

Mobile Application Design and Development Assignment

Problem Statement:

You are tasked with designing and developing a mobile application for a local coffee shop. The application will serve customers by allowing them to order coffee and other beverages, track their loyalty rewards, and view promotions. The coffee shop also wants to gather customer feedback to improve its offerings.

Requirements:

1. User Accounts and Authentication:

- Users should be able to create an account, log in, and log out.
- Users should be able to reset their password via email or SMS.

2. Menu Display:

- The app should display a list of available beverages, including prices and descriptions.
- Users should be able to filter drinks based on type (e.g., hot, cold, espresso-based, non-espresso, etc.).

3. Order Management:

- Users can select drinks, customize them (e.g., size, milk, extra shots), and add them to their cart.
- The app should allow users to view the contents of their cart and proceed to checkout.
- Users can choose to pay via credit card, mobile wallets, or in-person.

4. Loyalty Program:

- Users should earn points for every purchase, and the app should display their current point balance.
- When users reach certain point thresholds, they can redeem rewards (e.g., free drink, discount).

5. Feedback and Rating System:

- After receiving their order, users can leave feedback and rate the service or product.
- The app should show the average rating for drinks and allow users to see individual reviews.

6. Promotions and Notifications:

- The app should allow users to view current promotions (e.g., discounts, happy hour specials).
- Users should receive push notifications for special offers, new menu items, and reminders about rewards.

7. Admin Panel (Optional):

- An admin interface should be provided to manage the menu, promotions, view customer feedback, and track orders.

Bonus Features:

- **Geolocation Services:** The app could show nearby locations or allow users to track their order in real-time.
- **Social Sharing:** Allow users to share their favorite drinks or promotions on social media.
- **Integration with a Delivery Service:** Provide users with the option to have their order delivered.

Questions to Answer:

1. What would the architecture of your mobile application look like? How would you structure the back-end and front-end components?
2. How would you ensure the security of user data, especially during transactions and account creation?
3. Describe the process flow of placing an order in the app. What are the major screens, and what key interactions do you envision?
4. How would you handle user authentication and authorization in the app?
5. If you were to develop this app for both iOS and Android, what tools and frameworks would you use, and why?
6. Discuss how you would test the app to ensure usability and functionality, and what kind of testing would you prioritize (unit tests, integration tests, user testing, etc.)?