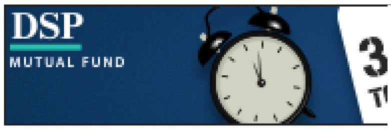
Android - Phone Calls



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Android provides Built-in applications for phone calls, in some occasions we may need to make a phone call through our application. This could easily be done by using implicit Intent with appropriate actions. Also, we can use PhoneStateListener and TelephonyManager classes, in order to monitor the changes in some telephony states on the device.

This chapter lists down all the simple steps to create an application which can be used to make a Phone Call. You can use Android Intent to make phone call by calling built-in Phone Call functionality of the Android. Following section explains different parts of our Intent object required to make a call.

Intent Object - Action to make Phone Call

You will use **ACTION_CALL** action to trigger built-in phone call functionality available in Android device. Following is simple syntax to create an intent with ACTION_CALL action

```
Intent phoneIntent = new Intent(Intent.ACTION_CALL);
```

You can use **ACTION_DIAL** action instead of ACTION_CALL, in that case you will have option to modify hardcoded phone number before making a call instead of making a direct call.

Intent Object - Data/Type to make Phone Call

Example

Following example shows you in practical how to use Android Intent to make phone call to the given mobile number.

> To experiment with this example, you will need actual Mobile device equipped with latest Android OS, otherwise you will have to struggle with emulator which may not work.

Step	Description
1	You will use Android studio IDE to create an Android application and name it as *My Application* under a package *com.example.saira_000.myapplication*.
2	Modify *src/MainActivity.java* file and add required code to take care of making a call.
3	Modify layout XML file *res/layout/activity_main.xml* add any GUI component if required. I'm adding a simple button to Call 91-000-000-0000 number
4	No need to define default string constants.Android studio takes care of default constants.
5	Modify *AndroidManifest.xml* as shown below
6	Run the application to launch Android emulator and verify the result of the changes done in the application.

Following is the content of the modified main activity file **src/MainActivity.java**.

```
package com.example.saira_000.myapplication;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.os.Bundle;
import android.support.v4.app.ActivityCompat;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
```

```
         public void onClick(View arg0) {
            Intent callIntent = new Intent(Intent.ACTION_CALL);
            callIntent.setData(Uri.parse("tel:0377778888"));

            if (ActivityCompat.checkSelfPermission(MainActivity.this,
               Manifest.permission.CALL_PHONE) != PackageManager.PERMISSION_GRANTED) {
                  return;
               }
               startActivity(callIntent);
         }
      });

   }
}
```

Following will be the content of **res/layout/activity_main.xml** file −

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="fill_parent"
   android:layout_height="fill_parent"
   android:orientation="vertical" >

   <Button
      android:id="@+id/buttonCall"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="call 0377778888" />

