

Mobile Application Development Model Paper - 01

2 Marks (PART-A)

1. What is Web APP & Mobile APP?

Ans: * Web APP: A Web APP or Web Application is a Software program that runs on a web server & is accessed through a web browser over internet.

* Mobile APP: A Mobile APP or Mobile Application is a Software application designed to run on mobile devices such as smartphones & tables.

2. Define Activity?

Ans An Activity in Android is a single screen with a user interface where users can interact. It represents a window in an application that displays the UI elements.

3. What is contextual action bar?

Ans A Contextual action bar is like a dynamic toolbar that appears at the top of the screen when a user performs certain actions.

(2)

4. What is Content Provider?

Ans: It is like a data Management Component that allows apps to securely share data with other apps. It serves as a bridge between apps & data sources.

5. What is Android Studio?

Ans Android Studio is the official Integrated Development Environment [IDE] for Android app development. It serves as a comprehensive platform for designing, coding, testing & debugging Android application.

6. What are the types of layouts in UI?

Ans ① Linear layout

② Relative layout

③ Constraint layout

④ Frame layout

⑤ Table layout

⑥ ScrollView.

* 5 Marks (PART-B)

7. Discuss Option menu & Context menu?

Ans * Option Menu:

This Menu appears when the user presses the menu button on their device or taps the three dots in the app's action bar.

* Features of Option Menu:

1. Visibility:

It typically accessed by tapping the menu icon or the physical menu button on older devices.

2. Icon Support:

Menu items in the options Menu can help users quickly identify & select the desired action.

3. Overflow Menu:

In this case the OM has more items than it can fit on screen, an overflow menu icon appears.

⇒ * Context Menu:

This Menu appears when the user performs a long-click on a view. It provides contextual actions related to the selected view.

* Features of Context Menu:

① Contextual Actions:

It displays actions that are specific to the items or view that triggered the menu.

2. Trigger Mechanism:

It is typically triggered by a long-press or hold gesture on an item or view.

(4)

③ Dynamic Content:

It can change based on the type of item selected or the context in which the menu is triggered.

8. Explain Key Mobile application Services?

Ans MA offers a wide range of services to enhance user experience & functionality. There are several key services of mobile applications, some of them are:

① Push Notification:

These are essential for engaging users & delivering timely information. They allow apps to send messages to users even when the app is not actively in use.

② Payment processing:

Payment processing services enable secure in-app purchases, subscriptions & financial transactions.

③ Location Services:

Location services empower apps to provide location-based functionalities such as navigation, geotagging & location-based notification.

④ Social Media Integration:

These Services enable apps to connect with Social platforms, allowing users to share content & interact with their Social Networks.

⑤ Cloud Messaging:

These Services facilitate sending messages & notifications to users across different devices & platforms.

⑥ Voice Recognition:

These Services allow apps to convert spoken language into text, enabling voice commands & voice-activated features.

9. What is JSON & SDK?

Ans: JSON:

- JSON stands for JavaScript Object Notation.
- It is a lightweight data interchange format that is easy for humans to read & write and easy for machines to parse & generate.
- JSON is commonly used to transmit data between server & a mobile app.

* Characteristics of JSON.

① Lightweight:

JSON is text-based & much lighter than XML, making it ideal for transmitting data over internet.

⑥

② Easy to Read & Write:

JSON Syntax is easy to understand & use, making it a popular choice for data interchange.

③ Self-describing:

JSON data is self-descriptive, making it easier to understand & use.

⇒ SDK

- Android SDK Stands for Software Development kit.
- It is a set of tools, libraries & resources provided by Google to develop Android applications.
- It serves as the foundation for Android app development & provides essential components & APIs for building feature-rich apps.

* Features of SDK:

① Development Tools:

It includes compilers, debuggers, & build tools for writing, compiling & debugging Android applications.

② Documentation:

It offers detailed documentation on APIs, best practices & development guidelines for Android App development.

③ Updates & Support:

Regularly updated by Google to incorporate new features, enhancements & compatibility with the latest Android Version.

10. Explain the features of Android OS?

Ans Android OS is developed by Google, offers a wide range of key features & benefits.

Some of the key features are:

① Customizable User Interface:

Android allows users to customize their home screens, widgets, & themes to personalize their experience.

② Google Services Integration:

Android devices are tightly integrated with Google services such as Gmail, Google Maps, Google Drive etc.

③ Multi-Device Support:

Android powers a variety of devices other than smartphones & tablets including Smart Watches, Smart TV etc.

④ Messaging: (SMS & MMS)

Android supports both SMS [Short Message Service] & MMS [Multimedia Message Service] for text & multimedia communication.

⑤ Hardware Support:

Android supports various hardware sensors, including camera, digital compass, GPS etc.

⑥ Tethering:

Android supports tethering, allowing users to share their internet connection via wired [USB] or wireless [WiFi hotspot] methods.

11 Explain View Group?

Ans: • ViewGroup is a special type of View that can contain other Views to organize & manage the layout of UI components.

- It extends the functionality of Views by providing a way to arrange & control the positioning of multiple child Views within single container.

⇒ Features of View Group:

① Layout Management:

ViewGroup is responsible for defining the layout structure of UI by arranging child Views in a specific order & position.

② View Hierarchy:

View Group forms a hierarchical structure where Parent View Groups can contain multiple child Views & even nested View Groups.

