Mobile A

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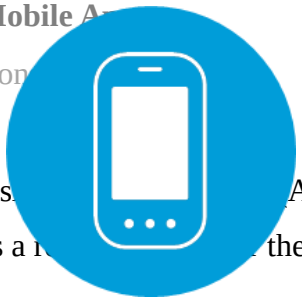


Us Android or iOS, however preference is on iOS) you have developed (or are developing) as a i the following questions in relation to the Mobile Apps.

Mobile Apps Consideration (Pages 10-12)

1. Provide a brief description of the Mobile App you developed (or, are developing). Please include the name of the App and where it can currently be accessed from (if publicly accessible/operational)

- **App Name:** Gimmys Foodie
- **Description:** Gimmys Foodie is a mobile application designed to help users discover and explore restaurants in their area. Users can search for restaurants by cuisine, location, price range, and user reviews. The app displays detailed information about each restaurant, including menus, photos, ratings, and contact information. Users can also save their favorite restaurants, write reviews, and share their experiences with friends.
- **Accessibility:** This demo app is currently under development and not publicly accessible.

2. What challenges is a developer likely to encounter during the development for:

a. Android devices?

- **Fragmentation:** Android devices come in various sizes, resolutions, and have different versions of the Android OS. Ensuring compatibility and performance across all these devices is a significant challenge.
- **Android SDK:** The Android SDK can be complex, requiring a good understanding of Java or Kotlin to utilize its features effectively.
- **Security:** Android's open-source nature makes it more susceptible to security vulnerabilities. Developers need to incorporate robust security measures.

b. iOS devices?

- **Apple's Strict Guidelines:** Apple's App Store has strict guidelines for app development and submission, demanding adherence to their policies and design principles.
- **Swift Language:** While powerful, Swift can have a steeper learning curve compared to other languages.
- **Closed Ecosystem:** Apple's closed ecosystem limits access to certain device functionalities and makes integrating third-party services challenging.

3. Did you develop your app as a native, web or hybrid application?

Native: This demo app was developed as a native Android application using Java and the Android SDK.

4. What guided your decision to develop your app as native, web or hybrid in "2" above?

- **Performance:** For a food app with features like map integration, offline functionality (for restaurant menus), and potential location tracking, native development offered the best performance.
- **User Experience:** Native apps provide a smoother and more intuitive user experience, allowing for better integration with device features.
- **Target Audience:** As this app targets a broad audience of food enthusiasts, native development was deemed more suitable.

5. What tools, frameworks and, or languages did you use when developing your app in "2" above?

- **Language:** Java
- **Framework:** Android SDK
- **Tools:** Android Studio
- **Libraries:**
- **Retrofit:** For networking and API calls to fetch restaurant data.
- **Picasso or Glide:** For image loading and caching.
- **Google Maps Android API:** For map integration and location services.
- **Room Persistence Library:** (Optional) For local database storage (e.g., for storing user favorites).

6. What are your thoughts on the use of Flutter or React Native Frameworks as opposed to the use of Native code like Swift , Java or Kotlin?

Advantages of Flutter/React Native:

- **Cross-Platform Development:** Offers faster development and code reuse across platforms.
- **Hot Reload:** Enables quick changes and testing.

Disadvantages of Flutter/React Native:

- **Performance:** May not match the performance of native apps for complex apps.
- **Limited Device Feature Access:** Might not provide access to all device functionalities.
- **Community Support:** Native languages have larger and more established communities, offering more resources and solutions.

7. What are 4 of the most valuable lessons you have learned during the testing of your mobile app(s)?

- **Lesson 1:** Early and continuous testing is crucial for finding and fixing bugs before deployment.
- **Lesson 2:** User feedback is essential for improving app usability and functionality.
- **Lesson 3:** Optimization for performance is crucial for a smooth user experience, especially with features like maps and image loading.
- **Lesson 4:** Security is vital to protect user data, particularly for an app handling user information and location data.

8. In Android development why would you choose Kotlin over Java?

- **Conciseness:** Kotlin is more concise than Java, leading to cleaner and more readable code.
- **Null Safety:** Kotlin's built-in null safety helps prevent null pointer exceptions, a common source of errors.
- **Modern Features:** Kotlin offers modern language features like coroutines, extension functions, and data classes, enhancing code efficiency.
- **Interoperability:** Kotlin is fully interoperable with Java, allowing developers to use existing Java libraries.

