# EV Bike Recommender App

## Project Purpose

The primary goal of this project is to **recommend electric bikes (EVs)** tailored to a user’s needs using specific input parameters. Unlike traditional auto-portal websites that list vehicle specifications by model, this app takes **user-defined preferences** and computes a **custom rating** to suggest the best bikes available in the market.

## Tools & Technologies Used

* **Python** – Core language for data processing and logic
* **Streamlit** – To build the interactive user interface
* **Pandas** – For data manipulation and rating calculations
* **MySQL Connector** – To fetch EV bike data from a MySQL database
* **Min-Max Scaling** – For normalizing parameters for better comparison
* **.env File** – For storing sensitive database credentials securely

## How It Works:

### User Input:

The app collects the following parameters from the user:  
Price, Charging time, Torque, Range, Top speed, Battery Capacity.

### Scaling the Input:

* **Min-Max Scaling** is applied to normalize the values.
* **Reverse scaling** is used for Price and Charging Time since *lower* values are better for these.

### Database Query:

* EV bike data is stored in a **MySQL database**.
* The app connects to this database using mysql-connector-python.
* Credentials are securely stored in a .env file.

### Bike Rating Logic:

* For each EV bike in the database, a rating is computed based on the similarity to the user’s preferences.
* The top 5 bikes with the **highest rating scores** are recommended.

### Output:

The app displays the **Top 5 recommended bikes** with their key specifications in a user-friendly format.

## Target Audience

This project is ideal for:

* Individuals planning to purchase an electric bike
* EV enthusiasts comparing options
* Anyone looking for data-driven suggestions based on specific needs

## Security Note

Sensitive information like:

* MySQL host
* User credentials
* Port and password

are stored in a **.env file** and not hardcoded, ensuring privacy and best practices for security.

## Future Scope

* **Chat-based Input Interface**  
  Plan to integrate a **chatbot UI** where users can type their preferences in natural language instead of using dropdowns or sliders.
* **Mobile-Friendly Layout**  
  Make the app responsive for mobile browsers.