1. What programming languages you can use for Android app development?

Kotlin, Java, and C++

1. What is .apk file?

Android SDK tools compile code along with data and resources into an archive file with .apk suffix. Android devices use .apk file to install the app.

1. How Android system runs apps?

* The Android operating system is a multi-user Linux system in which each app is a different user.
* The system gives each app a unique user ID by default.
* Every app runs in isolation from other apps.
* Each app only has access only to the components it required to run, nothing more to ensure security.

1. Name four types of Android components. Describe each.

* Activities: Basically, these are screens that user interact with. They usually work together, each one is independent of each other. They handle the flow of an app (remember history states, keep running activities)
* Services: These are background processes. They do not provide an interface for the user, but they get the work done while the user doesn’t have to know.
* Broadcast receivers: This is the notification center. They handle notifying the user about events that are not in the normal user flow, and take care of notifying to prevent apps from running continuously (in case that app has something to notify the user, but have nothing else to do).
* Content providers: The storage keeper. These handles app data that you can store in file system, provides just the data the app needs, prevent apps from accessing freely (help security)

1. What is manifest file and what is its purpose?

The manifest file is the first file that the system read when starting an app. The manifest file is always saved at the root of the app directory. The manifest file does following things:

* Declare all the components of the app
* Identify user permissions
* Declare minimum API level required by the app
* Declare hardware and software feature used by the app
* Declare libraries the app needs to be linked against to work

1. What are resources? Why they are needed?

Resources things that the app requires to work beside the code (images, audio, animations, languages). Using app resources makes it easy to update various characteristics of the app without modifying code. Providing resources separate from source code helps provide alternative resources for different device configurations.