EXPERIMENT – 01

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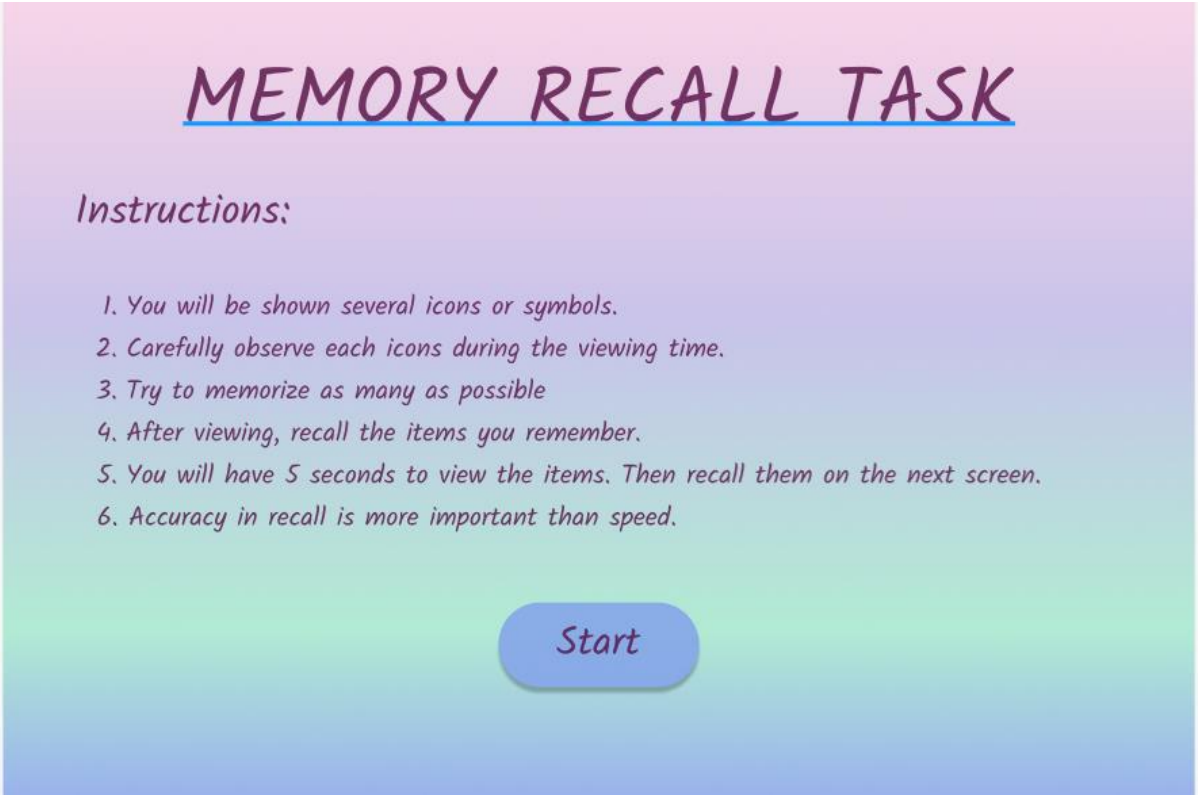
MEMORY CHUNKING TASK

Page 1: Instructions Screen

Chunking Analysis:

- **The instructions introduce the concept of memorizing multiple symbols, but they do not explicitly mention chunking as a strategy.**
- **However, chunking is implicitly encouraged since the task involves remembering multiple symbols in a short time.**
- **Key Analysis:**
    - **If chunking is a factor in performance, the instructions could be improved by suggesting different chunking techniques (e.g., grouping by shape, color, or meaning).**
    - **A study could compare performance with vs. without explicit instructions on chunking to measure its effectiveness.**



Page 2: Viewing the Symbols

Chunking Analysis:

- **This is the stimulus phase, where users see multiple icons at once.**
- **The 3-second timer adds pressure, forcing participants to use quick memorization strategies.**
- **Potential Chunking Patterns:**
    - **Perceptual Chunking: Grouping symbols based on similar shapes or colors.**
    - **Semantic Chunking: If symbols represent meaningful concepts, users might form associative connections.**
    - **Spatial Chunking: Remembering items in clusters based on their position on the screen.**
- **Key Analysis:**
    - **A heatmap or eye-tracking study could reveal whether participants naturally scan in patterns suggesting chunking.**
    - **A post-test survey could assess which chunking strategies participants used.**

Page 3: Time Up Notification

Chunking Analysis:

- **The sudden "Time Up!" message marks the transition between encoding and recall.**
- **This moment is crucial because working memory must now convert chunks into long-term recall.**
- **Key Analysis:**
    - **The retention gap between this screen and recall could be tested by introducing a distraction task (e.g., a math problem) to see if chunking helps resist interference.**
    - **Users who employed chunking should perform better in recall despite the delay.**

