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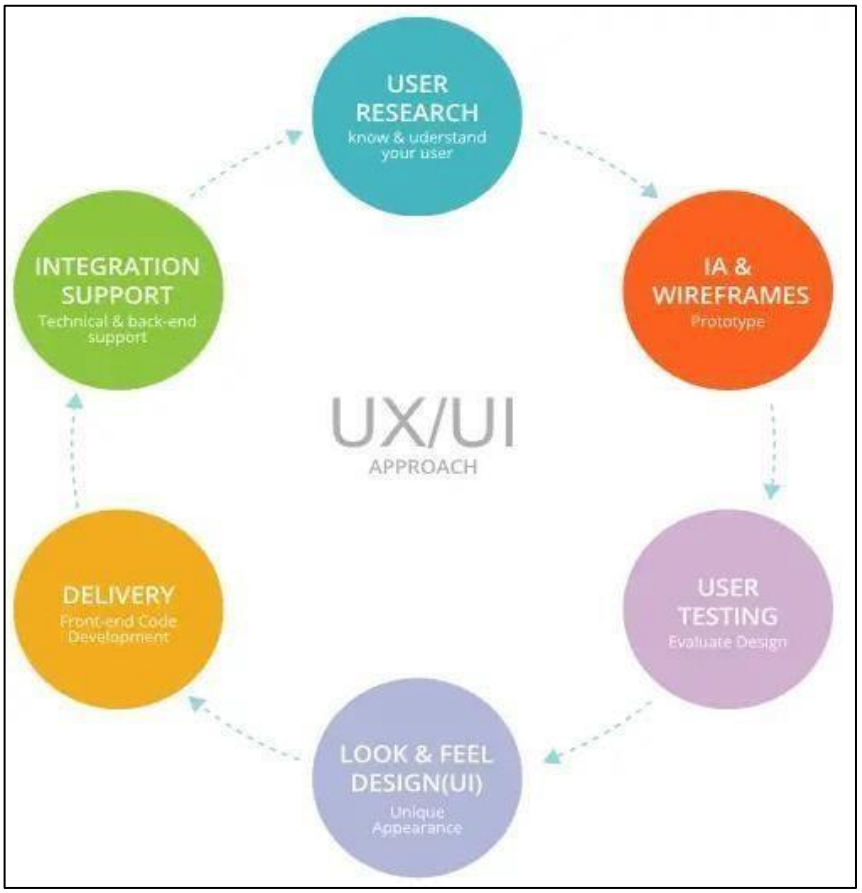
EXPERIMENT NO. - 1

Q. Introduction to UI life cycle and UI tools.

UI Life Cycle:



UI Tools:

1. InVision:

InVision is a web-based prototyping tool popular with both UX and UI designers alike. You can upload static design files and quickly turn them into high-fidelity, interactive prototypes.

2. Sketch:

The digital design app that every UI pro needs: Sketch. This is a vector-based tool, so you can easily resize anything that you draw without losing sharpness.

3. Figma:

Discover the very first in-browser interface design tool, Figma. With powerful editing tools and loads of handy features, Figma is a one-stop shop for designing, prototyping and gathering feedback. UI designers especially can take advantage of constraints feature, which adapts your designs when the screen size changes. With the components feature, it's also extremely easy to reuse elements across your designs.

4. Flinto:

Flinto is an interactive prototyping app for Mac which offers pretty much everything you need to bring your designs to life. Design micro-interactions and screen transitions, add video layers simply by dragging video or GIF files straight into your designs, incorporate UI sound effects and customizable scrolling—the list goes on.

5. Adobe XD:

Adobe XD is a vector-based tool for designing and prototyping user experiences for web, mobile, and even voice! If you're already familiar with the Adobe Creative Cloud suite, you'll feel right at home in Adobe XD—an extremely versatile tool which offers a whole host of features for designing, prototyping, sharing, collaborating, and creating a complete design system. XD natively supports Windows 10 and macOS, and is also available as a mobile app for both Android and iOS.

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EXPERIMENT NO. 2

Q. Project Proposal and Requirement Gathering (Introduction of Project).

Project Name: EV PlugPoint (EV Charging Station Finder App)

As the adoption of electric vehicles (EVs) is increasing rapidly, the demand for accessible and efficient charging infrastructure is also growing. However, EV owners often face difficulties in locating nearby charging stations, checking their availability, and planning their routes accordingly. To address these challenges, we propose the development of an **EV Charging Station Finder**—a mobile and web-based application that allows users to find and access real-time information about EV charging stations.

This app will provide EV owners with an easy-to-use platform where they can search for charging stations based on their location, check availability, compare pricing, and even reserve a slot in advance. By promoting the efficient use of charging stations, this project aims to support the transition to electric mobility and contribute to a greener future.

Objectives:

1. **Enhance Accessibility** – Provide real-time information about nearby EV charging stations.
2. **Reduce Range Anxiety** – Help users plan their trips efficiently by integrating station availability and navigation.
3. **Encourage EV Adoption** – Make charging infrastructure more accessible, promoting the shift from fuel-based vehicles to electric vehicles.
4. **Optimize Charging Infrastructure** – Encourage efficient usage of charging stations through reservation and live status updates.
5. **Support Sustainable Mobility** – Contribute to the reduction of carbon emissions by facilitating EV usage.

MOTTO: “Charge Smart, Drive Green”.

Advantages:

- Easy to use.
- Flexible and user-friendly design.
- It will certainly reduce the traffic and will help in efficient travelling.
- This will help in decreasing the pollution caused by the vehicles.

Disadvantages:

- Less privacy- Some people prefer privacy while travelling. Those individuals will have to compromise with their privacy.
- Different time requirements- Individuals who carpool together may finish works at different times or may need to reach their destination differently.

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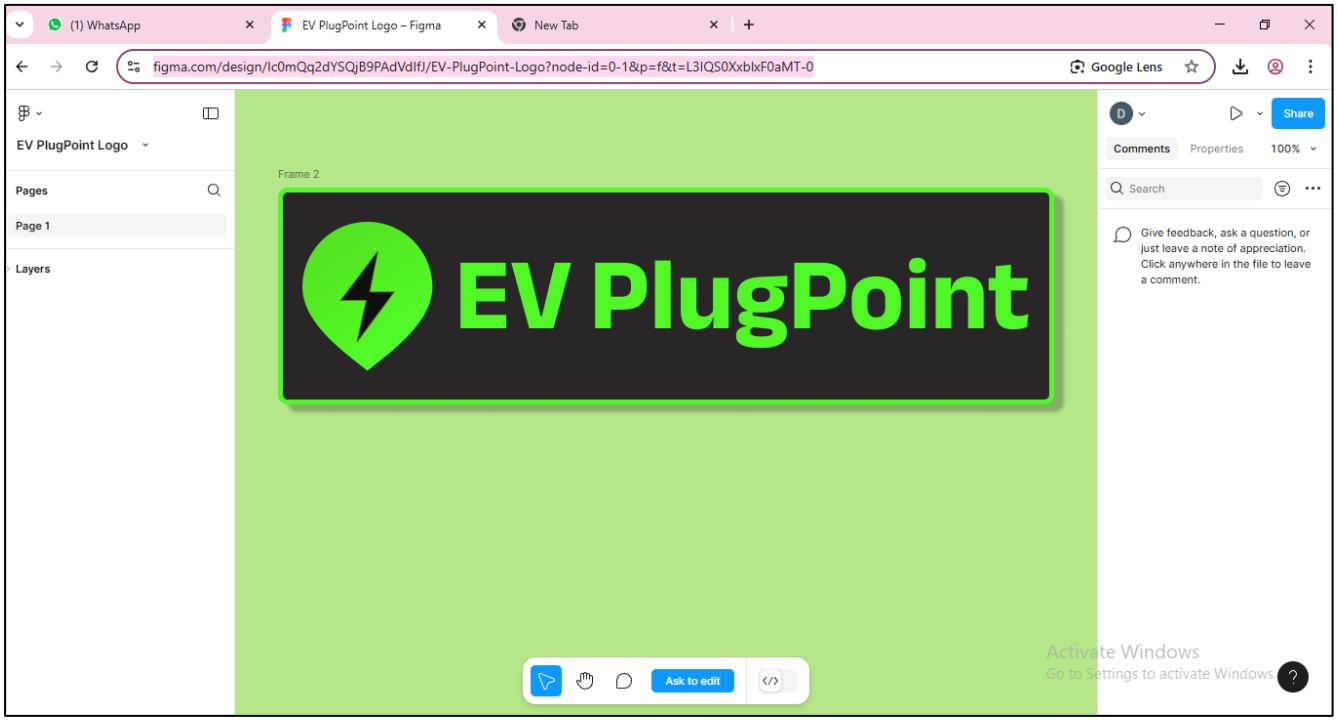
EXPERIMENT NO.3

