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ANDROID INTERVIEW  
QUESTIONS FOR 2022



## “Do you want to pass an android interview and get a job?”

Are you looking to hire an android developer and have no idea what to ask?

Here are the top Android interview questions that is crucial for an android interview to know and how to answer them.

Whether you are going to a junior Android developer interview or a senior Android developer interview, these are the most recent commonly asked interview questions and the appropriate interviewers expected questions that will help you successfully land the job.





**Q1:** Tell me about Android?

**A1:** Android is an open-source, Linux-based operating system used in mobiles, tablets, televisions, etc.

**Q2:** What are the four core android advantages?

**A2:** Open-source: It means no license, distribution and development fee

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**Platform-independent:** It supports Windows, Mac, and Linux platforms

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**Highly optimized Virtual Machine:** Android uses a highly optimized virtual machine for mobile devices, called DVM (Dalvik Virtual Machine).

**Q3:** There are different android versions. So how do you create an app which works in all devices?

**A3:** I'll keep the minimum android SDK version to a lower value as 21, so 99% of the current active devices will be able to run the app.

**Q4:** How do you manage different screen sizes?

**A4:** I'll try to use constraints layout as much as possible. For some cases I'll create the same screen design in 3,4 xml layouts for different sizes.

**Q5:** What are android building blocks?

**A5:** They are activities, views, intents, services, content providers, fragments and AndroidManifest in android.

**Q6:** Define activity in android?

**A6:** Activity is like a frame or window in java that represents GUI. It represents one screen of android.

**Q7:** How many types of intents are there in android?

**A7:** There are two types of intents in android (Implicit intent, Explicit intent ).



**Q8:** What the intent filter

**A8:** It filters out the intents.

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**Q9:** What is the difference between implicit and explicit intent?

**A9:** An explicit intent is where you tell the system which activity or system component it should use to respond to this intent.

Implicit intent allows you to declare the action you want to perform. The android system will then check which components are registered to handle that action.

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**Q10:** What is the difference between Mobile application testing and Mobile testing?

**A10:** Mobile app testing is the testing of application on a device which mainly focuses on functions and features of the application.

And mobile testing is the testing of the actual mobile devices and focuses on mobile features like call, SMS, Contacts, Media player, inbuilt browsers, etc.

**Q11:** What is the APK format?

**A11:** The android packaging key is compressed with classes, UI's, supportive assets and manifest. All files are compressed to a single file called APK.

**Q12:** Tell us about android manifest file?

**A12:** Every application must have an AndroidManifest.xml file (with precisely that name) in its root directory. The manifest file presents essential information about your app to the Android system, information the system must have before it can run any of the app's code.

**Q13:** What could be a content provider in android?

**A13:** A content provider component supplies data from one application to others on request. Such requests are handled by the methods of the Content Resolver class. A content provider can use different ways to store its data and the data can be stored in a database, in files, or even over a network.

## Q14: What is **ADB** in android?

**A14:** It acts as bridge between emulator and IDE, it executes remote shell commands to run application on an emulator.



**Q15:** What is adapter in android?

**A15:** The adapter is used to create child views to represent the parent view items.

**Q16:** What is shared preferences in android?

**A16:** Shared preferences are the simplest mechanism to store the data in Android.

**Q17:** What is AAPT?

**A17:** AAPT is short for Android Asset Packaging Tool. This tool provides developers with the ability to deal with zip-compatible archives, which creating, extracting as well as viewing its contents.

**Q18:** What is an activity Creator used for?

**A18:** An activity Creator is the first step towards the creation of a new Android project. It is made up of a shell script that will be used to create new file system structure necessary for writing codes within the Android IDE.

