Overview of Android: Key App Components

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Learning Objectives in this Part of the Lesson

1. Understand key elements in Android’s middleware infrastructure
2. Name all the key app components in Android
Overview of Key Android App Components
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- App components are essential building blocks of mobile apps that provide various hooks via which Android can effect an app’s lifecycle.

See developer.android.com/guide/components/fundamentals.html#Components
Overview of Key Android App Components

• **Intent**
  - A message that describes an action to perform or an event that has occurred.

See [developer.android.com/reference/android/content/Intent.html](http://developer.android.com/reference/android/content/Intent.html)
Overview of Key Android App Components

- **Intent**
  - A message that describes an action to perform or an event that has occurred
  - Android uses intents as “glue” to simplify the integration of apps that reuse existing components

```xml
<... android:name="..."
<intent-filter>
  <action android:name="..." />
</intent-filter>
</...>
```
Overview of Key Android App Components

• Activity

• Provides a screen within which users can interact to do a single focused thing

See developer.android.com/reference/android/app/Activity.html
Overview of Key Android App Components

• Activity
• Provides a screen within which users can interact to do a single focused thing
• It’s the most common type of Android component

See developer.android.com/guide/components/activities.html
Overview of Key Android App Components

• **Activity**
  - Provides a screen within which users can interact to do a single focused thing
  - It’s the most common type of Android component

Activities are at the heart of all Android apps
Overview of Key Android App Components

- **Broadcast Receiver**
  - Event handler that can respond to system-wide broadcasts

See [developer.android.com/reference/android/content/BroadcastReceiver.html](http://developer.android.com/reference/android/content/BroadcastReceiver.html)
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- **Broadcast Receiver**
  - Event handler that can respond to system-wide broadcasts
  - Activities & services in 1+ apps can interact by broadcasting intents handled by 0+ broadcast receivers
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- **Service**
  - Runs in background to perform long-running operations or access remote resources

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• **Service**
  - Runs in background to perform long-running operations or access remote resources
  - A bound service has a lifecycle that depends on its creating component(s)

See developer.android.com/guide/components/services.html
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- **Service**
  - Runs in background to perform long-running operations or access remote resources
    - A bound service has a lifecycle that depends on its creating component(s)
    - A started service’s lifecycle doesn’t depend on its creating component

Started services are deprecated in later versions of Android
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- **Content Provider**
  - Manages access to structured data & provides data security mechanisms

See [developer.android.com/reference/android/content/ContentProvider.html](developer.android.com/reference/android/content/ContentProvider.html)
Overview of Key Android App Components

- **Content Provider**
  - Manages access to structured data & provides data security mechanisms
  - Content Providers/Resolvers can make an app’s data available to other apps

See [developer.android.com/guide/topics/providers/content-providers.html](https://developer.android.com/guide/topics/providers/content-providers.html)
Overview of Key Android App Components

- We cover intents, activities, & broadcast receivers in MOOC 2 & services & content providers in MOOC 3 of the *Android App Development* specialization

See [www.coursera.org/specializations/android-app-development](http://www.coursera.org/specializations/android-app-development)
End of Overview of Android: Key App Components