

Experiment -1

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Design a UI where users recall visual elements (e.g., icons or text chunks). Evaluate the effect of chunking on user memory.

USER INTERFACE AND DESIGN

Design a UI where users recall visual elements (chess pieces). Evaluate the effect of chunking on user memory.

FRAME 1: HOME / TITLE SCREEN

Analysis of the Memory Recall Task - Home Screen

This screen serves as the entry point of the Memory Recall Task and introduces the user to the theme and purpose of the application.

1. Purpose of the Screen

- Introduces the task title “MEMORY RECALL TASK”.
- Sets a serious and focused mood using a blurred chessboard background.
- Encourages user engagement through a clear call-to-action.

2. Key UI Elements

- **Title Text:** Large, centred heading establishes the task objective.
- **Background Image:** Chessboard imagery reinforces the memory and strategy theme.
- **“Enter the Game” Button:** Clearly guides users to begin the task.

3. UX Benefits

- Minimal distractions help users focus.
- Strong visual themes create consistency across all frames.
- Clear navigation flow improves usability.



FRAME 2: INSTRUCTION SCREEN

Chunking Analysis of the Instruction Screen

This screen explains the rules of the task using chunking to reduce cognitive load and improve understanding.

1. Clear and Sequential Instructions

- Instructions are presented in numbered steps.
- Each step communicates a single action, making it easier to follow.

2. Logical Grouping of Information

- Viewing Phase → Users are informed they will observe chess pieces.
- Memorization Phase → Users are encouraged to remember the items.
- Recall Phase → Users recall items on the next screen.
- Evaluation → Accuracy is emphasized over speed.