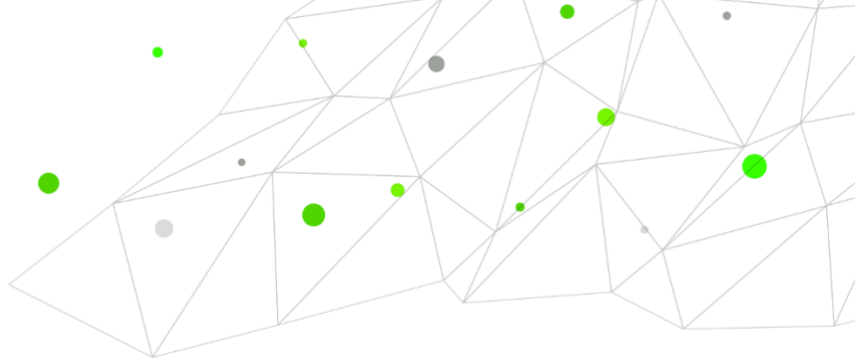
**Q19:** What are the important items in every android projects?

**A19:** These are the essential items that are present each time an Android project is created:

- AndroidManifest.xml
- Build.xml
- Bin/
- Src/
- Res/
- Assets/

**Q20: Is there any use of XML-based layouts?**

**A20:** The use of XML-based layouts provides a consistent and somewhat standard means of setting GUI definition format. In common practice, layout details are placed in XML files while other items are placed in source files.



**Q21:** Tell us about containers?

**A21:** Containers, as the name itself implies, holds objects and widgets together, depending on which specific items are needed and in what particular arrangement that is wanted. Containers may hold labels, fields, buttons, or even child containers, as examples.

**Q22:** Define orientation for me?

**A22:** Orientation, which can be set using `set Orientation ()`, dictates if the Linear Layout is represented as a row or as a column. Values are set as either `HORIZONTAL` or `VERTICAL`.

**Q23:** What is the importance of setting permissions in app development?

**A23:** Permissions allow certain restrictions to be imposed primarily to protect data and code. Without these, codes could be compromised, resulting to defects in functionality.

**Q24:** What is an android framework?

**A24:** An android Framework is an essential part of android architecture. It is a set of APIs that allows developers to write apps.

**Q25:** What is the difference between file, class, and activity in android, Kotlin language?

**A25:**

- **File** is a block of arbitrary information or resources for storing information. It can be any file type.
- **Class** is a compiled from of `.kt` file which Android uses to produce an executable apk.
- **Activity** is the equivalent of a Frame/Window in GUI toolkits. It is not a file or a file type but just a class that can be extended in Android to load UI elements on view.

**Q26:** What is google android SDK?

**A26:** The Google Android SDK is a toolset that provides a developer the API libraries and tools required to build, test, and debug apps for Android in Windows, Mac or Linux.



**Q27:** What is a handler typically used for?

**A27:** You use Handler to communicate between threads, most commonly to pass an action from a background thread to Android's main thread.

**Q28:** What is the difference between onCreate() and onStart()?

**A28:** The onCreate() method is called once during the Activity lifecycle, either when the application starts, or when the Activity has been destroyed and then recreated.

The onStart() method is called whenever the Activity becomes visible to the user.

**Q29:** What data types supported by AIDL?

**A29:** String, List, Map, charSequence and more...

**Q30:** What is AndroidManifest.xml file?

**A30:** AndroidManifest.xml file contains information about the app and provides the same to the android system.

**Q31:** What are the dialog boxes supported in android?

**A31:** Alert Dialog, Progress Dialog, DatePickerDialog, and TimePickerDialog are supported.

**Q32:** What is the difference between a fragment and an activity?

**A32:** An activity is a single focused operation that a user can perform such as (dial a number, take a picture, send an email and ...)

A fragment is a modular section of an activity with its own lifecycle and input events, and which can be added or removed as well.

**Q33:** What are "sensors" in android?

**A33:** Android-based devices have a collection of built-in sensors in them, which measure certain parameters like motion, orientation, and many more through their high accuracy.

