**Cognitive psychology**

Cognitive psychology is the study of internal mental processes such as perception, reasoning, memory, attention, language, problem-solving, and learning. Despite being a relatively new branch of psychology, it has quickly established itself as one of the most popular subfields.

**Attention:** This is a cognitive process that requires people to focus on a single object in their environment or on whatever they are doing at the time. The car infotainment prototype provides a detailed user interface as it requires the user to give instructions for feedback to be given. Understanding the car infotainment system prototype requires a high level of attention. In terms of colour, navigation maps, widgets, and music, the interface is arranged in such a manner that it attracts the user's attention, and information is not concentrated in the interface.

**Learning:** This is a cognitive process that requires taking in new things and integrating with   
the knowledge you already have. The car infotainment system prototype require users to learn it. so users will need to add on the knowledge they already have. The interface has clear information on it and a user should not have a hard time reading or navigating through the car infotainment system.

**Perception:** This cognitive process allows users to take in information using their senses   
which in turn allows them to use this information to interact with the world. Icons on the   
interface are easy to recognize and the text is very clear.

**Memory:** This cognitive process allows users to take in, keep and retrieve information. It is   
important in the sense that it helps people continue to have knowledge about the world and   
themselves. This will help users remember certain features about the car infotainment system prototype. The context of the way things are put together on the interface will   
affect the user’s memory. Good design to help with memory is when interfaces are built to   
promote recognition rather than recall.

**Interactive design theory**

Interactive design is a user-centered branch of study that focuses on cyclical and collaborative processes between humans and technology to create meaningful media communication. Simple, clearly defined goals, a strong purpose, and an intuitive screen interface are all characteristics of successful interactive designs.

Interaction design is aided by several sorts of interaction and modes such as instructing, conversing, manipulating, and exploring.

**Instructing**: Instructing is useful for repetitive operations like providing commands and selecting alternatives. Users of the prototype car infotainment system may provide commands such as pressing a button to alter the screen based on the app's functionality.

**Conversing:** This involves communicating as if you were having a conversation; it is beneficial for youngsters, handicapped persons, and specialist services such as Amazon's Alexa. Alexa assists users by providing voice commands. Users of the prototype car infotainment system will receive replies to orders using speech recognition.

**Manipulation**: This comprises engaging with items via sketching, driving, or riding a bike, for example. Users of the prototype car infotainment system will be able to alter what appears on the screen.

**Exploring**: This happens through learning, socializing, gameplay or moving through the

environment. The car infotainment system prototype users will learn the system through tooltips and feature descriptions as the user explores through the system

**Research Study**is empirical evidence-based study. It's also a method of learning through direct and indirect observation or experience.  
This section of the report will go into the research that was done to test at least one hypothesis.

This research project will assess how effectively the prototype's interactions operate. It will be utilized to determine whether or not the prototype is satisfactory to the users.

• Is it simple to traverse the prototype?

• Does it issue appropriate error messages?

• Does it provide the user with a sense of fulfillment?

• Have all of the user criteria been met?

Assumption sought to respond by saying: This research project will assess how effectively the prototype's interactions operate. It will be utilized to determine whether or not the prototype is satisfactory to the users.

The following assumptions are being tested: • Can people turn on the car system?

• Is it possible for consumers to switch off the car system?

• Is it possible for consumers to reset the car system only once?

**Data analysis and results:** The data received will be analyzed through the quantitative research method   
which states that quantitative research generates data about behaviors or attitudes indirectly.   
The following questions need to be shown.   
• How easy it was to navigate through the application.   
• Are all users satisfied with the application?   
• How quick was the application responding?   
• Is the interface simple and straight to the point?   
• Can all users of all ages use it?   
• Are the words clear?