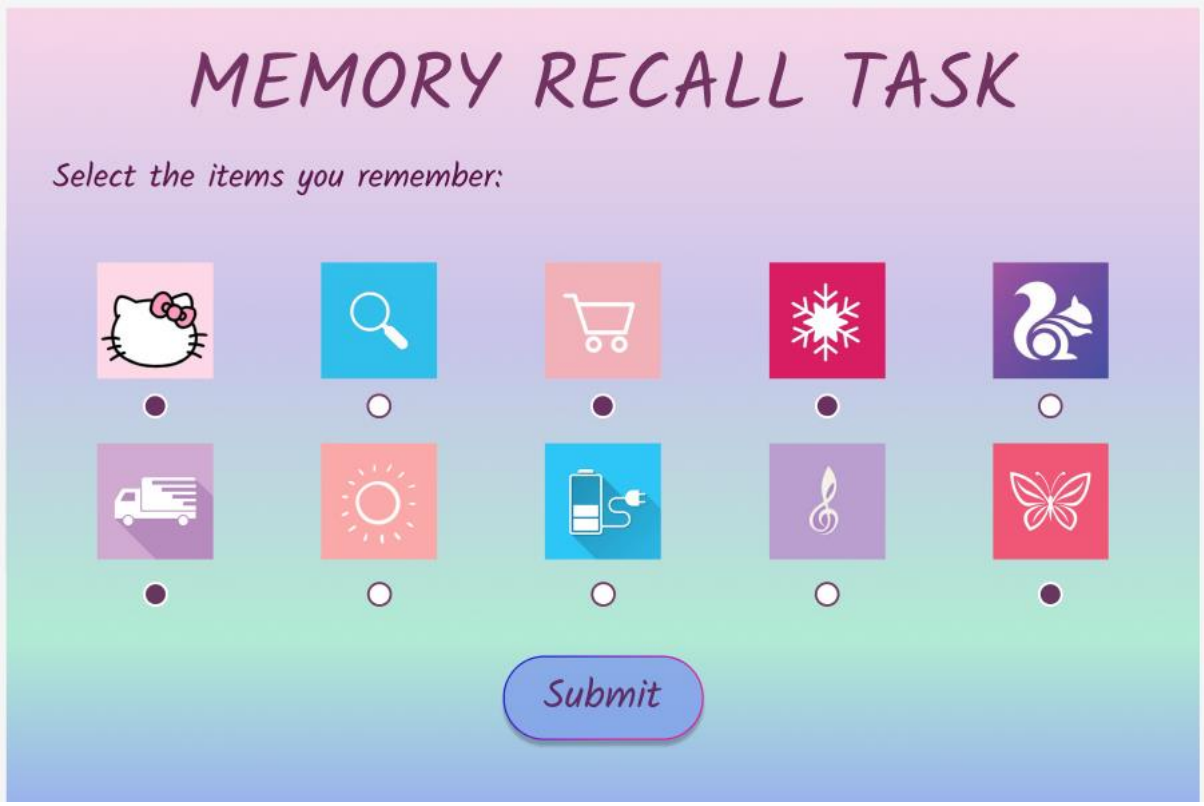
Page 4: Recall Phase

Chunking Analysis:

- **Participants are asked to select the items they remember from a set.**
- **Indicators of Chunking:**

- If users recall clusters of items correctly rather than scattered symbols, chunking was likely used.
- If users confuse similar-looking symbols, they may have misgrouped chunks.

- **Key Analysis:**
  - A comparison of recall order can reveal chunking patterns (e.g., if users remember items in grouped sequences instead of random selections).
  - Chunking effectiveness can be measured by analyzing how many symbols were remembered from different potential groups.



Page 5: Recall Score Display

Chunking Analysis:

- **The score reflects memory performance but does not distinguish how users recalled items.**
- **Potential Chunking Metrics:**
  - **Chunking Score: Comparing recall patterns to likely chunking groups (e.g., if 3 circular symbols appeared together and the user recalled all 3, that suggests chunking).**

- **Error Patterns: If participants incorrectly recall symbols that resemble other symbols in a chunk, it may indicate chunking interference.**

- **Key Analysis:**
  - **The addition of a detailed recall analysis (e.g., showing recall order, errors, and accuracy by chunk group) would help assess chunking more precisely.**

Page 6: Exit Screen

Chunking Analysis:

- **No direct relevance to chunking, but it marks the end of the cognitive process.**

- **Key Analysis:**
  - **A post-task questionnaire asking participants about their memory strategy could provide self-reported data on chunking use.**
  - **A future iteration of the task could introduce a learning phase, where participants are explicitly trained in chunking and their recall is compared before vs. after training.**

Final Thoughts on Chunking Analysis

1. **Chunking is most crucial in the encoding (viewing) and retrieval (recall) phases.**
2. **Measuring chunking requires tracking how items are grouped and recalled together.**
3. **Adding post-test analysis (heatmaps, recall sequences, error types) would give deeper insight into chunking effectiveness.**