**Q34:** What are the troubleshooting techniques you can follow if an application is crashing frequently?

**A34:** Compatibility check and Memory management can be used in such a cases.

**Q35:** Name some launch modes in android?

**A35:** They are Standard, Single Top, Single Task, single Instance.



**Q36:** What does dalvik do in android development?

**A36:** Dalvik serves as a virtual machine, and it is responsible for running every Android application. Because of Dalvik, a device will have the ability to execute multiple instances of virtual machines efficiently through better memory management.



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## Q37: What is a thread pool?

**A37:** Thread Pool consists of a task queue and a group of worker threads, which allows it to run multiple parallel instances of a task.

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**Q38:** What is a buildtype in gradle?

**A38:** Build types define properties that Gradle uses when building and packaging your Android app.

**Q39:** What is the difference between ListView and RecyclerView?

**A39:** There are many differences between ListView and RecyclerView, but the Android developer should be aware of the following in particular:

- The ViewHolder pattern is entirely optional in ListView, but it's baked into RecyclerView.
- ListView only supports vertical scrolling, but RecyclerView isn't limited to vertically scrolling lists.



## Q40: What storages are available in android?

**A40:** Shared Preferences, Internal Storage, External Storage, SQLite Databases, and Network connection





## Q41: What is a Sticky intent in Android

**A41:** Is an intent which allows the communication between a function and a service.

## Q42: How translation happens in Android

**A42:** Android uses Google translator to translate data from one language into another language and placed as a string while development.

## Q43: What is a web view in Android

**A43:** It is an UI component that can display either remote web-pages or static HTML.

**Q44:** How android tracks the application process?

**A44:** It provides a Unique ID to all applications called Linux ID, this ID is used to track each application.

**Q45:** Can the application name be changed after its deployment?

**A45:** Yes we can, but it's not recommended. As if we do so it will impact all other internal components

**Q46:** Define singleton class?

**A46:** A class which can create only an object, that object can be shared between all other classes.

**Q47:** Define sleep mode in android?

**A47:** When the CPU is sleeping and it doesn't accept any command from android devices except radio interface layer and alarm.



**Q48:** Why android developers moved from java to Kotlin?

**A48:** For some reasons:



1: Android is now Kotlin first, that means Google is now writing APIs in Kotlin. They are taking advantage of error free and concise approach and they want us to do the same.

2: Kotlin is modern language.

- It is **concise**: Drastically reduce the amount of boilerplate code.
- It is **safe**: Avoid entire classes of errors such as null pointer exceptions.
- It is **interoperable**: Leverage existing libraries for the JVM and Android.

3: Kotlin is the future As Google is emphasizing on learning Kotlin, there is no doubt that Kotlin is the future of Android Application Development.

**Q49:** What are abstract activities?

**A49:** An activity without any user interface is and abstract activity.

**Q50:** Is it possible to create an activity without any user interface?

**A50:** Yes, that activity is called abstract activity.

**Q51:** What is a broadcast receiver?

**A51:** The broadcast receiver communicates with the operation system messages such as "check whether an internet connection is available," what the battery level should be, etc.



**Q52:** What is MOKI-mvvm library?

**A52:** This is a Kotlin Multiplatform library that provides architecture components of Model-View-ViewModel for UI applications.

**Q53:** When is the onStop() method invoked?

**A53:** A call to onStop method happens when an activity is no longer visible to the user.

**Q54:** What is the difference between RecyclerView() and TableView() and what are they used for?

**A54:** RecyclerView() is used for Android and TableView() is used for Ios to display a list of data.

**Q55:** What is Retrofit in Android ?

**A55:** Retrofit is a type-safe REST client for Android, Java and Kotlin developed by Square. The library provides a powerful framework for authenticating and interacting with APIs and sending network requests with OKHttp.

**Q56:** What is dagger in android?

**A56:** Dagger is a fully static, compile-time dependency injection framework for Java, Kotlin, and Android. It is an adaptation of an earlier version created by Square and now maintained by Google.

