1. What is Android?

   Android is an open-source operating system primarily designed for mobile devices. It is based on the Linux kernel and developed by Google.

2. What programming language is used for Android app development?

   The primary programming language used for Android app development is Java. However, Kotlin has gained popularity and is also officially supported by Google for Android development.

3. What is an Activity in Android?

   An Activity represents a single screen with a user interface in an Android application. It is a fundamental component of the Android application architecture.

4. What is an Intent in Android?

   An Intent is a messaging object used to communicate between components (such as activities, services, and broadcast receivers) in an Android application. It is used to start activities, bind services, and broadcast messages.

5. What is a Fragment in Android?

   A Fragment is a modular section of an activity that has its own lifecycle and user interface. Fragments are used to create flexible and reusable UI components in Android applications.

6. What is the Android Manifest file?

   The Android Manifest file (AndroidManifest.xml) is an essential configuration file in an Android application. It contains information about the application's package, components, permissions, and other metadata.

7. What is the difference between Serializable and Parcelable in Android?

   Serializable and Parcelable are two interfaces in Android used for object serialization. Serializable is a simple mechanism but may impact performance, while Parcelable is a more efficient way to serialize objects, specifically designed for Android.

8. What is the difference between onCreate() and onStart() methods in an Activity?

The onCreate() method is called when the activity is first created, while the onStart() method is called when the activity becomes visible to the user. onCreate() is used for initialization, while onStart() is used for UI updates.

9. What is the Android Support Library?

   The Android Support Library (now replaced by AndroidX) is a collection of libraries that provide backward compatibility and additional features for Android app development. It helps developers target a wider range of devices and Android versions.

10. What is the Android Gradle Plugin?

    The Android Gradle Plugin is a build system plugin for Android app development. It integrates with the Gradle build tool to automate the build process, manage dependencies, and create APKs (Android application packages).

11. What is an AsyncTask in Android?

    An AsyncTask is a convenient class in Android that allows you to perform background operations and update the UI on the main thread. It simplifies handling asynchronous tasks in Android applications.

12. What is a Content Provider in Android?

    A Content Provider is a component in the Android framework that allows data sharing between applications. It provides a standardized interface to access and manipulate data stored in a structured manner.

13. What is the purpose of the ViewHolder pattern in Android?

    The ViewHolder pattern is used in Android RecyclerViews to improve performance and smooth scrolling. It caches references to the views in each item of the list, avoiding frequent findViewById() calls.

14. What is the Android Support Design Library?

    The Android Support Design Library (now replaced by AndroidX) is a library that provides implementation and support for material design components and guidelines.

It includes pre-designed UI elements such as navigation drawers, floating action buttons, and snackbars.

15. What is ADB in Android?

ADB (Android Debug Bridge) is a command-line tool used to communicate with an Android device or emulator. It provides various commands to install apps, debug, and interact with the device's file system.

16. What is the purpose of the res directory in an Android project?

The res directory in an Android project contains various resources used by the application, such as layouts, strings, images, styles, and more. It is an important directory for organizing app resources.

17. What is a Service in Android?

A Service is a component in Android that runs in the background without a user interface. It is used for long-running operations, such as playing music, downloading files, or handling network requests.

18. What is the Android Emulator?

The Android Emulator is a software tool that allows developers to run and test Android applications on a virtual device. It simulates the behavior and characteristics of a real Android device.

19. What is the difference between Serializable and Externalizable in Java?

Serializable and Externalizable are interfaces in Java used for object serialization. Serializable provides a default mechanism for serialization, while Externalizable allows the developer to have more control over the serialization process.

20. What is the Android Resource Naming Convention?

The Android Resource Naming Convention is a set of guidelines to name resources consistently in an Android project. It helps in maintaining a clear and organized structure for resources like layouts, strings, IDs, and more.

21. What is the role of the layout XML file in Android?

The layout XML file in Android defines the structure and appearance of the user interface. It specifies the arrangement of views and their properties, such as size, position, and behavior.

22. What is the purpose of the onCreate() method in an Activity?

The onCreate() method in an Activity is called when the activity is being created. It is used to initialize the activity, set the layout, bind views, and perform other setup tasks.

23. What is the Android Application class?

The Android Application class is a base class for maintaining global application state. It is an optional class that can be extended to perform initialization tasks or maintain shared data across activities and components.

24. What is the difference between View.GONE and View.INVISIBLE in Android?

View.GONE makes the view invisible and also removes the view's space within the layout.

View.INVISIBLE makes the view invisible but keeps its space within the layout.

25. What is the difference between startActivity() and startActivityForResult() in Android?

startActivity() is used to start a new activity in Android. It does not expect a result from the started activity.

startActivityForResult() is used to start a new activity and expects a result back from the started activity.

26. What is the Android Support ConstraintLayout?

The Android Support ConstraintLayout is a flexible layout manager introduced to help create complex layouts with flat view hierarchies. It allows for flexible positioning and sizing of views based on constraints.

