Stage 1

1. **Project Title:** The EV Roadmap
2. **Project Summary:**
    a. The scope of our project is to include information for a prospective EV owner or a current EV owner to see information on different aspects such as new vehicles, maintenance within their area, chargers within their area, planning a road trip to make sure there are chargers along the way.

3. **Describe what data is stored in the database. (Where is the data from, what attributes and information would be stored?)**
    a. Some of the data that will be stored in the database include available Electric Vehicles in the market, such as Make, Model, Range, Prive, Cargo Space, Prospective 5 year cost, and Expected battery Life. There will be separate tables for other portions of data that include: vehicles coming in the future (less than 1 year away), location of chargers (different charger brands, KW power, and connection types), location of mechanic shops that service electric vehicles, and different chargers that can be install at home (make, model, price, charging capacity, reviews).
    Majority of this information will be gathered from existing websites/database locations, such as charger locations. Other information may need to be acquired manually and inserted once into the tables.

4. **What are the basic functions of your web application? (What can users of this website do? Which simple and complex features are there?)**
    a. Some of the basic functions on the web application would be to navigate through the different menus, such as a navigation bar. Using a navigation bar would get flexibility to move through the aspects of the website depending on what the user is looking for. Some other basic functions would be the ability to filter through different options, such as car specific or charger specific; being able to view on their website or mobile browser as well would give the user the ability to look it up instantly if they are traveling or away from a computer. They will be able to also save their lookup information (such as search history, saved cars and mechanics, and other stuff) that is attached to their login information.

5. **What would be a good creative component (function) that can improve the functionality of your application? (What is something cool that you want to include? How are you planning to achieve it?)**
    a. One aspect that we want to include is adding a calculator that estimates the cost/savings going from an ICE vehicle to an EV. This would help the user understand the difference between driving the vehicles even though they may seem similar.
    Another aspect that we want to include is testimonials based on the car. For example, if someone is looking for a Polestar 2, we would include reviews that are associated with a Polestar 2 for the user/prospective customer to view. We would add this filtering based on car and even model year to make it easier since year to year the cars may be different.

6. **Description of an application of your choice. State as clearly as possible what you want to do. What problem do you want to solve, etc.?**
    a. The problem we want to solve is to make sure that someone is making an informed decision on their electric vehicle, such as road tripping or purchasing a new one. We want to provide as much information to the user so they don't have any doubts and have a smooth process with buying and owning an electric vehicle.
    We want to reduce the anxiety that drivers have with Electric Vehicles because of the ability to "fill up" quickly. They may be used to going to the gas station down the street to fill up whenever they want and think with EVs they will be limited but that won't be the case with providing them the correct information.