③ Positioning & Sizing:

View Group controls the positioning, sizing & alignment of child Views within its boundaries.

④ Event Propagation:

View Group manages the propagation of touch events & input gestures to child Views based on their positions & touch intercepting behavior.

12. Explain Content Provider?

Ans • Content Provider is like a data Management Component that allows apps to securely share data with other apps.

- It serves as a bridge between apps & data sources that need to access & modify that data.

⇒ features of Content Provider:

① Data Encapsulation:

Content Providers encapsulate data & provide a structured interface for interacting with it.

② Data Sharing:

Content Providers enables sharing of data between different parts of an application or even ~~on~~ ^{across} multiple applications.

③ Data Security:

Content Provider enforces data security by regulating access to shared data through permissions.

④ CRUD Operations:

Content Provider supports Create, Read, Update & Delete (CRUD) operations to enable comprehensive data management.

⑤ Inter-process Communication:

Content Provider facilitates inter-process communication by allowing data sharing between d/f applications running in separate processes.

8 Marks (PART - B)

13) Explain types of Intents?

Ans • An Intent in Android is a messaging object that can be used to request an action from another app component, such as activities, Services & broadcast receivers.

Types of Intents:

1. Explicit Intents:

- An Explicit Intent is used to launch a specific app component.
- We use explicit intents when we know the target component's class name.
- This type of intent is particularly useful for invoking internal functionalities or features within the app that are well-defined & known at development stage.

2. Implicit Intent:

- An Implicit intent does not specify the component to start.
- Instead, it declares a general action to perform, which allows a component from another app to handle.
- Implicit intent are used to request functionality from other components on the device without specifying the exact component to be invoked.

14. Explain the Steps of generating apk files?

Ans To generate APK files in Mobile application development involves a few key steps:

① Developing the APP:

First you need to develop your mobile application.

This includes writing codes, designing the user interface & adding any necessary features or functionalities.

② Building the APP:

Once development is complete, you need to build the app.

This step involves compiling codes, resolving errors or bugs & preparing the app for distribution.

③ Generating a Signed APK:

To generate an APK file for distribution, you need to create a Signed APK.

This involves signing the app with digital certificate to ensure its authenticity & integrity.

④ Setting Build Configuration:

Before Generation you may need to configure build settings such as the target device, Version compatibility etc

⑤ Compiling & Packaging:

The next step is to compile the code, package the resources & create final APK file that can be installed on an android devices.

⑥ Testing the APK:

It's essential to test the generated APK to ensure that the app functions correctly & that all features work as expected.

⑦ Distribution:

Finally, once the APK is generated & tested, you can distribute it through various channels such as app stores, websites or direct installation on devices.

15. Explain the role of GPS?

Ans GPS plays a crucial role in mobile Application development, ~~especially~~ especially for location-based services.
 ⇒ How GPS is essential in app development:

① Location Tracking:

GPS allows mobile apps to track the user's location - ~~where~~ ~~wherever~~ accurately in real-time.

② Geotagging:

GPS helps in adding location metadata to Photos, Videos & Social media posts.

③ Location - Based Services:

Apps use GPS to offer location-specific information & services.

Weather apps can provide localized weather forecasts & restaurant apps can suggest nearby dining options.

④ Mapping & Navigation:

GPS enables apps to provide mapping & navigation services. Users can get directions, find nearby points of interest, & plan routes efficiently using GPS data.

⑤ Geofencing:

Developers use GPS to create geofences, virtual boundaries around specific locations.

16. Create an application to send Email?

Ans Refer program 6 from Record.

17. Explain the Step to create, open & close the database cursor.

Ans Here are some ^{steps} typically involved in creating, opening & closing database cursors:

⇒ Creating & Opening a Database Cursor:

① Initialize database helper classes:

Create or obtain a database helper class that extends SQLiteOpenHelper in Android.

② Get Reference to Database

```
// Example in Android using
SQLiteOpenHelper
SQLite Database db =
dbHelper.getReadableDatabase();
```

This instance (db) allows you to perform operations on database.

3. Query Database

Execute the query data using the query() method on the database instance.

⇒ Closing the Database Cursor:

① Close the Cursor properly:

It is essential to close the cursor once you've done using it to free up resources & avoid memory leaks.

Call the close() method on the cursor object when you have finished reading data.

// close the cursor
~~to~~ cursor.close();

18 Explain the procedure to Publish android app.

Ans Publishing an Android app in Mobile application development involves several crucial steps to ensure it is ready for distribution on Google play store

⇒ The Key Steps are:

① Prepare Your App for Release.

Ensure your app meets all the necessary requirements such as functionality, design & performance.

Test your app thoroughly to identify & fix any bugs or issues.

② Generate a Signed APK:

To publish an app on Google play Store, we need to generate a signed APK [Android Package Kit] file. This file is signed with a private key to ensure it comes from a trusted source.

③ Create a Google play Developer Account:

Before Publishing an app on Google Play Store, we need to create an Google ~~store~~ play Developer account. This requires one-time registration fee.

④ Upload an app to Google Play:

- login to Google Play Console
- Click on "Create Application" & fill the details of an app including the title, discription, Screenshots etc
- Upload your APK file.

⑤ Manage your APP:

Monitor user feedback & ratings.
Update your app regularly to improve performance & add new features.