Q. Logo Designing.

Link:

https://www.figma.com/design/Ic0mQq2dYSQjB9PAdVdIfJ/EV-PlugPoint-Logo?node-id=0-1&p=f&t=L3IQS0XxblxF0aMT-0



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EXPERIMENT NO.4

Q. Problem Statement: System Concept Statement.

EV Charging Station Finder Application Concept Statement

An intuitive mobile app designed to help electric vehicle (EV) owners easily locate nearby charging stations in real-time, offering convenient access to EV charging infrastructure. The app provides information on station availability, location, charger type, and vehicle compatibility for a seamless charging experience.

As the number of electric vehicles increases, finding available charging stations becomes a growing challenge. This app eliminates uncertainty and stress by offering real-time station updates, helping drivers plan their trips and minimize downtime. It supports the widespread adoption of EVs by making charging more accessible and efficient.

The app is aimed at electric vehicle owners, fleet operators, and businesses with electric vehicle fleets. It serves commuters, travelers, and businesses seeking reliable, easy-to-use charging solutions for their vehicles.

Customer Benefits:

- **Convenience:** The app provides real-time information on the availability, location, and types of chargers at stations, making it easy for users to find a nearby charger without guesswork.
- **Time-Saving:** It allows users to quickly identify stations that are operational and avoid wasting time on unavailable chargers.
- **Better Planning:** With a detailed map and route optimization, users can plan long-distance trips with charging stops, ensuring a smooth travel experience.
- **Eco-Friendly:** By enabling more efficient use of EV charging stations, the app supports the growth of clean, sustainable transportation.

In short, the app helps EV owners easily find nearby charging stations in real-time, saving them time and reducing stress. It provides detailed information on station availability, location, and charger types, making trip planning more convenient. With this app, electric vehicle travel becomes simpler, more efficient, and environmentally friendly.

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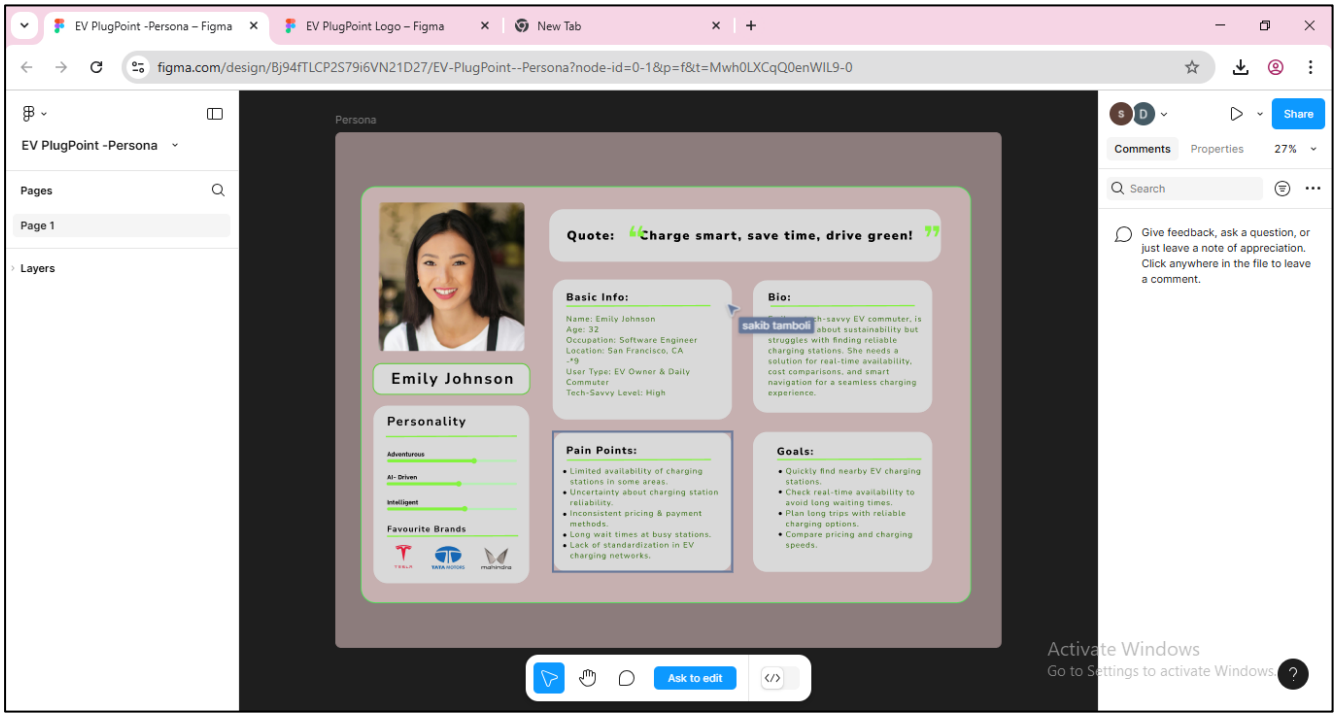
EXPERIMENT NO.5

Q. Design a user persona.

Link:

https://www.figma.com/design/Bj94fTLCP2S79i6VN21D27/EV-PlugPoint--Persona?node-id=0-1&p=f&t=Mwh0LXCqQ0enWIL9-0



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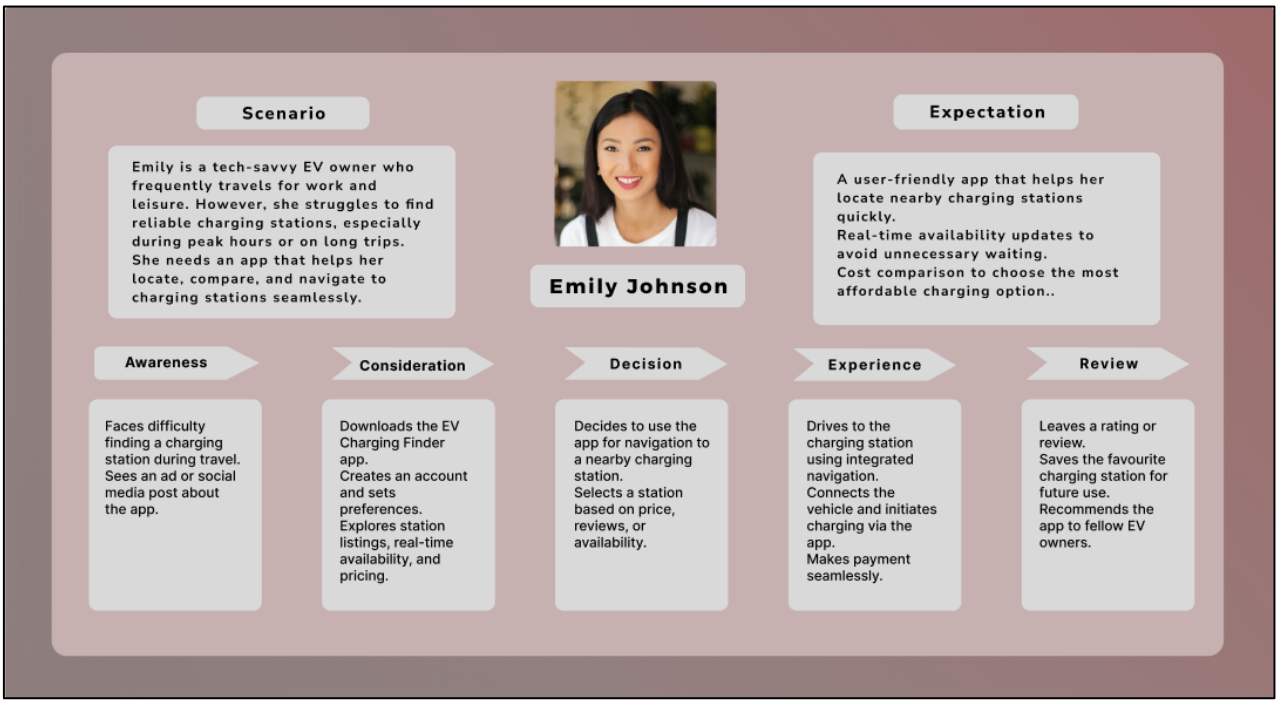
EXPERIMENT NO.6

