Rajdip Sanyal (02.09.2024)

Android framework with java

Activity Life Cycle

The activity lifecycle in Android development is a set of methods which is used in the transitions between different states of an Activity in response to user interactions and system events. Understanding these methods is crucial to build robust android applications, as they help manage resources, handle state changes and ensure a smooth user experience.

Types of Activity Life Cycle

There are 7 methods in Android Life Cycle

Method	Description
onCreate	called when activity is first created.
onStart	called when activity is becoming visible to the user.
onResume	called when activity will start interacting with the user.
onPause	called when activity is not visible to the user.
onStop	called when activity is no longer visible to the user.
onRestart	called after your activity is stopped, prior to start.
onDestroy	called before the activity is destroyed.

Fragments

A fragment represents a reusable portion of the user interface in an activity. It has its own lifecycle, can manage its own input events, and can be added or removed from an activity while it is running.

Types of Fragments

There are two types of fragments one is static fragments another is dynamic fragments
Static fragments - Static fragments are defined in an XML layout file and are fixed at runtime. They are added to the activity's layout during the activity's onCreate() method. It is used when the fragment layout is not expected to change during the activity's lifetime.

Dynamic fragments - Dynamic fragments are defined programmatically using FragmentManager and FragmentTransaction at runtime. It provides more flexibility, allowing us to add, replace, or remove fragments based on user interaction or any other events.

Broadcast Receivers

In android development, Broadcast Receivers are components that allow our app to listen for system-wide broadcast announcements or intents from other apps. These broadcasts can be events like the battery being low, the device booting up, receiving an SMS, a change in network connectivity, or even custom broadcasts sent by your own app.

Types of Broadcast Receivers

There are two types of broadcast receivers one is static broadcast receivers another one is dynamic broadcast receivers.

Static Broadcast Receivers

Static broadcast receivers are declared in the AndroidManifest.xml file. They are registered at the time the app is installed and remains active until the app is uninstalled. It is used for listening to system-wide broadcasts that do not require frequent or dynamic changes, like device boot completed or network changes.

Dynamic Broadcast Receivers

These are registered programmatically in code (typically within an activity or service) during runtime, and can be unregistered when no longer needed. It is used for scenarios where the app needs to listen for broadcasts only while it is active, like listening for location updates while the app is open.