Android Shared Preferences Tutorial

Android provides many ways of storing data of an application. One of this way is called Shared Preferences. Shared Preferences allow you to save and retrieve data in the form of key,value pair.

In order to use shared preferences , you have to call a method getSharedPreferences() that returns a SharedPreference instance pointing to the file that contains the values of preferences.

```
SharedPreferences sharedpreferences = getSharedPreferences(MyPREFERENCES, Context.MODE_PRIVATE);
```

The first parameter is the key and the second parameter is the MODE. Apart from private there are other modes available that are listed below:

Sr.No	Mode and description
1	**MODE_APPEND** This will append the new preferences with the already existing preferences
2	**MODE_ENABLE_WRITE_AHEAD_LOGGING** Database open flag. When it is set , it would enable write ahead logging by default
3	**MODE_MULTI_PROCESS** This method will check for modification of preferences even if the sharedpreference instance has already been loaded
4	**MODE_PRIVATE** By setting this mode , the file can only be accessed using calling application
5	**MODE_WORLD_READABLE** This mode allow other application to read the preferences

6	**MODE_WORLD_WRITEABLE** This mode allow other application to write the preferences

You can save something in the sharedpreferences by using SharedPreferences.Editor class. You will call the edit method of SharedPreference instance and will receive it in an editor object. Its syntax is −

```
Editor editor = sharedpreferences.edit();
editor.putString("key", "value");
editor.commit();
```

Apart from the putString method , there are methods available in the editor class that allows manipulation of data inside shared preferences. They are listed as follows:

Sr. NO	Mode and description
1	**apply()** It is an abstract method. It will commit your changes back from editor to the sharedPreference object you are calling
2	**clear()** It will remove all values from the editor
3	**remove(String key)** It will remove the value whose key has been passed as a parameter
4	**putLong(String key, long value)** It will save a long value in a preference editor
5	**putInt(String key, int value)** It will save a integer value in a preference editor

6	**putFloat(String key, float value)** It will save a float value in a preference editor

Example

This example demonstrates the use of the Shared Preferences. It display a screen with some text fields , whose value are saved when the application is closed and brought back when it is opened again .

To experiment with this example , you need to run this on an actual device on after developing the application according to the steps below:

Steps	Description
1	You will use Android studio to create an Android application under a package com.example.sairamkrishna.myapplication. While creating this project, make sure you Target SDK and Compile With at the latest version of Android SDK to use higher levels of APIs.
2	Modify src/MainActivity.java file to add progress code to display the spinning progress dialog.
3	Modify res/layout/activity_main.xml file to add respective XML code.
4	Run the application and choose a running android device and install the application on it and verify the results.

Following is the content of the modified **MainActivity.java.**

```
package com.example.sairamkrishna.myapplication;

import android.content.Context;
import android.content.SharedPreferences;
import android.support.v7.app.ActionBarActivity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends ActionBarActivity {
   EditText ed1,ed2,ed3;
   Button b1;
   public static final String MyPREFERENCES = "MyPrefs" ;
   public static final String Name = "nameKey";
   public static final String Phone = "phoneKey";
   public static final String Email = "emailKey";
   SharedPreferences sharedpreferences;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      ed1=(EditText)findViewById(R.id.editText);
      ed2=(EditText)findViewById(R.id.editText2);
      ed3=(EditText)findViewById(R.id.editText3);

      b1=(Button)findViewById(R.id.button);
      sharedpreferences = getSharedPreferences(MyPREFERENCES, Context.MODE_PRIVATE);

      b1.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            String n  = ed1.getText().toString();
            String ph  = ed2.getText().toString();
            String e  = ed3.getText().toString();
            SharedPreferences.Editor editor = sharedpreferences.edit();

            editor.putString(Name, n);
            editor.putString(Phone, ph);
            editor.putString(Email, e);
            editor.commit();
            Toast.makeText(MainActivity.this,"Thanks",Toast.LENGTH_LONG).show();
         }
      });
   }

   @Override
   public boolean onCreateOptionsMenu(Menu menu) {
      // Inflate the menu; this adds items to the action bar if it is present.
      getMenuInflater().inflate(R.menu.menu_main, menu);
      return true;
   }
   @Override
   public boolean onOptionsItemSelected(MenuItem item) {
      // Handle action bar item clicks here. The action bar will
      // automatically handle clicks on the Home/Up button, so long
      // as you specify a parent activity in AndroidManifest.xml.

      int id = item.getItemId();

      //noinspection SimplifiableIfStatement
      if (id == R.id.action_settings) {
         return true;
      }
      return super.onOptionsItemSelected(item);
   }
}
```

Following is the content of the modified main activity file **res/layout/activiy_main.xml.**