Q: Design a Customer Journey Map.

Link: https://www.figma.com/design/m5kf5lAE2PxRlV88B0blZF/EV-PlugPoint-Customer-Journey-Map?node-id=0-1&p=f&t=37NlkgeVr70O5Krl-0



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EXPERIMENT NO.7

Q. ER(Entity Relationship) Diagram. EVPlugPoint.

ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.

ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships.

ER Model stands for Entity Relationship Model is a high-level conceptual data model diagram. ER model helps to systematically analyses data requirements to produce a well-designed database. The ER Model represents real-world entities and the relationships between them. Creating an ER Model in DBMS is considered as a best practice before implementing your database.

Some E-R model notations are:

1. Entity
An entity is a thing or object that can be distinctly identified.
Example: A *person* is an entity because each person is distinguishable.

2. Attribute
Each entity has a set of attributes that describe its properties.
Example: The *Person* entity has attributes like Name, Age, Address, Gender, etc.

3. Relationship
A relationship is an association among two or more entities.
Example: An enquiry relationship exists between a *Customer* entity and a *Railway* entity**.**

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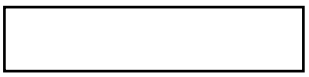
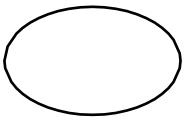
Some notation of E-R model are:

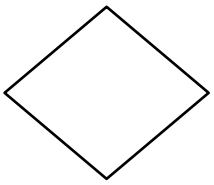
1. **Rectangle:** It represents entity set.



2. **Ellipse:** It represents attributes.



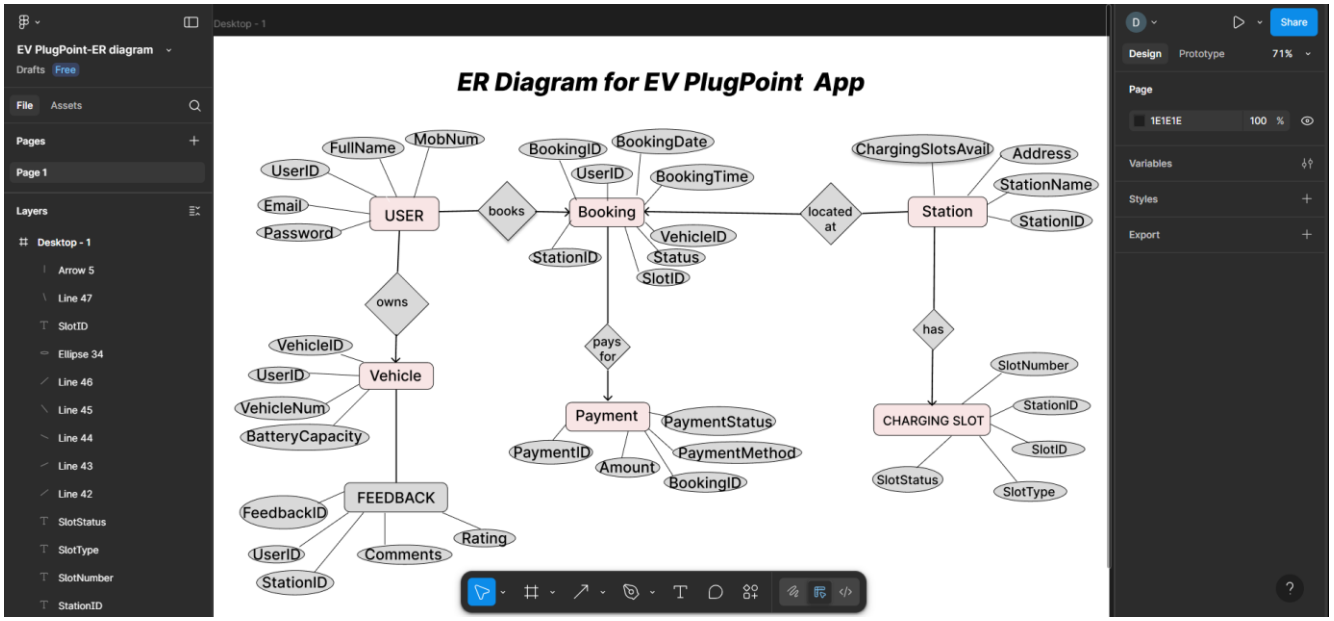
3. **Diamond:** It represents relationship among entity set.



4. **Line:** Line lies between the attribute entity and entity to relationship.

E-RDIAGRAM: EVPlugPoint :

Link: https://www.figma.com/design/dgn16TXavZu3rV4Rshm2K5/EV-PlugPoint-ER-diagram?node-id=0-1&p=f&t=ZVF4gf92Lt1N81TX-0