**Q57:** How do you remove Icons and widgets from the main screen of the android device?

**A57:** To remove an icon or shortcut, press and hold that icon. You then drag it downwards to the lower part of the screen where a remove button appears.

**Q58:** What are the composers of a typical android application project ?

**A58:** A project under Android development, upon compilation, becomes an .apk file. This apk file format is actually made up of the AndroidManifest.xml file, application code, resource files, and other related files.

**Q59:** What is a portable wi-fi hotspot ?

**A59:** Portable Wi-Fi Hotspot allows you to share your mobile internet connection to other wireless device. For example, using your Android-powered phone as a Wi-Fi Hotspot, you can use your laptop to connect to the Internet using that access point.

**Q60:** What is an action ?

**A60:** In Android development, an action is what the intent sender wants to do or expected to get as a response. Most application functionality is based on the intended action.

**Q61:** How to update UI from a service in Android?

**A61:** Use a dynamic broadcast receiver in the activity, and send a broadcast from the service. Once the dynamic receiver is triggered update UI from that receiver.

**Q62:** What are the application widget in android?

**A62:** App widgets are miniature application view that can embedded in other applications (such as the home screen) and receive periodic updates. These views has referred to as widgets in the user interface, and you can publish one with an app widget provider.

**Q63:** How to find view element into the program?

**A63:** Using with findViewById we can find view element.

**Q64:** Define drawable folder?

**A64:** A compiled visual resource that can used as a backgrounds, banners, Icons, splash screen etc.

**Q65:** Name the types of flags to run an application in android?

**A65:**FLAG\_ACTIVITY\_NEW\_TASK

FLAG\_ACTIVITY\_CLEAR\_TOP.

**Q67 :** What is the difference between a regular bitmap and a nine-patch image?

**A67:** A nine-patch image, unlike bitmap, can be resized and used as background or other image sizes for the target device. The Nine-patch refers to the way you can resize the image: 4 corners that are unscaled, 4 edges that are scaled in 1 axis, and the middle one that can be scaled into both axes. This is what differentiates a nine-patch image from a regular bitmap.

## **Q68: How is content provider implemented?**

**A68:** It is implemented as a subclass of **Content Provider** class and must implement a standard set of APIs that enable other applications to perform transactions.

## Q69: What is the significance of the .dex files in Kotlin?

**A69:**

- Android programs are compiled into '.dex' (Dalvik Executable) files, which are zipped into a single .apk file on the device.
- '.dex' files can be created by translating compiled applications written in Java.
- (.dex) is a format that is optimized for effective storage and memory-mappable executions.

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**Q70:** What is ADB stands for?

**A70:** It stands for Android Debugging Bridge.

**Q71:** What is Orientation in android?

**A71:** Orientation helps to represent the layout in a row or column.

**Q72:** Name the important feature of android 1.0 (API 1)?

**A72:**

- Browser, Google maps, and calendar.
- Camera and scroll down the notification bar.
- Wireless supports Wi-Fi and Bluetooth.
- Contacts, Gmail integration, and Google synchronization.

**Q73:** What is view Binding?



**A73:** View binding is a feature that allows you to more easily write code that interacts with views. You can avoid findViewById function calls using view binding.

**Q74:** What is data binding?

**A74:** The Data Binding Library is a support library that allows you to bind UI components in your layouts to data sources in your app using a declarative format rather than programmatically.

**Q75:** What is a job scheduler?

**A75:** The Job Scheduler API is used for scheduling different types of jobs against the framework that will be executed in your app's own process.



**Q76:** What is a toast notification?

**A76:** A toast notification is a message that pops up on the surface of the window. It only fills the amount of space required for the message and the user's current activity remains visible and interactive. The notification automatically fades in and out and does not accept interaction events.

**Q77:** Name the states of an activity?

**A77:** They are Active, Paused, Stopped, Destroyed.



**Q78:** How is the Paused state of an activity?

**A78:** If the activity is at the background and still visible.

**Q79:** Which activity state is this if the activity is not visible and therefore is hidden or obscured by another activity?

