Assignment Description

You will build a product listing application that consists of two main parts: a backend API and a frontend interface. The backend will provide product information to the frontend, which should display the products according to the provided design.

Requirements

1. **Backend: Mock API Development**

   ○ Develop a **RESTful API** that serves product data from a given JSON file.

   ○ The product JSON will include the following attributes:

     ■ **name**: The name of the product.

     ■ **popularityScore**: A percentage score representing the popularity of the product.

     ■ **weight:** The weight of each product in grams.

     ■ **images**: Product images (three images for each product, one for each color option).

   ○ **Dynamic Price Calculation**: Price if each product should be calculated based on the following formula:

     ■ **Price = (popularityScore + 1) * weight * goldPrice**

     ■ **Price should be in US dollars**

     ■ **goldPrice:** Gold price is price per gram of pure gold in US Dollars. Gold price should be retrieved from a real time data source of your preference.

2. **Frontend: Product Display**
   ○ Create a simple frontend that displays the list of products using the **provided design**. We will share the product design image.
   ○ The frontend should:
      ■ Fetch the product data from the backend API.
      ■ Display the products in the provided layout.
      ■ Show the product name, price, and other relevant information.
      ■ Color picker which changes the image of the product that is displayed.
      ■ Popularity score: Popularity score of each item should be converted to a score out of 5, with 1 decimal place and displayed as such.
      ■ Carousel: Carousel should move with side arrows as well as swiping (mobile and desktop).
3. **Bonus Feature** (Optional)
   ○ Implement **filtering** in the backend to allow the API to return products based on criteria such as:
      ■ Price range
      ■ Popularity score

Expectations and Guidelines

● You are free to use any technology stack you prefer.

- Use **Git** for version control and provide a link to your repository upon completion. Additionally, please deploy your final submission to a hosting platform (e.g., Heroku, Vercel) and provide a link to the published page.

- The frontend should be visually similar to the provided design as much as possible and should be **responsive** to ensure a good user experience on different devices.