CSE 4181: Mobile Application Development Final: Spring 2024
Total Marks: **30**   Duration: 1 Hour 45 Minutes

Question 1.

3+3+3
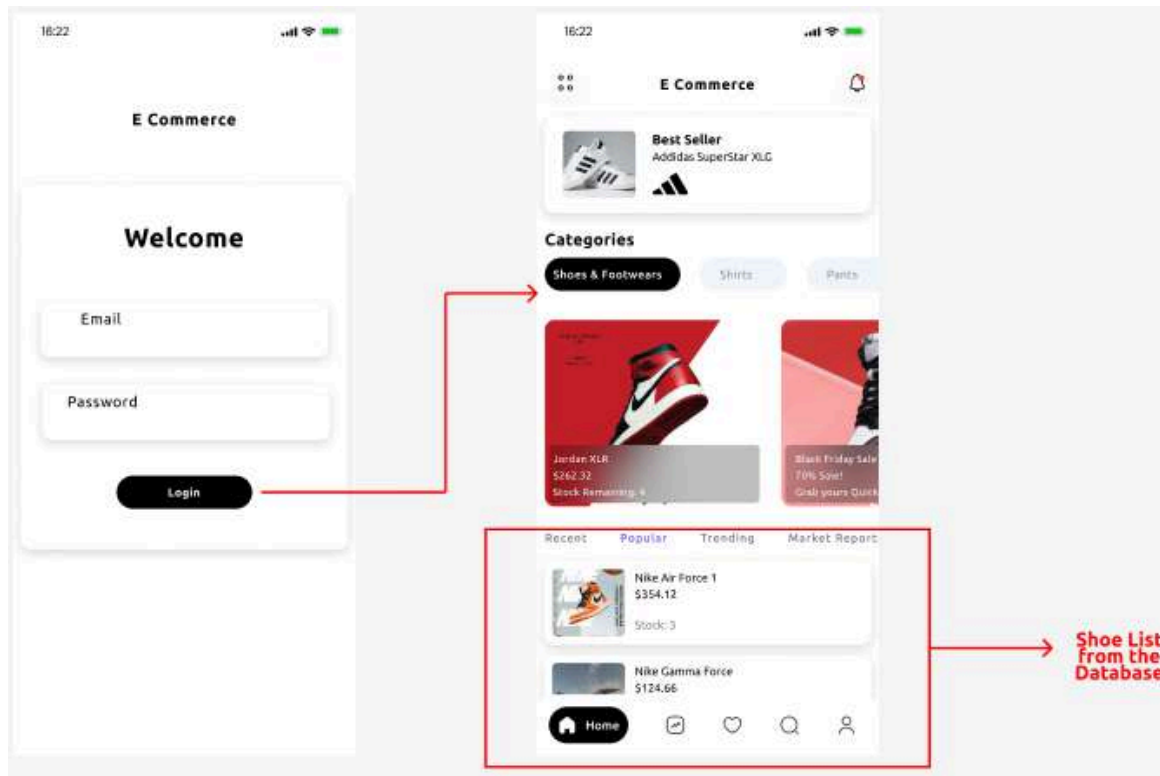
Consider this e-commerce website design where you can call the **left** one **LoginScreen** and the **right** one **LandingScreen** and try to answer the questions below:

a) List down the React-Navigations you can identify from this design. Refer to which section of the given design contains which type of navigation.
b) Which navigation will be the best choice for navigating from **LoginScreen** to **LandingScreen?** Write down the necessary code for that navigation only.
c) Find the elements that can be turned or written into a **Reusable Component.** Design one **Reusable Component** from your list.

Question 2:   **4+4+3**

Now you need to design the serving backend software. For **User** management, you have decided to use a **MySQL** database and for the **Products,** you have contacted the vendors and they gave you an **API** with a base URL: *https://www.braintree.com/*.
Now consider this architecture and answer the following questions:

a) As the API is providing you only the list of products and their respective prices, how will you design the feature **Best Seller** in your application? How will you store that data? In Which project will you call the API? Explain with figures and solutions.
b) Write the necessary function to receive User's data from the user in your backend and save it to your **MySQL** database. Which HTTP method makes more sense in this scenario?
c) Consider the endpoint *"/api/products/{brand-name}"*. Upon passing the brand name, such as Nike, or Adidas, this endpoint provides a JSON with a list of products of that particular brand. To integrate this feature, in which project you should call this API to be safe? Write that code snippet to call this API.

Question 3:   **4+4+2**

Consider that you have hosted your backend software developed in Express JS in a public server. Your backend API can be called via the base URL: *https://www.myecommerce.com/api*.
Now based on your architectural designs in the previous questions, try to answer the following questions.

a) Consider **LoginScreen** and Write the code snippet of the input fields and the **onClick** function handler for the **Login** button? Please note that upon click event, it will send the email and password to your backend software in the endpoint *"/auth"* which only accepts POST.
b) Upon **Successful Login** , the user will be navigated to **LandingScreen.** Which hook will be necessary to fetch the products in the **LandingScreen** so that the user can see the **Best Seller** and products already rendered in the **LandingScreen?** Write down the code snippet of that particular hook which calls your backend APIs to fetch the products.
c) Write down 4 distinguishing features that distinguish **TypeScript** from **JavaScript.**