



SNS COLLEGE OF TECHNOLOGY, COIMBATORE –35  
(An Autonomous Institution)  
19CSB303 and Composing Mobile Apps  
UNIT 2



## Activity- states and life cycle

Android system initiates its program with in an **Activity** starting with a call on *onCreate()* callback method. There is a sequence of callback methods that start up an activity and a sequence of callback methods that tear down an activity as shown in the below Activity life cycle diagram: (*image courtesy : android.com* )

The Activity class defines the following call backs i.e. events. You don't need to implement all the callbacks methods. However, it's important that you understand each one and implement those that ensure your app behaves the way users expect.

| Sr.No | Callback & Description   |
|-------|--|
| 1     | <b>onCreate()</b><br>This is the first callback and called when the activity is first created.   |
| 2     | <b>onStart()</b><br>This callback is called when the activity becomes visible to the user.   |
| 3     | <b>onResume()</b><br>This is called when the user starts interacting with the application.   |
| 4     | <b>onPause()</b><br>The paused activity does not receive user input and cannot execute any code and called when the current activity is being paused and the previous activity is being resumed. |
| 5     | <b>onStop()</b><br>This callback is called when the activity is no longer visible.   |

|   |   |
|---|---|
| 6 | <b>onDestroy()</b><br>This callback is called before the activity is destroyed by the system. |
| 7 | <b>onRestart()</b><br>This callback is called when the activity restarts after stopping it.   |

### Example

This example will take you through simple steps to show Android application activity life cycle. Follow the following steps to modify the Android application we created in *Hello World Example* chapter –

| Step | Description   |
|------|---|
| 1    | You will use Android studio to create an Android application and name it as <i>HelloWorld</i> under a package <i>com.example.helloworld</i> as explained in the <i>Hello World Example</i> chapter. |
| 2    | Modify main activity file <i>MainActivity.java</i> as explained below. Keep rest of the files unchanged.  |
| 3    | Run the application to launch Android emulator and verify the result of the changes done in the application.  |

An activity class loads all the UI component using the XML file available in *res/layout* folder of the project. Following statement loads UI components from *res/layout/activity\_main.xml* file:

```
setContentView(R.layout.activity_main);
```

An application can have one or more activities without any restrictions. Every activity you define for your application must be declared in your *AndroidManifest.xml* file and the main activity for your app must be declared in the manifest with an `<intent-filter>` that includes the MAIN action and LAUNCHER category as follows:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.tutorialspoint7.myapplication">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
```