**A79:** It is Stopped state of an activity.

**Q80:** What is a destroyed state of an activity?

**A80:** When the activity process is killed or completed terminated.

**Q81:** What is ANR?

**A81:** ANR is short for Application Not Responding. This is actually a dialog that appears to the user whenever an application has been unresponsive for a long period of time.

**Q82:** How is escape character used as attribute?

**A82:** Escape characters are preceded by double backslashes. For example, a newline character is created using '\\n'.



**Q83:** What are the steps in creating a bound service through SIDL?

**A83:**

1. Create the .aidl file, which defines the programming interface
2. Implement the interface, which involves extending the inner abstract Stub class as well as implanting its methods.
3. Expose the interface, which involves implementing the service to the clients.





## **Q84: What is the use of an activity Creator?**

**A84:** An activity Creator is the first step towards the creation of a new Android project. It is a batch file and shell that will be used to create a new file system structure used for writing code in Android IDE.

**Q85:** What is the importance of default resources?

**A85:** Default resources are those items that are not specific to any device. It contains default strings and files that are not present, an error will occur, and the app will not run. Default Resources are organized in subdirectories of resource directory as per their resource type.

**Q86:** Where are layouts placed in android?

**A86:** Layouts are placed in the Layout folder as XML files.

**Q87:** What is ARMv7?

**A87:** ARMv7 is the most common CPU architecture in Android. Its popularity is because it is evolved and optimized for more powerful computing. It is used in ARM Cortex-A, ARM Cortex-M, ARM Cortex-R CPU families.

**Q88:** How does activity respond when the user rotates the screen?

**A88:** When a user rotates the screen, the current Activity is ended, and a new instance of Activity is created in the new orientation, and `onRestart()` method is invoked. Similarly, other lifecycle methods also get invoked when Activity was first created.

**Q89:** Where will you declare you activity such that the system can access it?

**A89:** To declare an activity, open the Manifest file and add `<activity>` element as the child of the `<application>` element



**Q90:** What is the difference between margin and padding?

**A90:** Margin is the outer space of an element, while the padding is the inner space between content and the border.

**Q91:** Which method is called only once in a fragment lifecycle?

**A91:** onCreate() method is fired only once during the life cycle.

**Q92:** What is defined as a lightweight thread?

**A92:** Coroutines are defined as a lightweight thread.

**Q93:** How is a responsive layout can be made so that it works in mobile and tablets?

**A93:** The application can be made responsive by designing two different layouts with same name and id's.

**Q94:** What does android serializable do?

**A94:** It passes data between activities in android.

**Q95:** What is the purpose of using android parcelable?

**A95:** Parcelable is used by the developers to serialize a class in the program so that it can easily transfer their properties from one activity to another. It is known as the Android implementation of the Java Serializable

**Q96: Where is an icon defined for an activity**

**A96:** Icons for an activity is defined in the manifest file.

**Q97: What is MVVM in android?**

**A97: Model-View-View Model (MVVM)** is the industry-recognized software architecture pattern that overcomes all drawbacks of MVP and MVC design patterns. MVVM suggests separating the data presentation logic (Views or UI) from the core business logic part of the application.

**Q98: Define room in android?**

**A98: Room** is an ORM (object relational mapper) for SQLite database in Android. It is part of the Architecture Components released by Google. ... Room allows you to create and manipulate database in Android more quickly. See it as an abstraction layer on top of inbuilt SQLite database.

**Q99: What is One time work Request?**

**A99: One Timework Request** is a concrete implementation of the Work Request class which is used to run Work Manager tasks that are to be executed once.

**Q100: How to convert layout files to Data Binding layouts?**

**A100:**

1. Firstly, wrap your layout containers with a tag `<layout>`. Just change the root element as `<layout>` tag and do the as usual stuff of designing
2. If you want to append data in XML just add a tag `<data>` and assign a variable to be used. This is optional we can do that either in XML or activity based on your requirement

**Q101: What are the benefits of Jetpack compose?**

**A101: It** simplifies the app development process and speeds it up. With Jetpack Compose, you can write less code compared to the current view building approach which also means less potential bugs. it uses Kotlin.