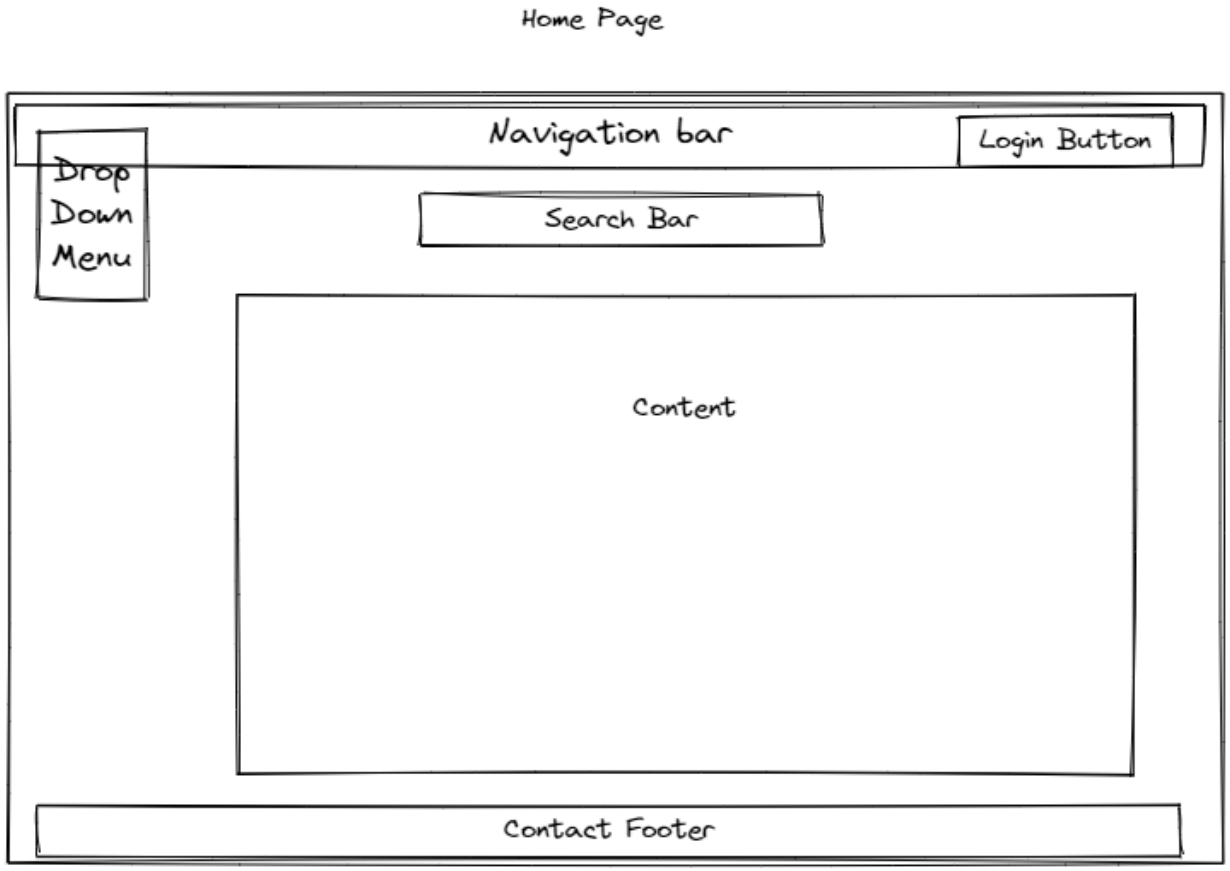
7. **Usefulness. Explain as clearly as possible why your chosen application is useful. Make sure to answer the following questions: Are there any similar websites/applications out there? If so, what are they, and how is yours different?**
    a. This would be a useful application since the world is changing and electric vehicles are starting to become mainstream. A lot of people are buying their first electric vehicle and they don't have as much knowledge with the different aspects of it and just pick the first one they see. There are some similar websites out there but they just have their own set functionality. For example, there may be one website that just lists cars and their information or there may be a website that shows chargers in the area.

There isn't a website that has all of this information combined in one location.

8. **Realness. Describe what your data is and where you will get it.**
    a. Some of the data is charging locations so to gather that data, we will go ahead and extract it from the US Department of Energy Website since they have APIs that we can use for our development. We could also pull the information found on the SuperCharger Network(Tesla), Electrify America, or even PlugShare.
    For a list of all cars that are available, we will go ahead and extract it from the Electric Vehicle Database. This location has all the available EVs in the market and coming soon vehicles as well.

9. **Description of the functionality that your website offers.**
    a. The user will go ahead and navigate to the main page and they will see just some news on Electric vehicles. They will have an option to login/create an account so that they can store their information and search history for whatever they are searching for. That button will be on the top right hand side of the screen. On the top left hand side of the screen, they will be able to navigate the drop down menu where they are able to select EV vehicles, chargers in their area, etc. When they have selected their option it will go ahead and navigate them to a subpage where they can view that information that they requested and even be able to favorite some of the information such as a home charger or a specific vehicle or even a news article.

10. **A low fidelity UI mockup**:



11. **Project work distribution**
    a. Collectively we will work on creating the Database Design for Stage 2
    b. For Stages 3 & 4 we will be working together to make sure that the database is working properly and that there are no issues with it
    c. Below is the work for Stage 5. This is where we add the front end component to the back end component and make sure that it operates smoothly.
    d. Francisco - Front End
        i. Make sure content is loaded correctly on the front end and making sure that APIs communicate smoothly with the back end
        ii. Improve latency and security of the website (possibly host on AWS or some other cloud platform)
    e. Jinzhi - Back End
        i. Set up APIs to make sure that data is extracted correctly based on the input from the front end interface
        ii. Adding security benefits to logging in/creating an account

f. Purvansh - Back End
    i. Create database to store the different amount of information
        1. EV Cars
        2. EV Chargers
        3. Mechanics
        4. User Information (Account Creation/Deletion)
g. Akash Kumar - Front End
    i. Creating the structure of the website and the layout based on the discussions and drawings
    ii. Making sure that the website is compatible on desktop and mobile