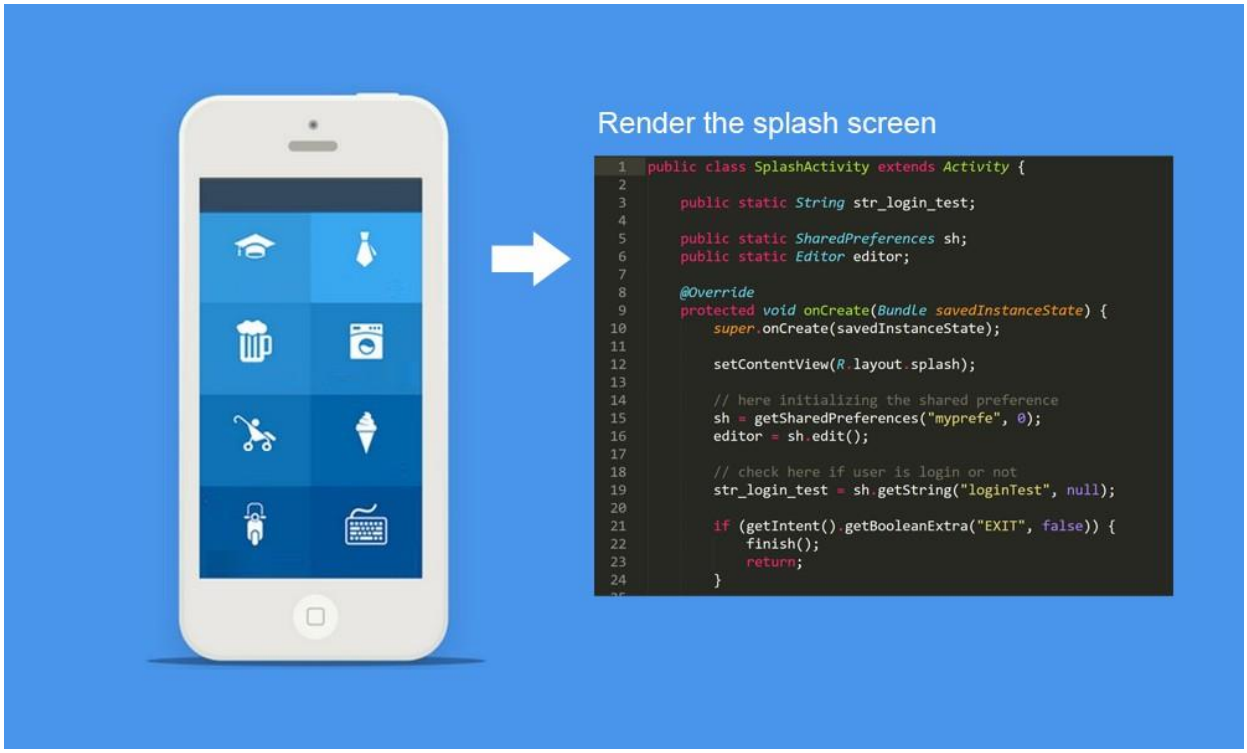
9. Between MVP and MVVM android patterns, which pattern would you prefer and why?

MVVM (Model-View-ViewModel): MVVM is preferred for this app due to its flexibility, simplified data binding, and support for unit testing. It allows for cleaner separation of concerns and better maintainability.

10. What steps did you undertake when performing sanity tests on your mobile app in "2" above?

- **Step 1:** Verify app installation and launch.
- **Step 2:** Test the basic navigation (home screen, search, restaurant details).
- **Step 3:** Check for UI issues (broken layouts, incorrect text).
- **Step 4:** Verify data persistence and retrieval (storing favorite restaurants).
- **Step 5:** Test network connectivity and API calls (fetching restaurant data).
- **Step 6:** Test map integration and location services.

1. Provide at least 3 sample screenshots from your mobile app in “2” above, and for each screenshot, provide a brief explanation on what the interface does and a snippet of the code. Consider the illustration below as a guide.



The foll tables exist in a simple MySQL database

Table Name: FamilyMembers

id	FirstName	LastName	Gender	DateOfBirth
1	Martin	Muwanguzi	Male	1975-08-10
2	Sandra	Muwanguzi	Female	1981-02-11
3	Samantha	Muwanguzi	Female	2004-01-12
4	Tony	Muwanguzi	Male	2006-03-17
5	Timothy	Muwanguzi	Male	2008-03-19
6	Catherine	Muwanguzi	Female	2010-05-21
7	Cynthia	Muwanguzi	Female	2014-09-10

Table Name: PreferredMovies

id	userID	PreferredMovie	TypeOfMovie
1	1	Kingsman	Action
2	1	The Lego Movie	Animation
3	1	Batman vs Superman	Action
4	2	Flatliners	Thriller
5	2	Battle of the Sexes	Drama
6	2	Mother	Drama
7	2	American Made	Drama
8	2	Wonder Woman	Action

9	3	The Lego Movie	Animation
10	3	Beauty and the Beast	Animation
11	4	Kingsman	Action
12	5	The Lego Movie	Animation

13	5	Batman vs Superman	Action
14	5	Guardians of the Galaxy	Action
15	6	Mother	Drama

Hints:

1. userID in table PreferredMovies = id in table FamilyMembers
2. Each of the questions below require only one SQL query.
3. The query (in "2" above) may include a nested query, use joins etc.

Assignment: Write SQL queries to return the following:

1. Which movie is preferred by **most** of the family members

   The Lego Movie
2. Which movie type (TypeOfMovie) is the **least** preferred within the family

   Thriller
3. Top 2 popular movie types by family members older than 10 years

   Action and Animation
4. Top 2 popular movie types by female family members

   Drama and Animation
5. Family members with no preferred movies

   Cynthia Muwanguzi