

## Workflow Overview

### 1) Frontend

- **User Interface:** Design an interface where users follow a guided flow to select their desired product (brand, model, variant).
- **User Input:** User selections are sent to the server as a request.

### 2) Server

- **Request Handling:** Receive the product details (brand, model, variant) from the frontend.
- **Database Query:** Search for the exact product in the database.
- **Response:** Return product details (including price, rating, availability) to the frontend.

### 3) Database

- **Structure:**
  - Columns: Brand, Model, Color, Storage, amazon\_price, amazon\_rating, flipkart\_price, flipkart\_rating, availability, etc.
- **Manual Entry:** Populate the database manually with the list of products.
- **E-commerce Data:** Automatically updated via web scraping.

### 4) Automatic Scraping

- **Dynamic URL Generation:** Construct URLs using brand, model, and variant.
- **Data Extraction:** Scrape the lowest price, rating, and availability from platforms like Amazon and Flipkart.
- **Periodic Updates:** Schedule scraping at regular intervals to keep the database updated.
- **Single Seller Selection:** Implement logic to choose the seller offering the lowest price for the exact product.
- **Out-of-Stock Handling:**
  - Mark products as unavailable if they are out of stock.
  - Update the database accordingly.
  - Inform the frontend to display the out-of-stock status to users.