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools" android:layout_width="match_parent"
   android:layout_height="match_parent" android:paddingLeft="@dimen/activity_horizontal_margin"
   android:paddingRight="@dimen/activity_horizontal_margin"
   android:paddingTop="@dimen/activity_vertical_margin"
   android:paddingBottom="@dimen/activity_vertical_margin" tools:context=".MainActivity">

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Shared Preference "
      android:id="@+id/textView"
      android:layout_alignParentTop="true"
      android:layout_centerHorizontal="true"
      android:textSize="35dp" />

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Tutorials Point"
      android:id="@+id/textView2"
      android:layout_below="@+id/textView"
      android:layout_centerHorizontal="true"
      android:textSize="35dp"
      android:textColor="#ff16ff01" />

   <EditText
```

```
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:id="@+id/editText"
       android:layout_below="@+id/textView2"
       android:layout_marginTop="67dp"
       android:hint="Name"
       android:layout_alignParentRight="true"
       android:layout_alignParentEnd="true"
       android:layout_alignParentLeft="true"
       android:layout_alignParentStart="true" />

    <EditText
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:id="@+id/editText2"
       android:layout_below="@+id/editText"
       android:layout_alignParentLeft="true"
       android:layout_alignParentStart="true"
       android:layout_alignParentRight="true"
       android:layout_alignParentEnd="true"
       android:hint="Pass" />

    <EditText
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:id="@+id/editText3"
       android:layout_below="@+id/editText2"
       android:layout_alignParentLeft="true"
       android:layout_alignParentStart="true"
       android:layout_alignParentRight="true"
       android:layout_alignParentEnd="true"
       android:hint="Email" />
```

```
   <Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Save"
      android:id="@+id/button"
      android:layout_below="@+id/editText3"
      android:layout_centerHorizontal="true"
      android:layout_marginTop="50dp" />

</RelativeLayout>
```

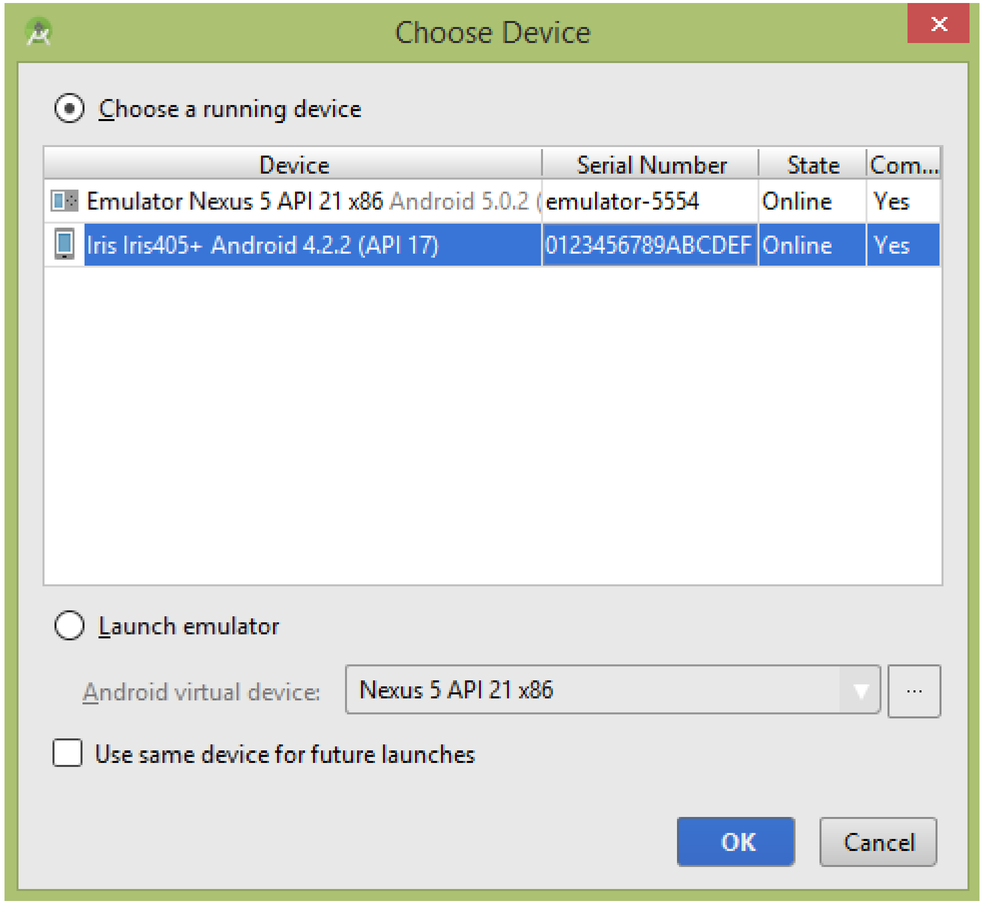
Following is the content of the modified content of file **res/values/strings.xml.**

```
<resources>
   <string name="app_name">My Application</string>
   <string name="hello_world">Hello world!</string>
   <string name="action_settings">Settings</string>
</resources>
```

Following is the content default file **AndroidManifest.xml.**

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

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

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

      </activity>

   </application>
</manifest>
```

Let's try to run your 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. Before starting your application, Android studio will display following window to select an option where you want to run your Android application.



