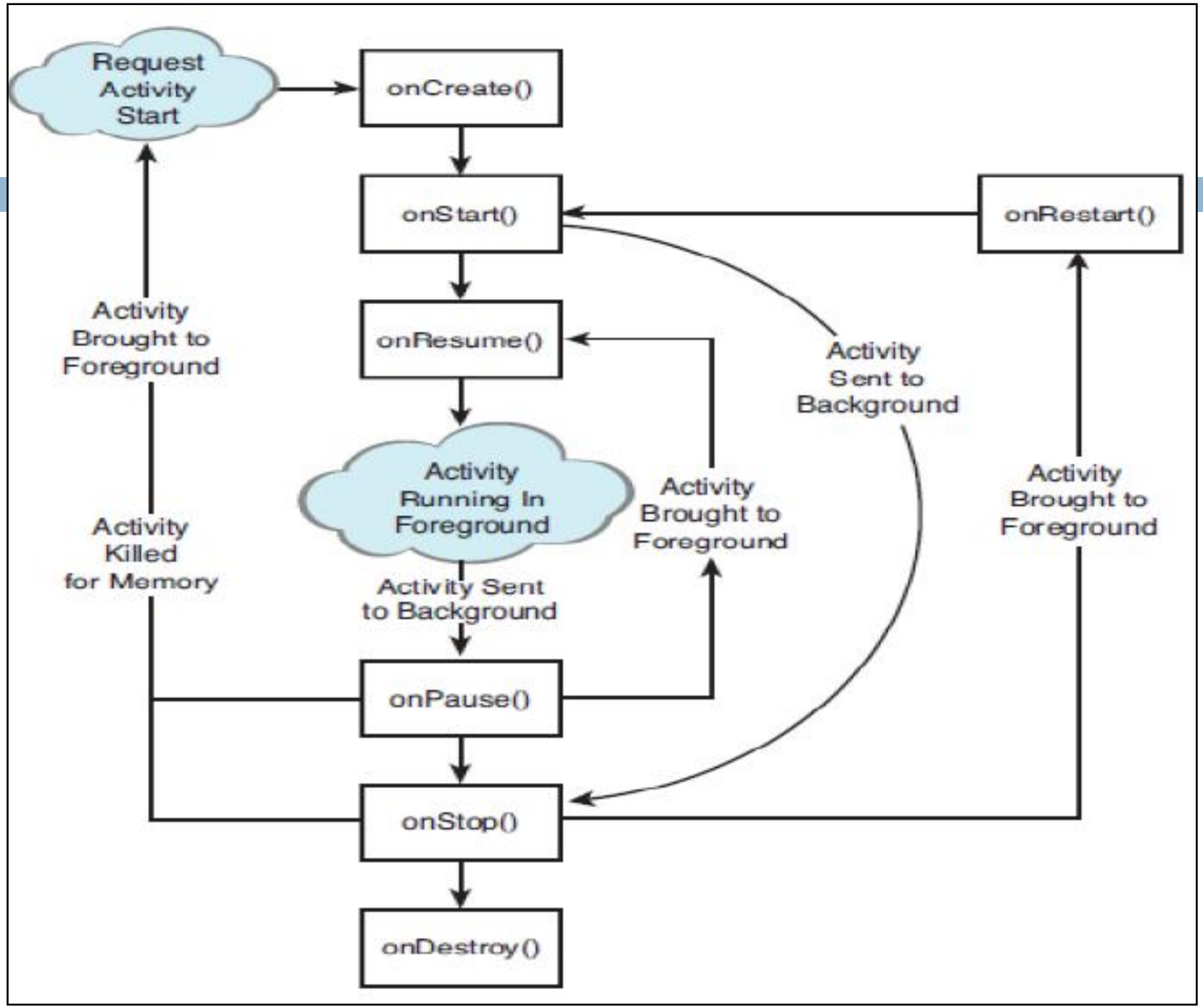
ANDROID LIFE CYCLE
ANDROID COMPONENTS

Android Lifecycle

The Activity base class defines a series of events that governs the life cycle of an activity. The Activity class defines the following events:

- **onCreate**()
  - Called when the activity is first created. For newly created activity, Object of Bundle is null. If Activity was killed for memory reasons and is now restarted, the Bundle contains the previous state information for this Activity so that it can reinitiate
- **onStart**()
  - Called when the activity becomes visible to the user
- **onResume**()
  - Called when the activity starts interacting with the user
- **onPause**()
  - Called when the current activity is being paused and the previous activity is being resumed
- **onStop**()
  - Called when the activity is no longer visible to the user
- **onDestroy**()
  - Called before the activity is destroyed by the system (either manually or by the system to conserve memory)
- **onRestart**()
  - Called when the activity has been stopped and is restarting again
- By default, the activity created for you contains the onCreate() event. Below figure shows the life cycle of an activity and the various stages it goes through — from when the activity is started until it ends.


Request Activity Start
onCreate()
onStart()
onRestart()
onResume()
Activity Brought to Foreground
Activity Sent to Background
Activity Running In Foreground
Activity Brought to Foreground
Activity Brought to Foreground
Activity Killed for Memory
Activity Sent to Background
onPause()
onStop()
onDestroy()

Basic components of Android Application

Context:

- The context is the central command center for an Android application. All application-specific functionality can be accessed through the context.
- For example, You can retrieve application resources using the getResources() method of the application Context.
- From that method, you can retrieve any resources from your application.
- For example, retrieve the value of string resource which is stored "hello"

```
String greeting = getResources().getString(R.string.hello);
```

Basic components of Android Application

Activity:

- An Android application is a collection of tasks, each of which is called an Activity. Each Activity within an application has a unique task or purpose.
- The Android Activity class (android.app.Activity) is core to any Android application.
- For example, a simple game application might have the following five Activities, as below,
  - A Startup or Splash screen
  - A Main Menu screen
  - A Game Play screen
  - A High Scores screen
  - A Help/About screen

Basic components of Android Application

Intent:

- The Android operating system uses an asynchronous messaging mechanism to match task requests with the appropriate Activity.
- Each request is packaged as Intent.
- You can think of each such request as a message stating Intent to *do something*.
- For example, I want to move from one activity to another activity, then the code for this task is as below.

```
Intent nextActivity = new Intent(getApplicationContext(), NextPageActivity.class);
startActivity(nextActivity);
```

Basic components of Android Application

Service:

- Tasks that do not require user interaction can be encapsulated in a service.
- A service is most useful when the operations are lengthy (offloading time-consuming processing) or need to be done regularly (such as checking a server for new mail).