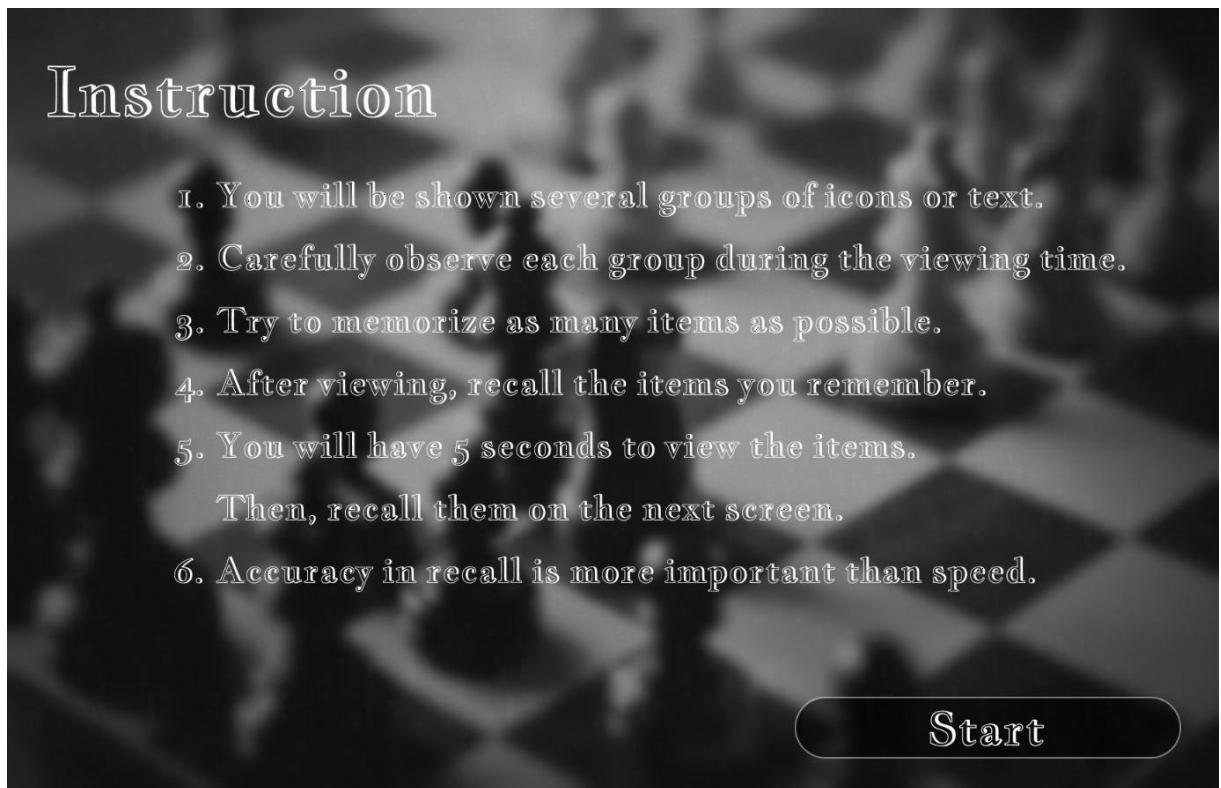
3. Visual Hierarchy

- Large heading "INSTRUCTION" draws attention.
- Proper spacing and contrast improve readability.

- Highlighted “START” button signals progression.

4. Cognitive Benefits

- Reduces confusion.
- Prepares users mentally for the memory task.



FRAME 3: CHUNKING PHASE (MEMORIZATION SCREEN)

Analysis of the Memory Recall Task - Chunking Phase

This screen represents the **visual encoding phase**, where users observe chess pieces for a limited time.

1. Purpose of the Screen

- Allow users to encode visual information.
- Encourages grouping of chess pieces into meaningful chunks.

2. Key UI Components

- **Countdown Timer:** Displays remaining viewing time.
- **Progress Bar:** Visually reinforces time limitation.
- **Grid of Chess Pieces:**

- Includes various chess icons such as pawn, bishop, rook, and king.
- Items are evenly spaced and visually consistent.

- **Glassmorphism Tiles:** Help separate icons into clear chunks.

3. Chunking Strategy

- Users group pieces by:
 - Type (pawn, bishop, rook)
 - Colour (black vs white)
 - Position within the grid

4. Cognitive Benefits

- Improves short-term memory.
- Reduces cognitive overload.
- Encourages pattern recognition.



FRAME 4: RECALL PHASE (SELECTION SCREEN)

Analysis of the Memory Recall Task - Recall Phase

This screen evaluates the user's memory by asking them to select previously seen chess pieces.

1. Purpose of the Screen

- Tests memory retrieval after the chunking phase.
- Measures recall accuracy.

2. Key UI Components

- **Title & Instruction Text:** Guides users to select remembered items.

• **Grid of Chess Piece Options:**

- Contains correct items and distractors.
- Similar visual styles increase challenge.

- **Selection Indicators:** Show chosen items.

- **Submit Button:** Confirms user input.

3. UX & Cognitive Benefits

- Tests are true recall vs false memory.
- Maintains user engagement through interaction.
- Clear feedback mechanism through selection indicators.



FRAME 5: RESULT / FEEDBACK SCREEN

Analysis of the Memory Recall Task - Result Screen

This screen provides feedback on user performance and concludes the task cycle.

1. Purpose of the Screen

- Displays recall score (e.g., 3/4).
- Allow users to proceed or repeat the task.

2. Key UI Components

- **Score Display:** Shows recall accuracy clearly.
- **Progress Indicator:** Indicates task completion.
- **Action Buttons:**
 - **Continue** – Move to the next level.
 - **Restart** – Retry the memory task.
 - **Exit** – End the game.

3. Cognitive UX Benefits

- Immediate feedback reinforces learning.
- Multiple options give users control.
- Encourages repeated practice to improve memory



PROTOTYPE LINK:

[https://www.figma.com/proto/2wqoxVLdj6MvYuWWbTMpA0/Untitled
?node-id=0-1&t=xUhV6i86KHyATs2H-1](https://www.figma.com/proto/2wqoxVLdj6MvYuWWbTMpA0/Untitled?node-id=0-1&t=xUhV6i86KHyATs2H-1)

CONCLUSION:

The chess-based Memory Recall Task effectively applies the principle of **chunking** to enhance short-term memory performance. By grouping visually similar chess pieces, limiting viewing time, and introducing distractors during recall, the UI encourages pattern-based memory rather than individual memorization. The clean layout, strong visual hierarchy, and structured flow make the design both cognitively effective and user-friendly.