27. What is an ANR in Android?

ANR stands for Application Not Responding. It occurs when the main UI thread of an Android application is blocked for too long, resulting in an unresponsive user interface.

It is important to perform time-consuming operations in a background thread to avoid ANRs.

28. What is ProGuard in Android?
ProGuard is a tool used to shrink, optimize, and obfuscate the code in Android applications. It helps reduce the size of the APK and makes it harder to reverse-engineer the code.

29. What is the Android Jetpack library?
Android Jetpack is a set of libraries, tools, and architectural components provided by Google to simplify Android app development. It includes libraries for data binding, navigation, lifecycle management, and more.

30. What is the difference between a BroadcastReceiver and a LocalBroadcastManager in Android?
A BroadcastReceiver is a component that listens for system-wide broadcast messages. LocalBroadcastManager is a helper class that allows you to send and receive broadcast messages within your application only.

31. What is the purpose of the onSaveInstanceState() method in an Activity?
The onSaveInstanceState() method is called before an activity is destroyed, allowing it to save its state data. This data can be restored in the onCreate() or onRestoreInstanceState() methods when the activity is recreated.

32. What is the Android Architecture Components?
Android Architecture Components are a set of libraries and guidelines provided by Google to help build robust, maintainable, and testable Android applications. They include LiveData, ViewModel, Room, and the Navigation component.

33. What is the ViewHolder pattern in Android RecyclerView?
The ViewHolder pattern is used in Android RecyclerViews to improve performance and smooth scrolling. It caches references to the views in each item of the list, avoiding

frequent findViewById() calls.

34. What is the purpose of the onUpgrade() method in SQLiteOpenHelper?

The onUpgrade() method in SQLiteOpenHelper is called when the database version is increased. It allows you to perform necessary database schema changes, data migration, and other upgrade-related tasks.

35. What is the difference between the assets and res directories in Android?

The assets directory is used to store arbitrary files that can be accessed using the AssetManager. The files in this directory retain their original names and directory structure.

The res directory is used to store resources such as layouts, strings, images, and more. The files in this directory are accessed using resource identifiers generated by the Android build system.

36. What is the difference between a service and a thread in Android?

A service is a component that runs in the background without a user interface. It is used for long-running operations.

A thread is a lightweight unit of execution within a process. It is used to perform tasks concurrently within an application.

37. What is the Android Architecture Pattern?

The Android Architecture Pattern refers to the recommended way of structuring and organizing the codebase of an Android application to ensure maintainability, testability, and scalability. Popular architecture patterns include MVC, MVP, MVVM, and Clean Architecture.

38. What is Data Binding in Android?

Data Binding is a feature in Android that allows you to bind UI components directly to data sources, reducing boilerplate code. It enables automatic updates to the UI when the underlying data changes.

39. What is LiveData in Android?

LiveData is a lifecycle-aware data holder class provided by the Android Architecture Components. It holds and emits data to observers, ensuring that UI components observe and update based on the current lifecycle state.

40. What is ViewModel in Android?

ViewModel is a class provided by the Android Architecture Components. It is responsible for holding and managing UI-related data in a lifecycle-conscious manner, surviving configuration changes, and providing data to the UI components.

41. What is Room in Android?

Room is a SQLite object mapping library provided by the Android Architecture Components. It provides an abstraction layer over SQLite, simplifying database operations and allowing you to work with typed Java or Kotlin objects.

42. What is the Android Navigation component?

The Navigation component is part of the Android Jetpack library. It provides a framework for implementing navigation between destinations (fragments or activities) in an Android application, handling backstack management, deep linking, and transitions.

43. What is Dependency Injection in Android?

Dependency Injection is a design pattern in Android that allows you to manage the dependencies of your classes by injecting them from external sources. It helps decouple components, improve testability, and maintainability.

44. What is the Android App Bundle?

The Android App Bundle is a publishing format introduced by Google to generate optimized APKs for different device configurations. It allows developers to reduce APK size, deliver features on-demand, and support dynamic delivery.

45. What is the Android JobScheduler?

The JobScheduler is a system service in Android that allows you to schedule

background tasks or jobs to be executed based on specified conditions, such as network availability or device charging state.

46. What is the difference between Serializable and Parcelable in Android?

Serializable and Parcelable are interfaces in Android used for object serialization. Serializable is a standard Java serialization mechanism, while Parcelable is a more efficient way to serialize objects specifically designed for Android.

47. What is the Android Material Design?

Material Design is a design language developed by Google that provides guidelines for creating visually appealing and intuitive user interfaces. It promotes consistent design principles, animations, and interactions across different Android devices.

48. What is the Android Support Library?

The Android Support Library (now replaced by AndroidX) is a collection of libraries that provide backward compatibility and additional features for Android app development. It helps developers target a wider range of devices and Android versions.

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