

EXPERIMENT 2

CHUNKING MEMORY VS RECALL

TITLE:

Design and prototype a visual memory recall task using grouped car brand logos to study the effect of chunking on short-term memory.

AIM:

To design and prototype a memory recall experiment in Figma using grouped car brand logos and analyze the impact of chunking on user memory performance.

SOFTWARE USED:

- Figma (UI/UX Design Tool)

THEORY:

Memory recall is the cognitive ability to retrieve previously viewed information from short-term memory. Human short-term memory has limited capacity. According to Miller's Law (7 ± 2 rule), individuals can remember approximately 5 to 9 items at a time. Chunking is a psychological technique where information is grouped into meaningful units to improve memory retention.

In this experiment, multiple car brand logos were grouped visually into sections to observe whether structured presentation improves recall accuracy.

DESIGN DESCRIPTION:

A. Home Screen

The home screen contains:

- Title: "Memory Recall Task"
- Instructions explaining the experiment
- Start button to begin the task

Purpose:

To clearly introduce the experiment and prepare users before the viewing phase begins.

MEMORY RECALL TASK

“You will be shown several groups of icons or text. After viewing, recall the items you remember.”

START

B. Viewing (Chunking) Phase

The viewing phase displays:

- Multiple car brand logos
- Logos grouped into three structured sections
- A countdown timer from 5 seconds (00:05 to 00:00)
- Visual clock icon for time indication

Purpose:

To allow users to observe and encode grouped visual elements into short-term memory within a fixed duration. The timer decreases sequentially (00:05 → 00:04 → 00:03 → 00:02 → 00:01 → 00:00) to simulate controlled exposure time.



C. Recall Phase

The recall screen includes:

- Heading: "Recall the items"
- Text-based answer options (e.g., Mercedes Benz, Porsche, Jaguar, Ferrari, Toyota, Nissan)
- Submit button

Purpose:

To evaluate how many car brands the user can correctly recall after the viewing phase.



A screenshot of a digital interface titled "Recall the items" in a large, bold, blue font. Below the title, there are six light pink rectangular buttons arranged in two columns. The left column contains the text "Mercedes Benz", "Jaguar", and "Toyota". The right column contains the text "Porsche", "Ferrari", and "Nissan". At the bottom right of the interface is a blue button with the word "SUBMIT" in white, italicized, uppercase letters.

D. Result Screen

The result screen displays:

- Completion message
- Confirmation that the task is completed
- Feedback screen (Congratulations message)

Purpose:

To provide user feedback after the recall task is completed.



A screenshot of a digital interface with a light blue background. At the top, the text "MEMORY RECALL TASK" is displayed in a large, bold, blue, all-caps font. Below this, the text "Congratulations!" is written in a black, italicized font. Underneath that, the text "You have completed the task." is also written in a black, italicized font.

PROCEDURE:

- Created a Home Screen with task instructions and a Start button.
- Designed a Viewing Phase displaying grouped car logos.
- Added a countdown timer prototype of 5 seconds.
- Created multiple frames to simulate timer reduction.
- Designed a Recall Phase with answer selections.
- Linked Submit button to the Result screen.
- Displayed completion feedback after task submission.

OBSERVATION:

Users were able to recall a higher number of car brands when the logos were visually grouped into structured sections. The chunked layout reduced visual overload and improved memory encoding.

RESULT:

The experiment demonstrates that grouping visual elements into structured chunks improves short-term memory recall accuracy compared to unstructured presentation.

CONCLUSION:

Chunking enhances memory retention by organizing visual information into meaningful groups. The experiment confirms that structured grouping of car logos improves recall performance and reduces cognitive load.