Experiment -2

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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.

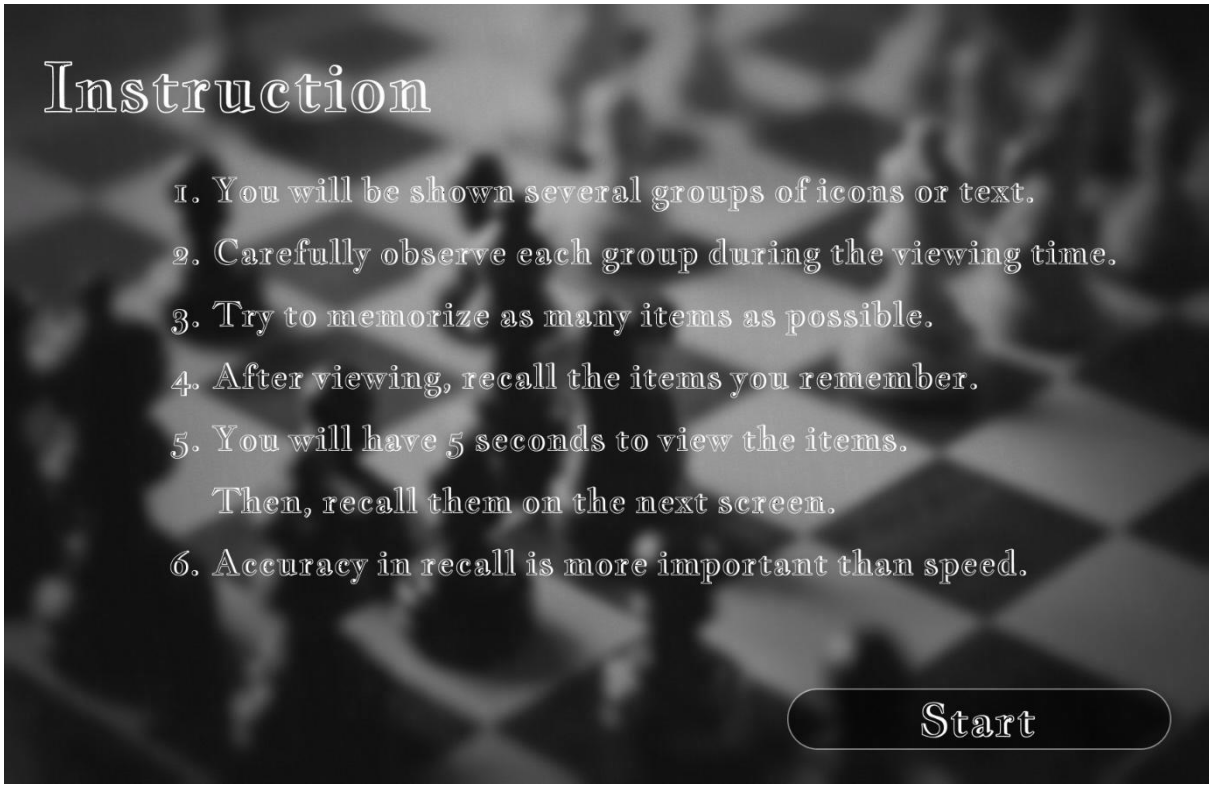
3. **Visual Hierarchy**

- 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 s 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 s 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

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.