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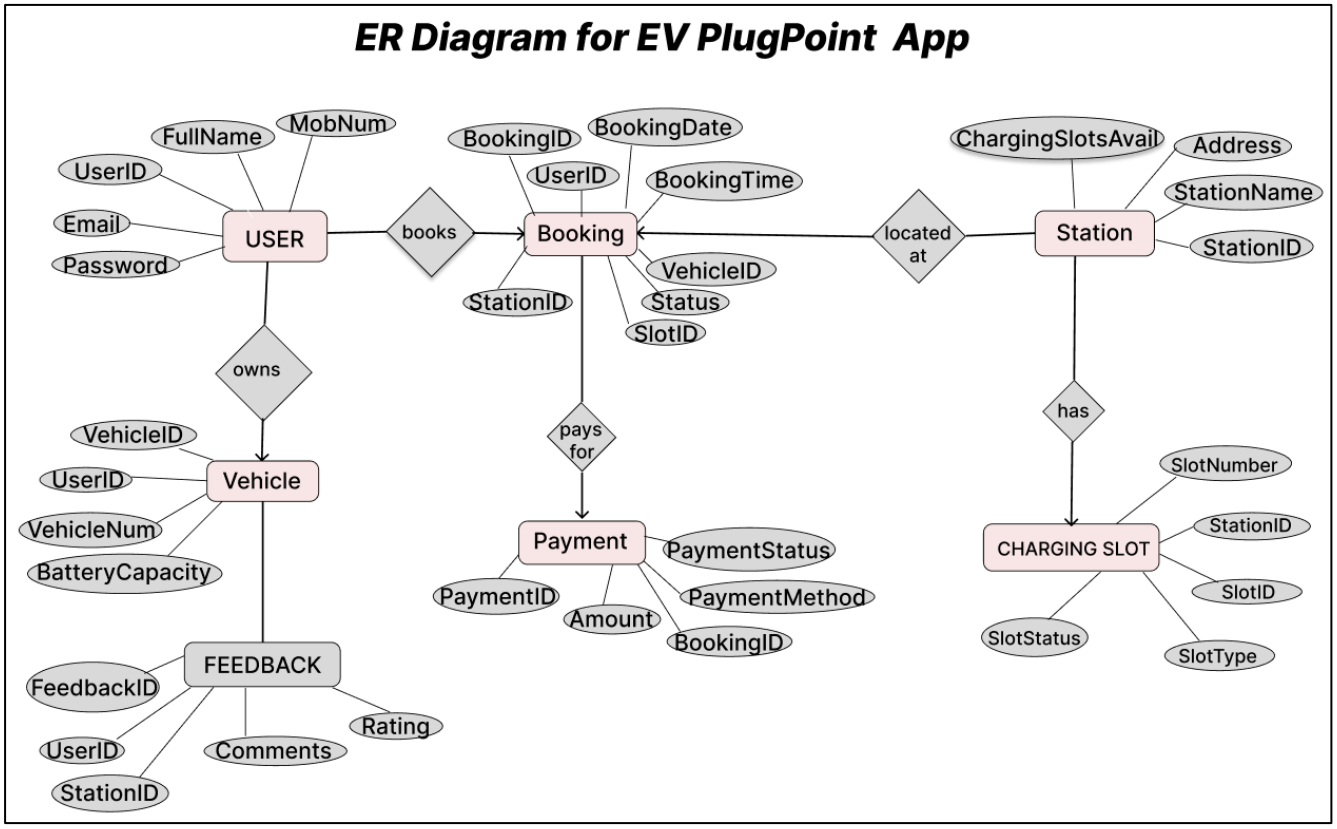

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EXPERIMENT NO.8

Q. Creation of scenario – StoryBoard.

1.

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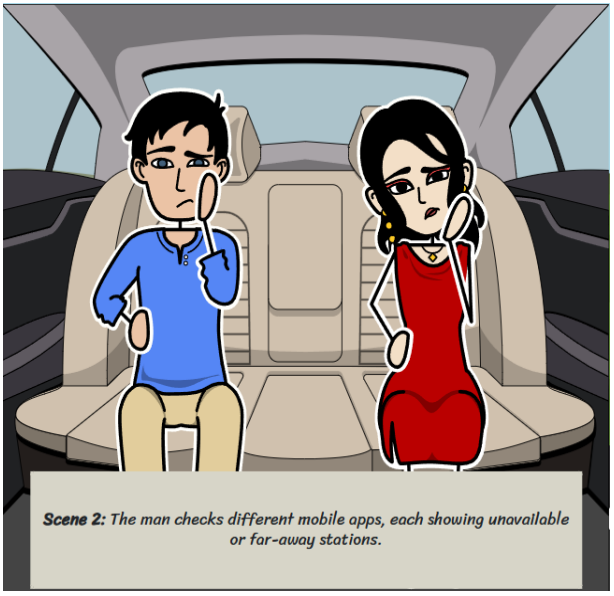

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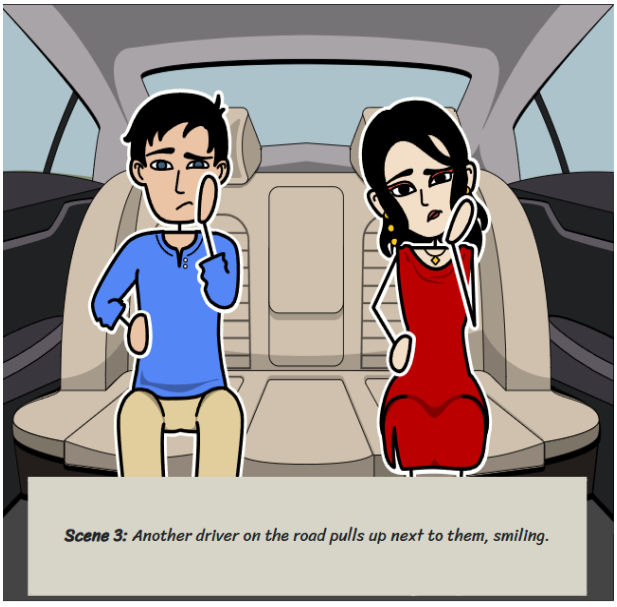

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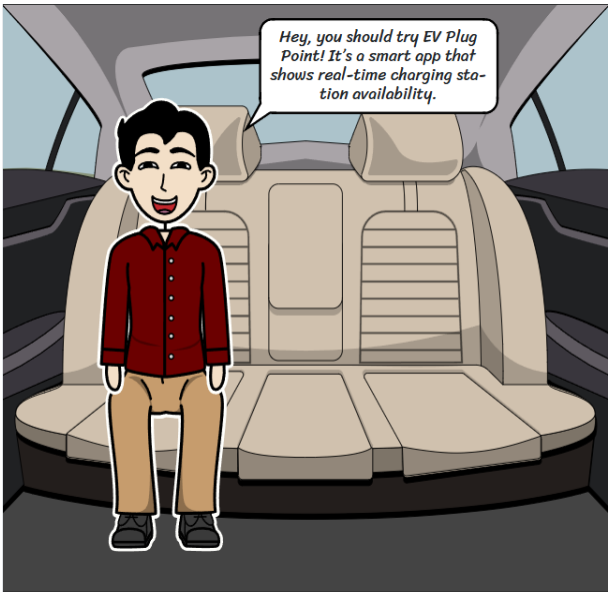

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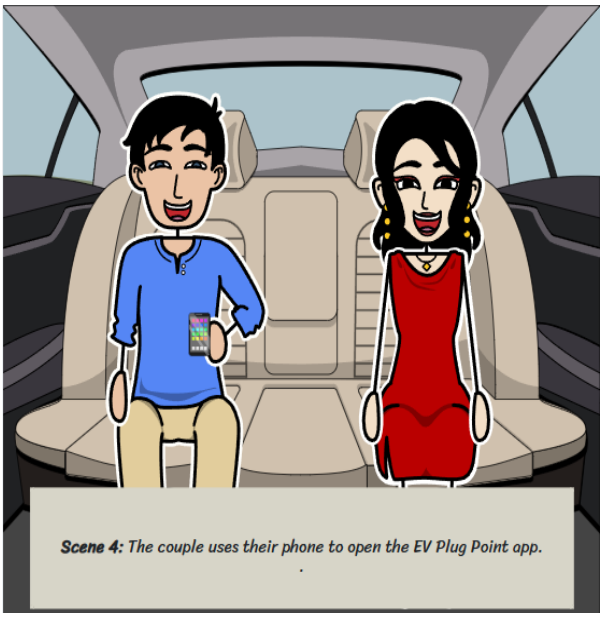

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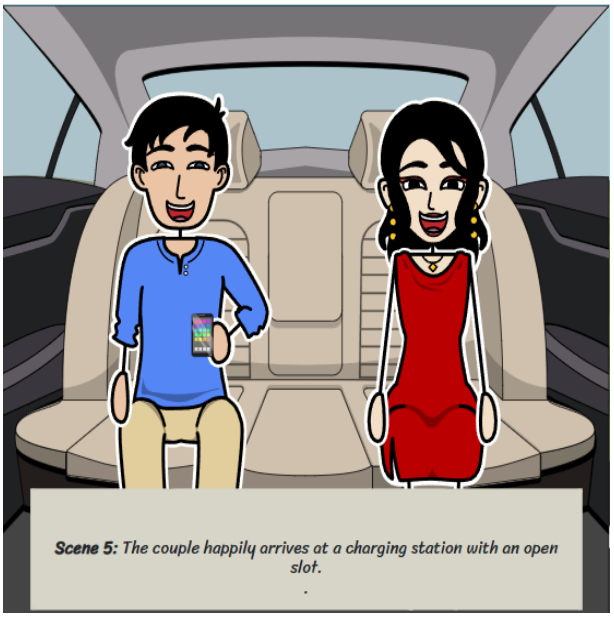