Choose Device

● Choose a running device

Device	Serial Number	State	Com...
Emulator Nexus 5 API 21 x86 Android 5.0.2 (	emulator-5554	Online	Yes
Iris Iris405+ Android 4.2.2 (API 17)	0123456789ABCDEF	Online	Yes

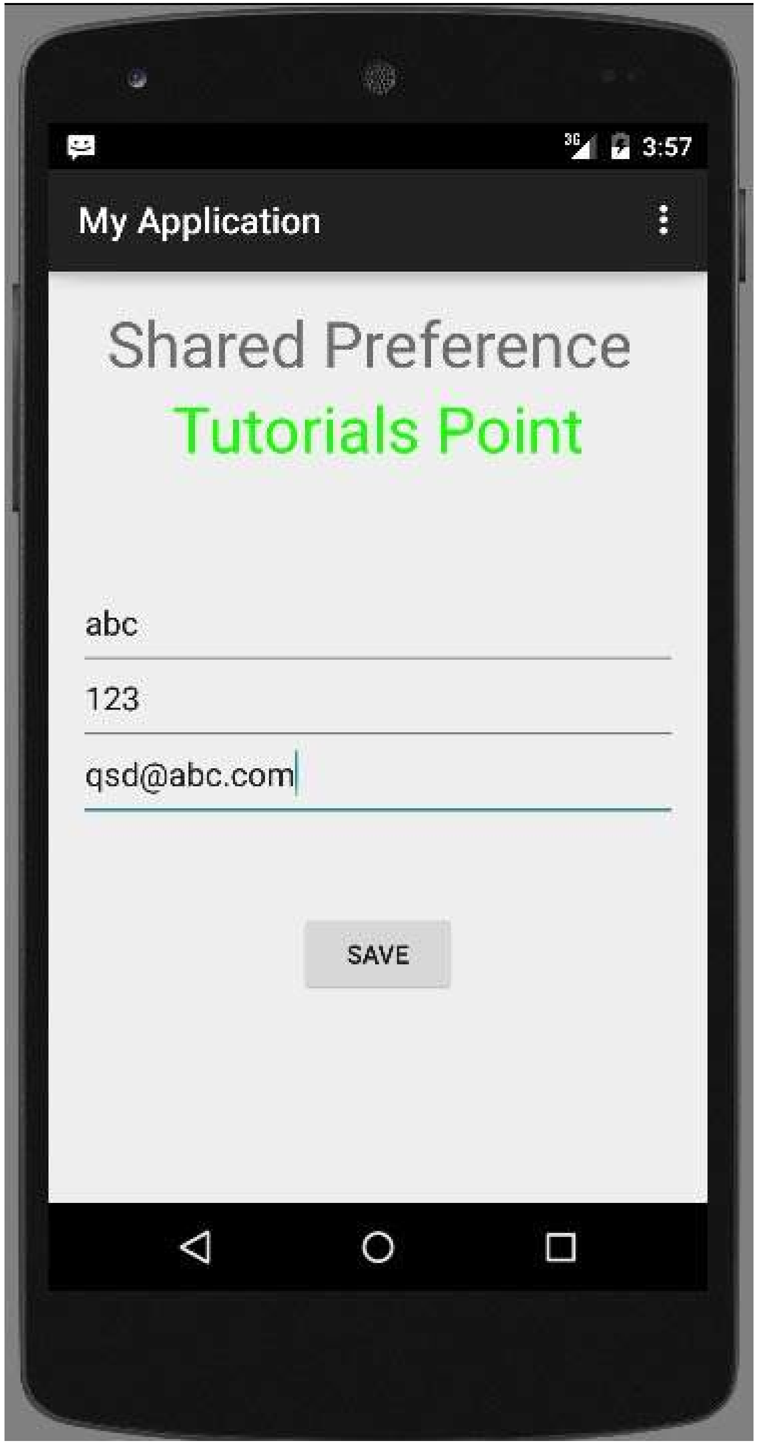
○ Launch emulator

Android virtual device: Nexus 5 API 21 x86

□ Use same device for future launches

Select your mobile device as an option and then check your mobile device which will display following screen −

Now just put in some text in the field. Like i put some random name and other information and click on save button.