</LinearLayout>
```

Following will be the content of **res/values/strings.xml** to define two new constants −

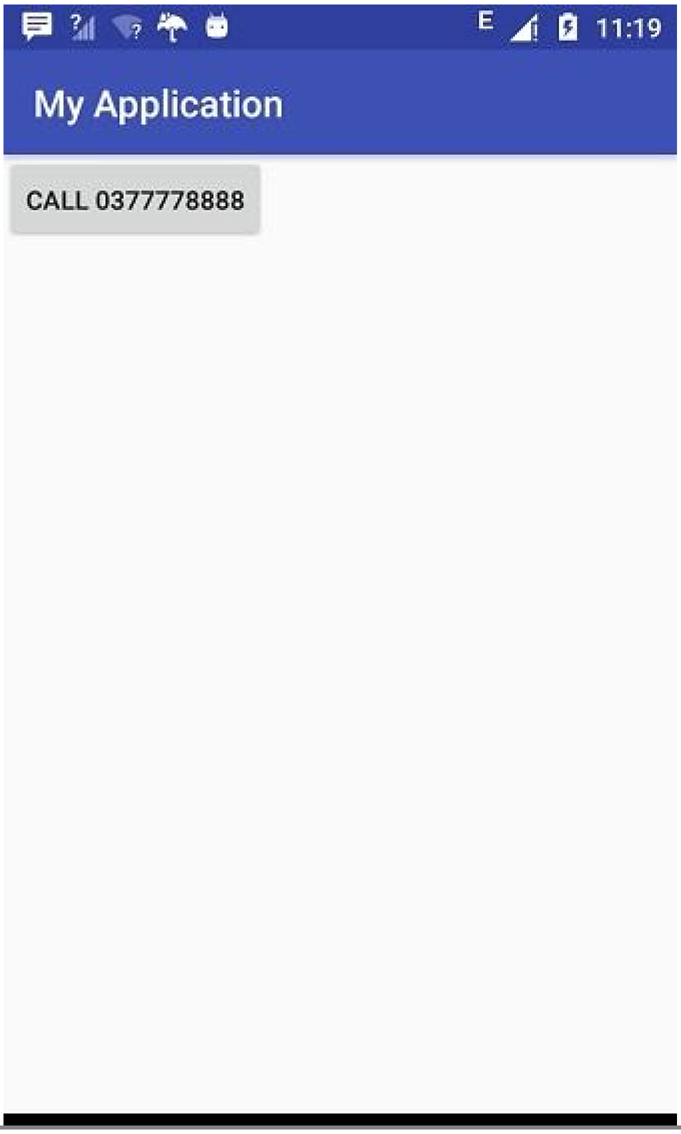
```
<?xml version="1.0" encoding="utf-8"?>
<resources>
   <string name="app_name">My Application</string>
</resources>
```

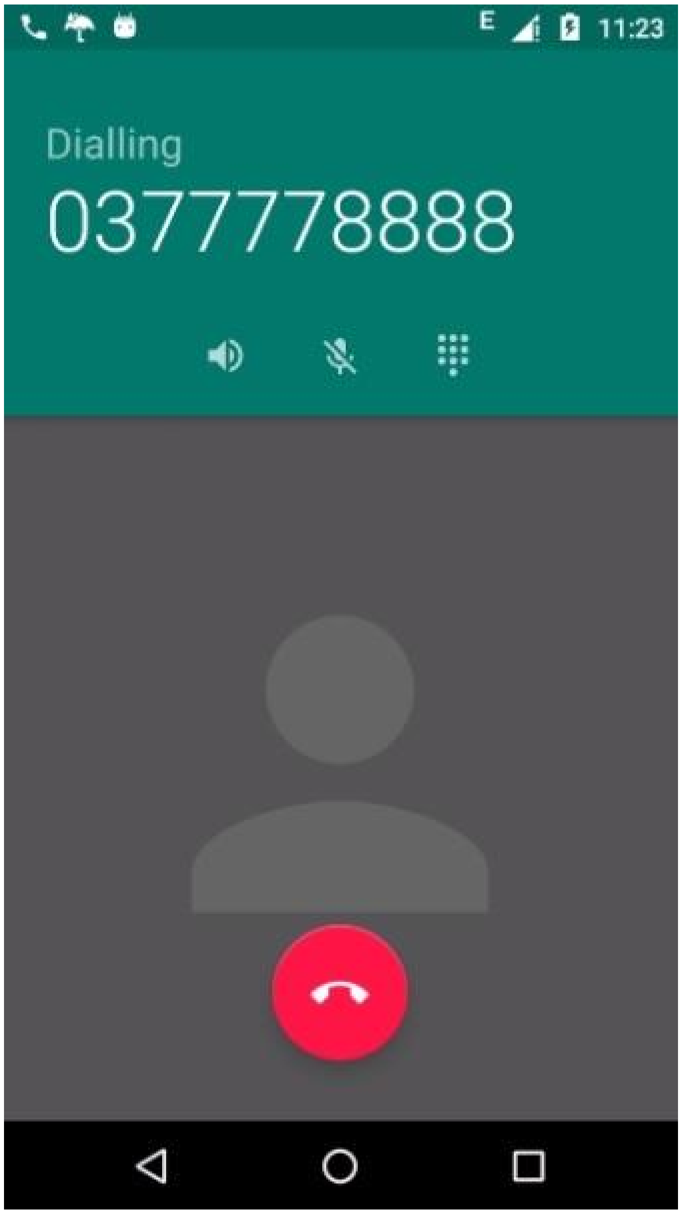
Following is the default content of **AndroidManifest.xml** −

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.saira_000.myapplication" >

   <uses-permission android:name="android.permission.CALL_PHONE" />

   <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
```

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

      </activity>

   </application>
</manifest>
```

Let's try to run your **My Application** application. I assume you have connected your actual Android Mobile device with your computer. To run the app from Android studio, open one of your project's activity files and click Run icon from the toolbar.Select your mobile device as an option and then check your mobile device which will display following screen −





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