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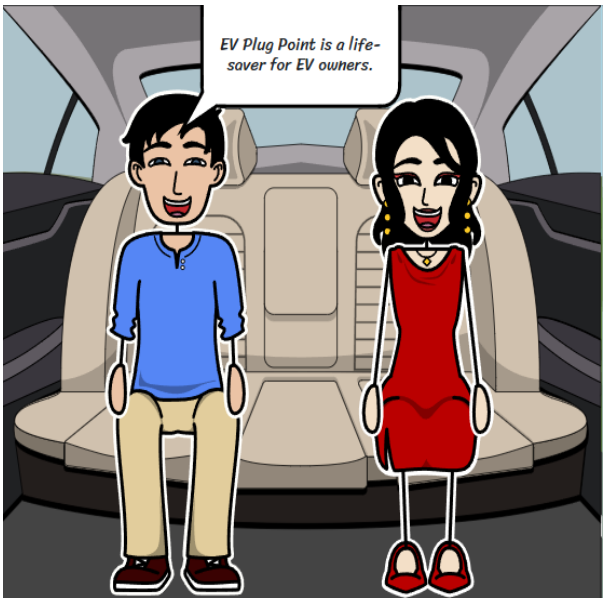

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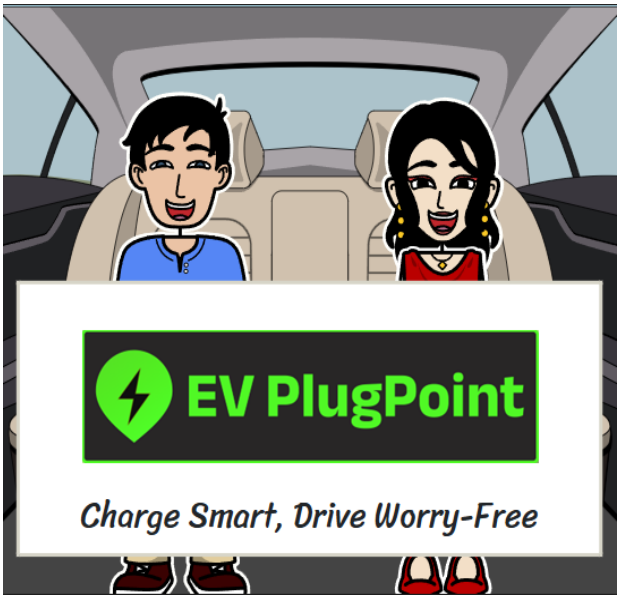

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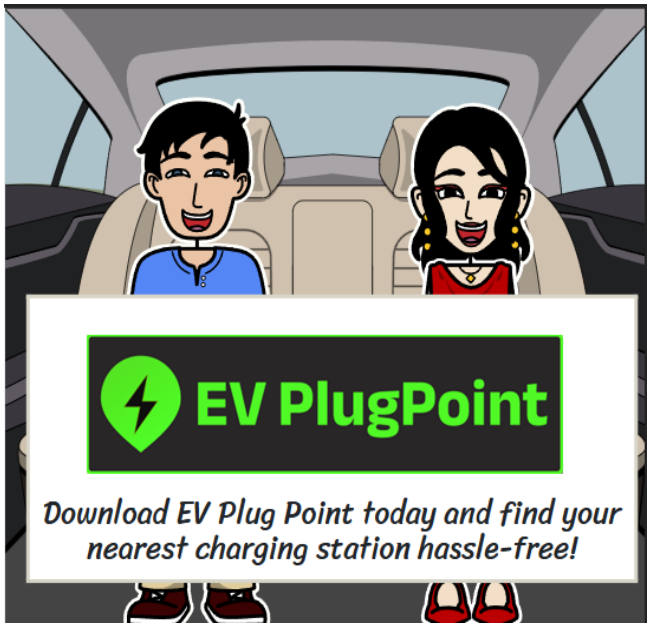

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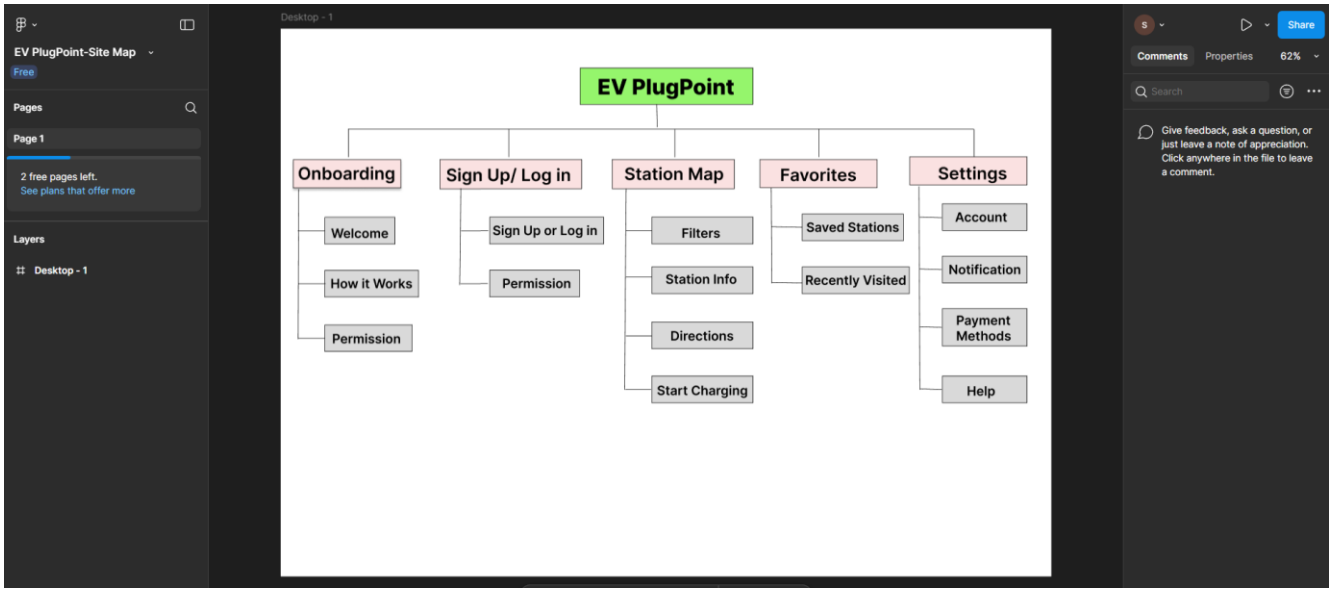
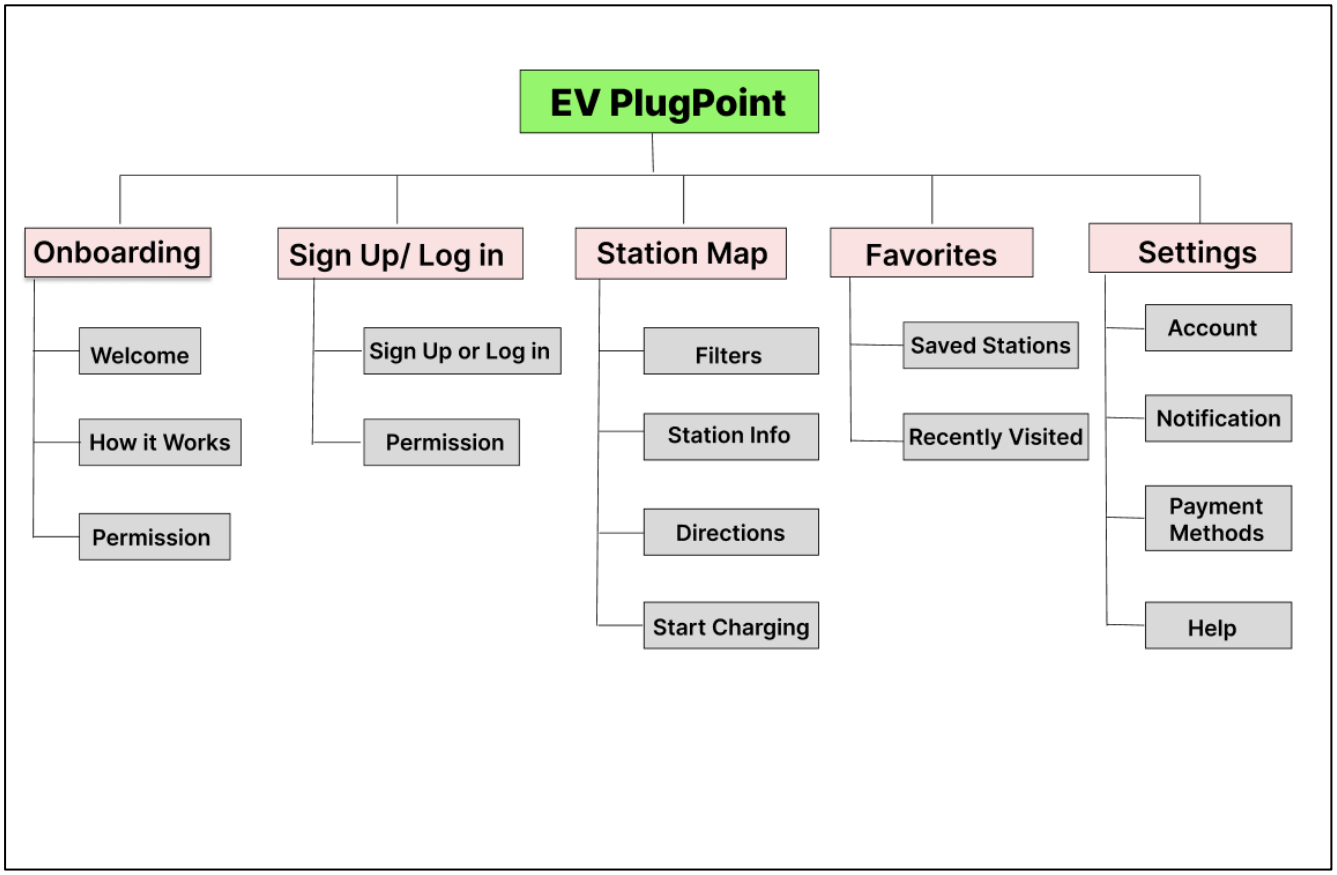
EXPERIMENT NO.9