**Q102:** How to use third party libraries in android development?

**A102:** We need to add their gradle dependencies to the app level gradle file and sync. After that, Android Studio will do all the configurations automatically.

**Q103:** What library/API will you use for asynchronous programming?

**A103:** In Java I would use RxJava library. In Kotlin I would use Coroutines.

**Q104:** How will you add an image to an Android app?

**A104:** Drag the file to the drawable folder.

**Q105:** Why do we need a view model in Android?

**A105:** View model acts as a data holder/ model for a view. View means activity or fragment. Sometimes views destroy and recreates. View model will hold their data when they destroy and provide them back when they recreate.

**Q106:** What is Android jetpack?

**A106:** Android Jetpack is a large set of newly (after 2017) introduced libraries and frameworks to help developers follow best practices, reduce boilerplate code, and write code that works consistently across Android versions and devices so that developers can focus on the code they care about.

**Q107:** Give me some examples of Android Jetpack libraries?

**A107:** View Model, Live Data, Work Manager, Navigation Component s,Room,Paging, Data Binding,ViewBinding, Jetpack Compose,..

**Q108:** What is the difference between dagger and hilt?

**A108:** Dagger is the library we use to efficiently implement dependency injection in Android. Hilt is a newer library (or wrapper) created on top of dagger to make works even easier.

**Q109:** What is the importance of Kotlin Multiplatform?

**A109:** With Kotlin multiplatform, native android developers can create ios applications using Kotlin like flutter and react native developers do.

Not only that, server side web api can also be developed using Kotlin.

**Q110:** What is the recommended architectural design for Android by google?

**A110:** MVVM, google also recently promote MVI with single activity multiple fragment models.



**Q111:** What is the difference between SQLite and Room?

**A111:** SQLite is the embedded database in mobile applications. Room is a library created to easily write codes to use SQLite.

**Q112:** What is Firebase?

**A112:** Firebase is a backend created by google. We can use it instead of using a backend server side web application. It is much cost effective and efficient in most cases than developing a web application for the back end.

**Q113:** What are the benefit of data binding in android?

**A113:** Using data binding can lead to faster development times, faster execution times and more readable and maintained code. Android data binding generates binding classes at compile time for layouts.

**Q114:** Describe one way and two way data binding in android?

**A114:** Two-way Data Binding is a technique of binding your objects to your XML layouts so that the layout can send data to your binding object. This is compared to a "traditional" or "one-way" Data Binding setup, where data would only move from your binding object to the layout.



**Q115:** What is bidirectional data binding?

**A115:** Two-way binding means that any data-related changes affecting the model are immediately propagated to the matching view(s), and that any changes made in the view(s) (say, by the user) are immediately reflected in the underlying model. When app data changes, so does the UI, and conversely.

**Q116:** What is parcelize in kotlin?

**A116:** The kotlin-parcelize plugin provides a Parcelable implementation generator. The plugin issues a warning on each property with a backing field declared in the class body.

**Q117:** What is kotlin android extensions ?

**A117:** The Kotlin Android Extensions is a compiler plugin that allows you to access views from your XML directly in activities, fragments and views using what they refer to as synthetic properties. Kotlin android exertions are deprecated now

**Q118:** What is sealed classes in kotlin?

**A118:** Sealed classes and interfaces represent restricted class hierarchies that provide more control over inheritance.

**Q119:** Why is Room better then directly using SQLite?

**A119:** Because Room provides an abstraction layer over SQLite to allow fluent database access while harnessing the full power of SQLite.

**Q120:** Is room database an ORM?

**A120:** The room is an ORM ( Object Relational Mapper ) for SQLite database in Android. It is part of the Architecture Components.

