

## Module -3) Android Fundamental

### 1. What is R.java file

**Ans. :** R. java is a automatically generated java file that contains all the references to the resources used in our android project such as the layouts , strings , images , styles , fonts and many more. Its an autogenerated file so we do not need to edit or update it and we can simple get reference to our resource by using the 'R' class . Like if we have some layout then we can use it like: 'R.layout.layout\_name' .

### 2. What is activity and activity lifecycle

**Ans. :**

- **Activity**

Whenever we open an Android application, then you see some UI drawn over our screen. That screen is called an Activity. It is the basic component of Android and whenever you are opening an application, then we are opening some activity.

**For example** , when we open our Gmail application, then we see our emails on the screen. Those emails are present in an Activity. If we open some particular email, then that email will be opened in some other Activity.

When we all started with coding, we know about the main method from where the program begins execution. Similarly, in Android, Activity is the one from where the Android Application starts its process. Activity is one screen of the app's user interface. There is a series of methods that run in an activity.

There is a lifecycle associated with every Activity and to make an error-free Android application, we have to understand the lifecycle of Activity and write the code accordingly.

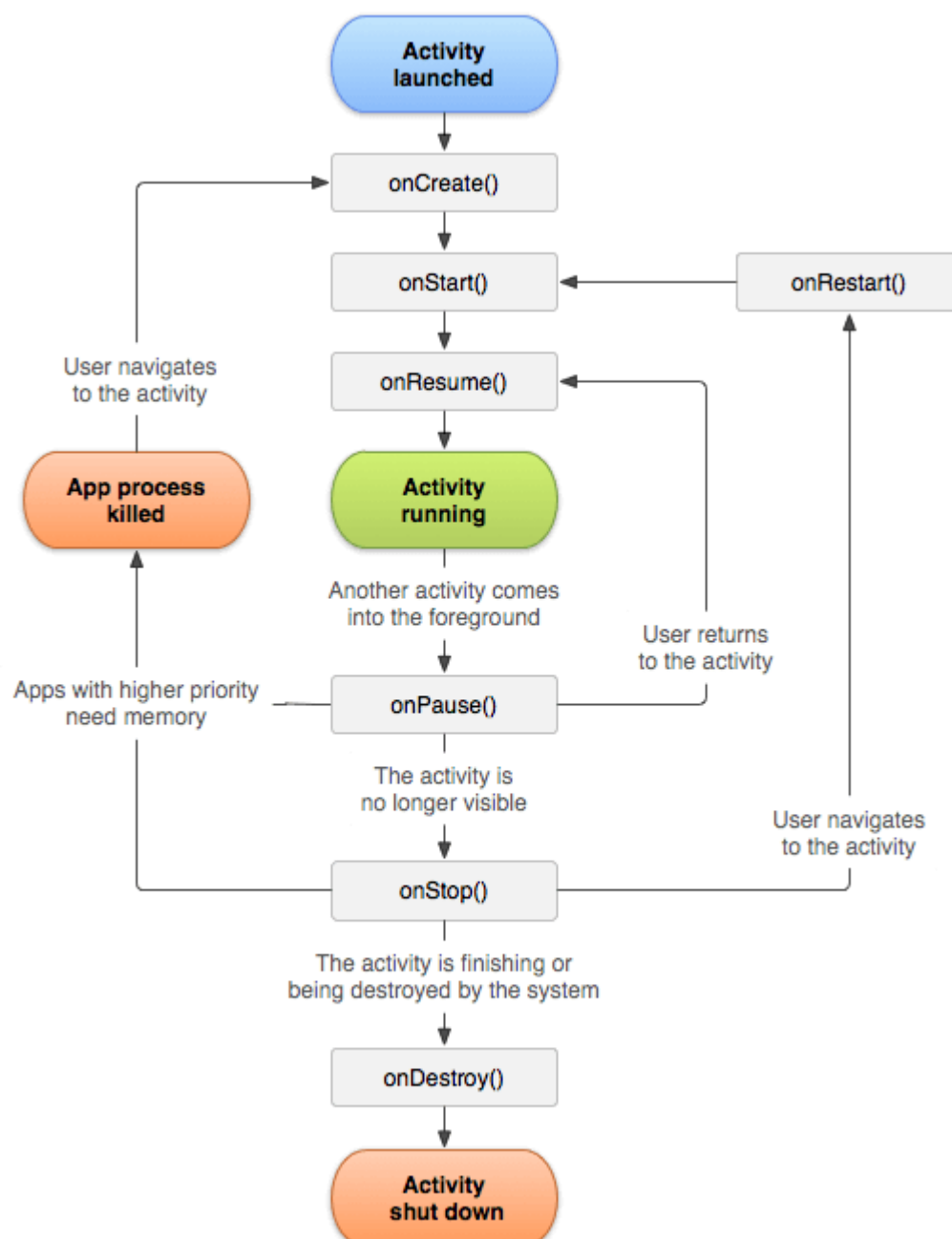
- **Activity Lifecycle**

To understand the activity lifecycle, consider an example of a human being. As human beings, we go through certain stages of our life starting from as a kid to a teenager. From an adult and then to an old person. These are the phases or states of life we go through.

Similarly, for Activity in Android, we go through state changes in the total duration of the activity.

An Android activity undergoes through a number of states during its whole lifecycle. The following diagram shows the whole Activity lifecycle:

*Image Credit: Android Website*



- **The Activity lifecycle consists of 7 methods:**

1. **onCreate():** When a user first opens an activity then the first method that gets called is called as **onCreate** . It acts the same as a constructor of a class, then when an activity is instantiated then onCreate gets called.
2. **onStart():** This method is called when an activity becomes visible to the user and is called after **onCreate**.
3. **onResume():** It is called just before the user starts interacting with the application.
4. **onPause():** It is called when the app is partially visible to the user on the mobile screen.
5. **onStop():** It is called when the activity is no longer visible to the user.
6. **onRestart():** It is called when the activity in the stopped state is about to start again.
7. **onDestroy():** It is called when the activity is cleared from the application stack.

So, these are the 7 methods that are associated with the lifecycle of an activity.

### **3. What is fragment and fragment lifecycle**

**Ans. :**

- **Android Fragments**

**Android Fragment** is the part of activity, it is also known as sub-activity. There can be more than one fragment in an activity. Fragments represent multiple screen inside one activity.

Android fragment lifecycle is affected by activity lifecycle because fragments are included in activity.

Each fragment has its own life cycle methods that is affected by activity life cycle because fragments are embedded in activity.

The **FragmentManager** class is responsible to make interaction between fragment objects.

- **Android Fragment Lifecycle**

The lifecycle of android fragment is like the activity lifecycle. There are 12 lifecycle methods for fragment.