Q. Create Mind Map/ Site Map.

Link: https://www.figma.com/design/8Jl3wG4api4bVyjll5y2Sn/EV-PlugPoint-Site-Map?node-id=0-1&p=f&t=AFO9vTfF0r6RRHap-0





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EXPERIMENT NO.10

Q. Create Wireframing:

Link:
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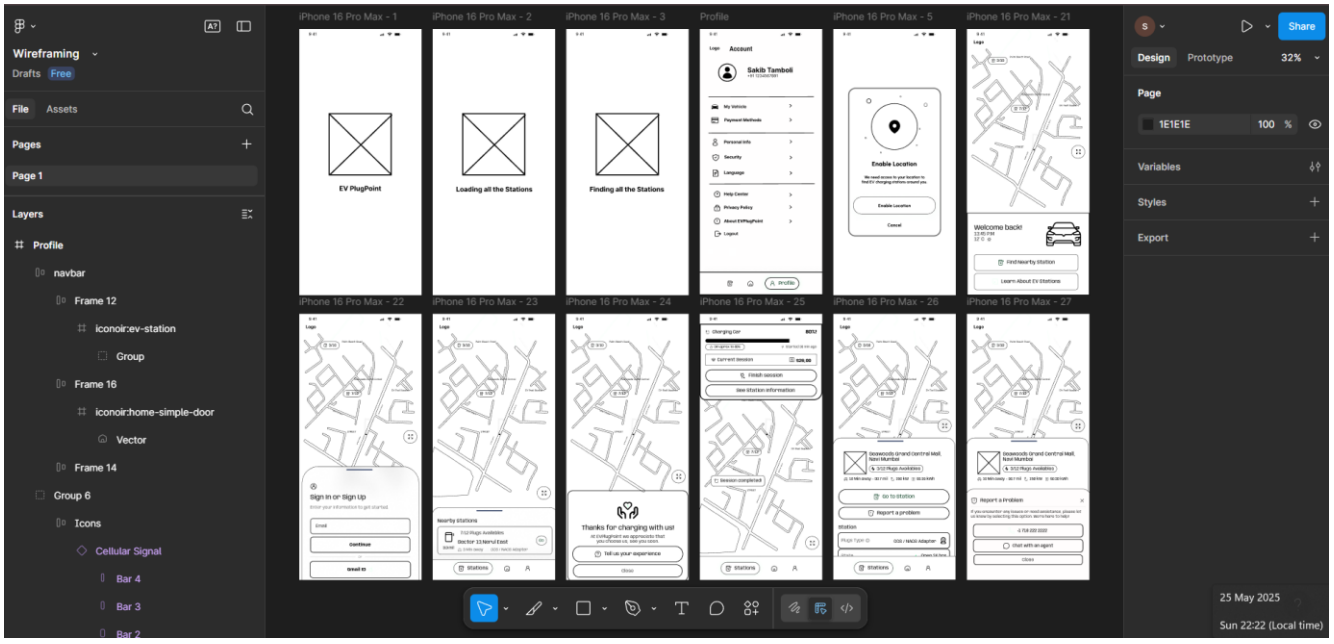

