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School of Computer Science
Department of Cybernetics

Assignment No. 1

Name: Prashant Mishra
SAP ID: 500060122 Roll no. R100217103 Code: CSOS3001
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Q.1 What is Broadcast Receiver in Android application. Write code to add it in Android app.

Ans. Broadcast Receiver:

- A broadcast receiver (receiver) is an Android component which allows you t o register for system or application events.
- All registered receivers for an event are notified by the Android runtime onc e this event happens.
- Broadcast Receivers simply respond to broadcast messages from other applica tions or from the system itself.
- These messages are sometime called events or intents. For example, applicati ons can also initiate broadcasts to let other applications know that some data has been downloaded to the device and is available for them to use, so this is broadcast receiver who will intercept this communication and will initiate appropriate action.

Code:

```
package com.example.broadcastdetector;

import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;

public class MyReceiver extends BroadcastReceiver {

  public MyReceiver() {
  }

  @Override
  public void onReceive(Context context, Intent intent)
{
 // Implement code here to be performed when broadcast is detected
  }
}
```

Q.2 Differentiate between Activity and Service component in Android. What are the services available in android?

Ans. Activity:

- Activity represents one single screen in an Android Application
- An Activity in an android application is created by extending android.app.Activity
- All Activities of an android application should be declared in a configuration file called AndroidManifest.xml
- Activity is composed of Views
- View represents a single user interface component

Service:

- Service is an android application component that runs in the background
- Service is also called as a faceless activity and does not provide any user interface
- A service is generally used to perform time consuming operations or to accomplish task for remote processes
- All services in an android application should be declared in the AndroidManifest.xml file
- An android service is created by extending android.app.Service

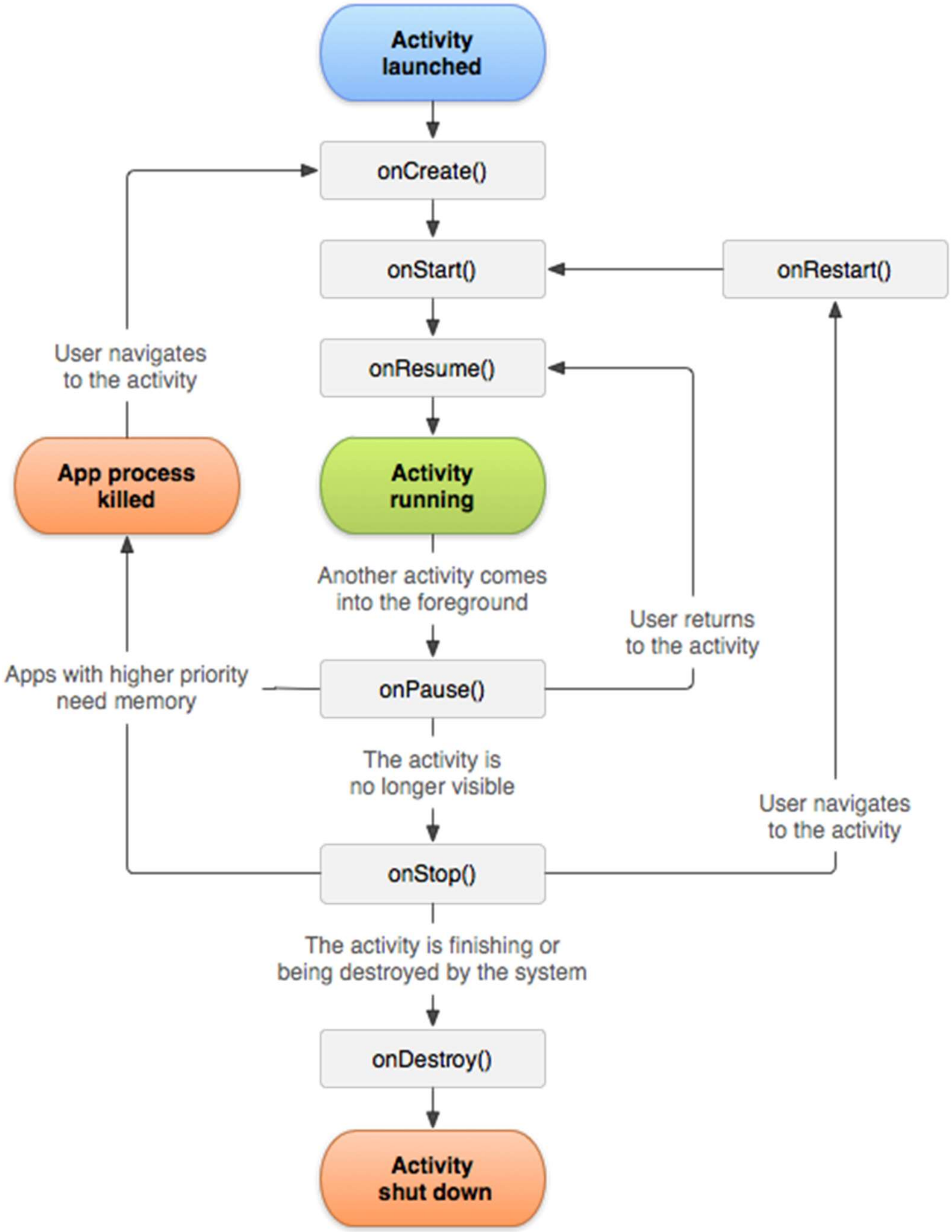
Services available on android:

1. Foreground:
   - operation is noticeable to the user.
   - an audio app to play an audio track.
   - Foreground services must display a Notification.
   - Foreground services continue running even when the user isn't interacting with the app.
2. Background:
   - operation isn't directly noticed by the user. compact apps’ storage,
   - Collecting data from network
3. Bound:
   - application component binds to it by calling bindService().
   - A bound service offers a client-server interface
   - send requests, receive results, and even do so across processes with interprocess communication (IPC).
   - A bound service runs only as long as another application component is bound to it.

Q.3 Explain Android Activity Life Cycle.

Ans.

- An activity goes through a number of states during its life time
- Activity class provides callbacks methods to handle transition between states.
- These callback methods define behaviour of activity during transition
  - onCreate(),
  - onStart(),
  - onResume(),
  - onPause(),
  - onStop(), and
  - onDestroy().


Activity launched
onCreate()
onStart()
onRestart()
User navigates to the activity
onResume()
App process killed
Activity running
Another activity comes into the foreground
User returns to the activity
Apps with higher priority need memory
onPause()
The activity is no longer visible
User navigates to the activity
onStop()
The activity is finishing or being destroyed by the system
onDestroy()
Activity shut down

Q.4 Describe use of Intent. Differentiate Explicit and Implicit Intents.

Ans. Intent: An android application can contain zero or more components

Uses of Intent:

- Intents are used to navigate between components
- Intents are also used to transfer data between activities
- Launching an Activity
- Starting a new service
- Broadcasting messages

Difference between Explicit and Implicit Intent:

Explicit Intent	**Implicit Intent**
• Specify Application to satisfy the Intent • Can be achieved with target app's package name or with fully qualified component class name • Typically used to start a component in your own app	• Do not name a specific component • Declare a general action to perform • Component of another app handle it **(any app on the device to be able to perform an action)**

Intent I = newIntent(getApplicationContext() , NextActivity.class);
I.putExtra("value1" , "This value for Next Activity");
I.putExtra("value2" , "This value for Next Activity");
	Intent i=new Intent();
	i.setAction(Intent.ACTION_SEND);