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Advanced Android Programming

 Answer to following questions:

What programming languages can you use for Android app development?

A programmer can use Java, Kotlin, and C++ to code android apps.

What is an .apk file?

Android devices use the .apk file to install the application onto a mobile device. The .apk is a compilation of the program code translated for android devices.

How does the Android system run apps?

Each android application gets a unique user id to run on the android operating system. Each application is treated as a seperate user with no access to other applications.

Name four types of Android components. Describe each.

Activities: Activities are the function of the app that interacts with the user. Each activity shows a single screen for each function of the application.

Services: A service is a background process that takes a significant amount of time to complete. Services do not have a user interface, but the user can continue to use the app with a service running in the background. Services must be added to the manifest inside the *application* element.
        <service android:name=".ServiceClassName" />

Content Providers: Content providers manage app data and information in a file, software, or website. Content providers usually have permission to access or change the user's data.

Broadcast receivers: Broadcast receivers allow the applications system to deliver events regardless of the user's usage of the app.

What is a manifest file and what is its purpose?

A manifest file is the first file read by an android device when the application is opened. The manifest tells the device what components are in the app and who has access.

What are resources? Why are they needed?

Resources are unique data files like pictures, videos, and sounds that the application stores to use as a reference. The application does not code things like images into the application. Images are taken from resource files when they are called by the code. This way, the same resource can be used on many different occasions without repeating the code; and different resources can be used in the same place for different events.