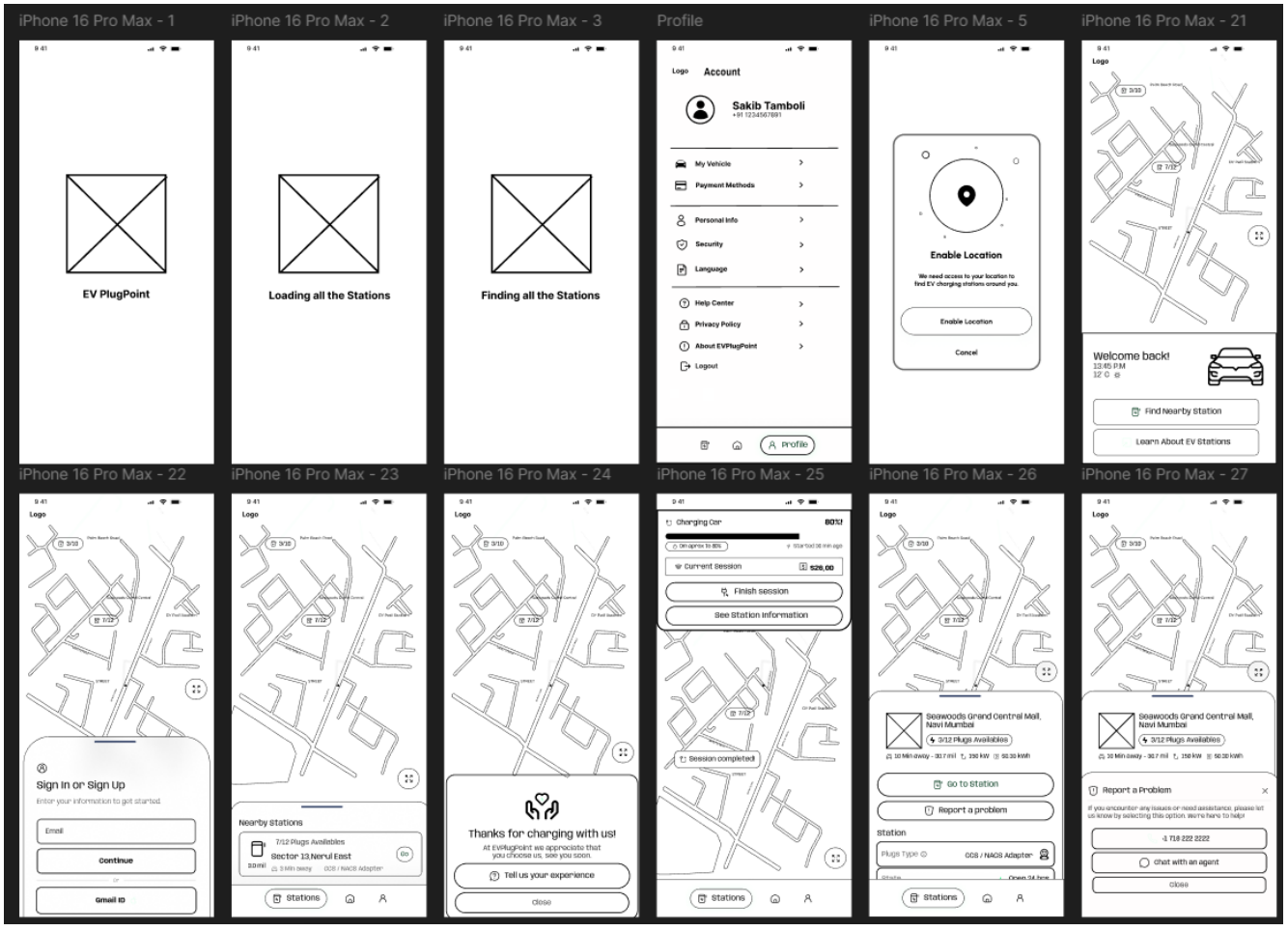

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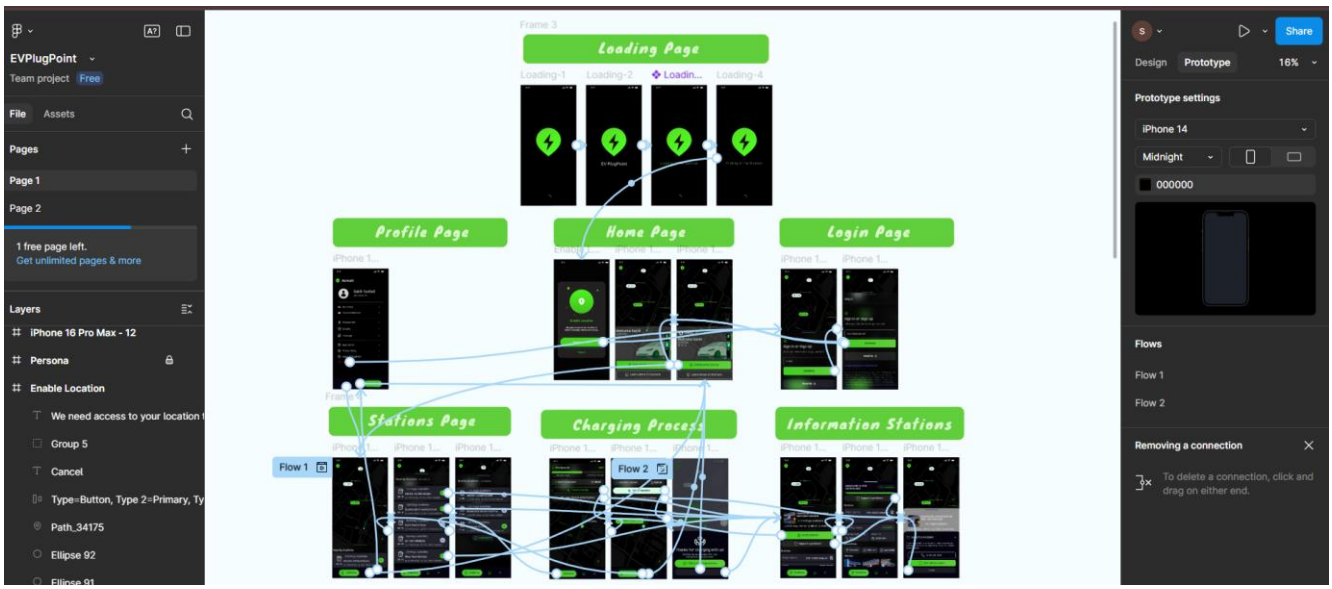
EXPERIMENT NO.11

Q. Create Prototyping:

Link:

https://www.figma.com/design/3Pj4Z6tDtN8dQSFdbOkXhA/EVPlugPoint?node-id=0-1&p=f&t=tkXvgYjjAud9EJKp-0



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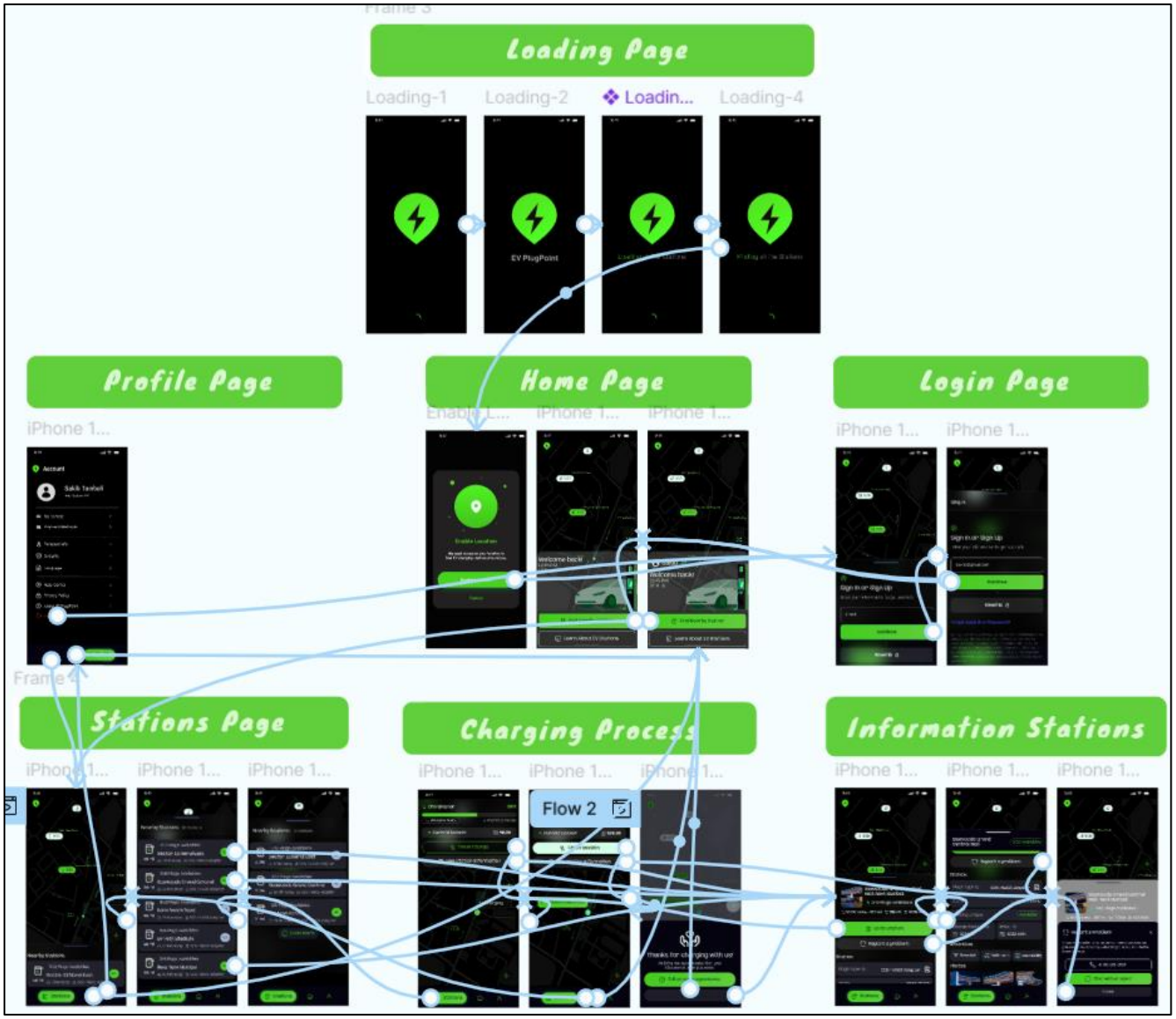

