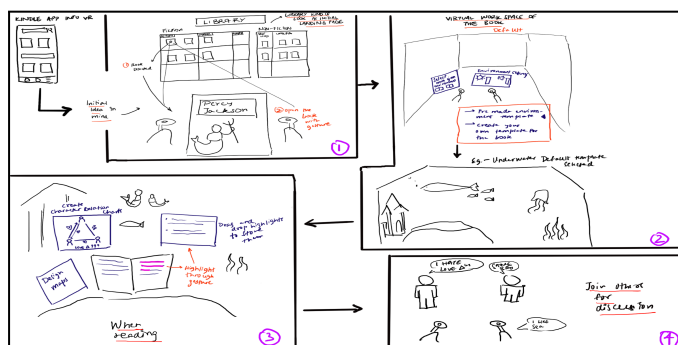
4. Defining a concept for this application in XR-

Target XR Environment

Virtual Reality (VR) - providing fully immersive reading environments that eliminate real-world distractions while offering complete control over the virtual reading space and interactions.

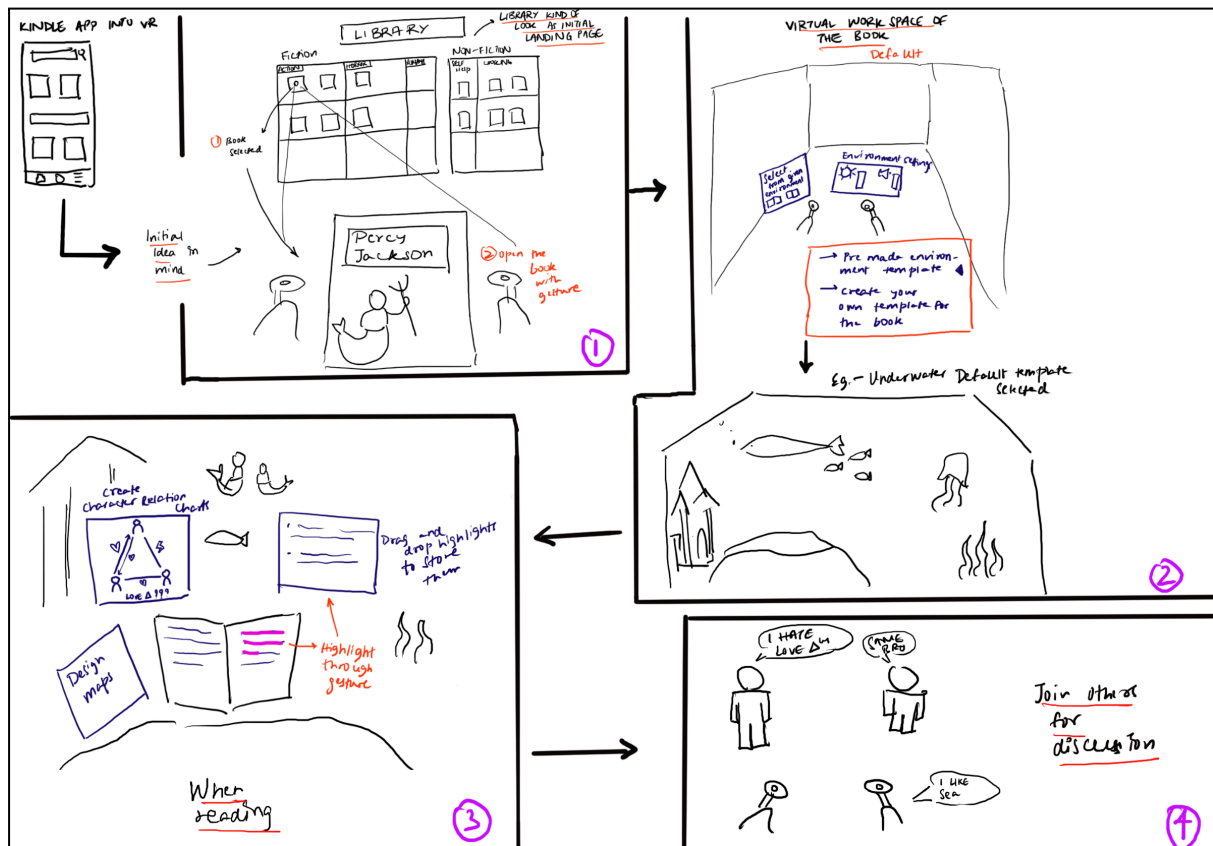| Core Immersive Environment Features	XR Interactions & Affordances
Adaptive Reading Spaces ● **Immersive Environments:** Users can select or create fully virtual environments ● **Dynamic Lighting:** Complete environmental lighting control that adjusts to reading content and user preferences ● **Distraction-Free Design:** Virtual spaces designed enhance concentration and reading comprehension **Spatial Content Organization** ● **3D Library:** Books organized in virtual shelves with spatial categorization and search ● **Search Web** ● **Annotation Layers:** Notes and highlights exist as spatial overlays that can be toggled on/off	**Natural Gesture Controls** ● **Page Navigation:** Subtle hand swipes and pinch gestures for page turning ● **Content Manipulation:** Grab and move note blocks for comparison and analysis ● **Spatial Annotation:** Point and tap to create 3D positioned notes **Voice and Text** ● Audio integration for discussion space ● Font size and positioning of texts can be controlled

The following shows the sketches and interactions I designed in simple terms keeping XR concepts in mind like how the controllers will work and how the user will view things in VR.*

5. Initial Testing Plan:

a. Specific Interactions & Features to Test	b. Key Assumptions	c. Data Collection
● Gesture-Based Page Navigation ● Environmental Immersion ● Spatial Annotation System	Assumption 1: Immersive environments enhance reading engagement without causing distraction Assumption 2: Spatial organization of notes and references improves information retention and retrieval Assumption 3: Natural gesture controls feel intuitive and reduce physical strain compared to traditional interfaces Assumption 4: Social reading features increase motivation and comprehension through community engagement	Quantitative data: ● Reading Speed & Comprehension ● Task Completion Time ● Physical Comfort ● Usage Patterns Qualitative data: ● User Interviews ● Think-Aloud Protocols

Appendix:

Sketch in detail