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EXPERIMENT NO. - 12

Q. Usability Evaluation of the Design. Testing of User Interface from third party (Test scripts).

Testing is the process of executing a program to find errors. To make our software perform Well, it should be error-free. If testing is done successfully, it will remove all the errors from the system.

Types of Testing:

1. **Unit Testing:**
   It focuses on the smallest unit of software design. In this,we test an individual unit or group of inter related units. It is often done by the programmer by using sample input and observing its corresponding outputs.
2. **Integration Testing:**
   Theobjectiveistotakeunit-testedcomponentsandbuildaprogramstructurethat has been dictated by design. Integration testing is testing in which a group of components is combined to produce output.
3. **Regression Testing:**
   Every time a new module is added leads to changes in the program. This type of testing makes sure that the whole component works properly even after adding components to the complete program.
4. **Smoke Testing:**
   Thistestisdonetomakesurethatthesoftwareundertestingisreadyorstablefor further testing. It is called a smoke test as the testing of an initial pass is done to check if it did not catch the fire or smoke in the initial switch on.
5. **Alpha Testing:**
   This is a type of validation testing. It is a type of *acceptance testing* which is done before the product is released to customers. It is typically done by QA people.

6. **Beta Testing:**

The beta test is conducted at one or more customer sites by the end-user of the software. This version is released for a limited number of users for testing in a real time environment

7. **System Testing:**

This software is tested such that it works fine for the different operating systems. It is covered under the black box testing technique. In this, we just focus on the required input and output without focusing on internal working.

8. **Stress Testing:**

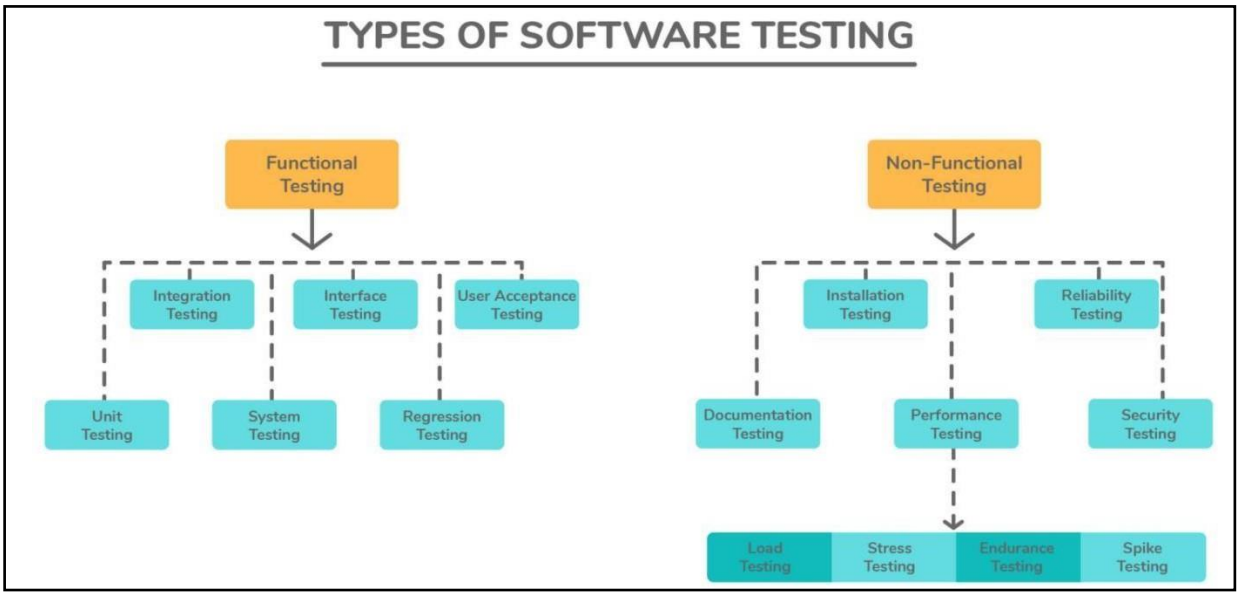
In this, we give unfavorable conditions to the system and check how they perform in those conditions.

9. **Performance Testing:**

It is designed to test the run-time performance of software within the context of an integrated system.

10. **Acceptance Testing:**

Acceptance testing is done by the customers to check whether the delivered products perform the desired tasks or not, as stated in requirements.



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EVPlugPoint Testing:

Sr.no	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Launch Application	Click on software	Login page	Login page	Pass	Successful
2	Enter Correct Username and Password	Username: abc Password: ***	Home Page	Home Page	Pass	Homepage will Display
3	If username and password are incorrect	Username: abc Password: ***	“Login failed”	“Login Failed”	Pass	Invalid Username and password
4	If email I snot in correct format	Enter email in correct format	“Invalid Email”	“Invalid Email”	Fail	Unsuccessful
5	If email is in correct format	Enter Email Id	No error message	No error message	Pass	Successful
6	If entered Name is in number format	Enter Name in correct format	“Invalid Name”	“Invalid Name”	Pass	Successful
7	If Entered Name in Character format	Enter customer name	No error Message	No error Message	Pass	Successful
8	If Entered Mobile number is character Format	Enter Mobile number in correct format	“Invalid Number”	“Invalid Number”	Fail	Unsuccessful
9	If Entered Mobile number in number format	Enter Mobile number	No error message	No error Message	Pass	Successful

10	If entered Username sin character format.	Enter correct Username Id	"Invalid Id"	"Invalid ID"	Pass	Successful
11	If Entered Username is in Number format	Enter Username Id	No error message	No error message	Pass	Successful
12	If Entered Detail is Correct	Username: abc Password: ***	Access To app	Homepage will Display	Pass	Successful
13	If Entered Detail is Incorrect	Username: abc Password: ***	Access Denied	Entered Password or Username is incorrect	Homepage will not be Displayed	successful
14	If User sign up with valid data	Leaving all the fields blank	Displays warning message of fields cannot be blank	Pass	Pass	Successful
15	If User sign up with valid data	Leaving minimum one field blank	Displays warning message of fields cannot be blank	Pass	Pass	Successful
16	New User signing up with valid data	Entering the Details of existing user.	Displays Username or email already exists	Username or email already exists	Pass	Successful
17	Menu Button on Top left	Clicks on Menu button.	Menu should slide in from left of screen.	Displays menu from left of screen.	Pass	Successful
18	Find a Ride Button	Clicks on Find a Ride Button	Should Display the main page where user selects the ride.	Displays the page where user selects the ride.	Pass	Successful

19	Send Request Button	Clicks on send request button.	Request should be sent.	Displays the message Request sent	Pass	Successful
20	Home Button at the Bottom Left	Clicks on Home Button.	Takes back to Home page where user selects the one of two options to find a ride or passenger	Takes back to Home Page.	Pass	Successful