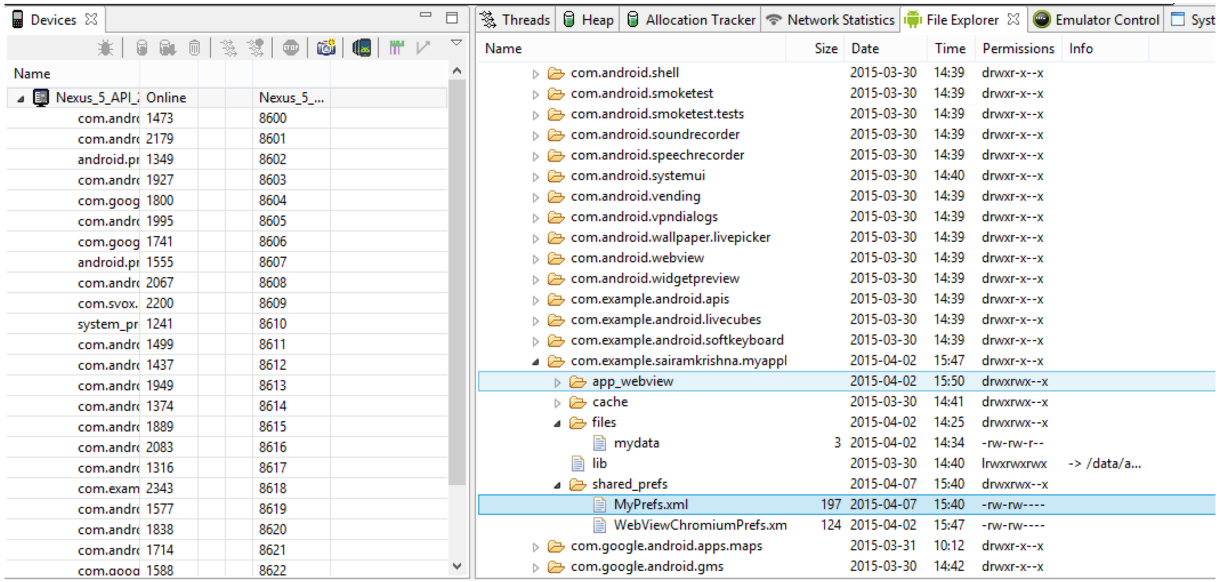


abc

123

qsd@abc.com

Now when you press save button , the text will be saved in the shared preferences. Now press back button and exit the application. Now open it again and you will see all the text you have written back in your application.



Name			
Nexus_5_API_:	Online		Nexus_5_...
com.andr	1473		8600
com.andr	2179		8601
android.pr	1349		8602
com.andr	1927		8603
com.goog	1800		8604
com.andr	1995		8605
com.goog	1741		8606
android.pr	1555		8607
com.andr	2067		8608
com.svox.	2200		8609
system_pr	1241		8610
com.andr	1499		8611
com.andr	1437		8612
com.andr	1949		8613
com.andr	1374		8614
com.andr	1889		8615
com.andr	2083		8616
com.andr	1316		8617
com.exam	2343		8618
com.andr	1577		8619
com.andr	1838		8620
com.andr	1714		8621
com.goog	1588		8622

Name	Size	Date	Time	Permissions	Info
com.android.shell		2015-03-30	14:39	drwxr-x--x	
com.android.smoketest		2015-03-30	14:39	drwxr-x--x	
com.android.smoketest.tests		2015-03-30	14:39	drwxr-x--x	
com.android.soundrecorder		2015-03-30	14:39	drwxr-x--x	
com.android.speechrecorder		2015-03-30	14:39	drwxr-x--x	
com.android.systemui		2015-03-30	14:40	drwxr-x--x	
com.android.vending		2015-03-30	14:39	drwxr-x--x	
com.android.vpndialogs		2015-03-30	14:39	drwxr-x--x	
com.android.wallpaper.livepicker		2015-03-30	14:39	drwxr-x--x	
com.android.webview		2015-03-30	14:39	drwxr-x--x	
com.android.widgetpreview		2015-03-30	14:39	drwxr-x--x	
com.example.android.apis		2015-03-30	14:39	drwxr-x--x	
com.example.android.livecubes		2015-03-30	14:39	drwxr-x--x	
com.example.android.softkeyboard		2015-03-30	14:39	drwxr-x--x	
com.example.sairamkrishna.myappl		2015-04-02	15:47	drwxr-x--x	
app_webview		2015-04-02	15:50	drwxrwx--x	
cache		2015-03-30	14:41	drwxrwx--x	
files		2015-04-02	14:25	drwxrwx--x	
mydata	3	2015-04-02	14:34	-rw-rw-r--	
lib		2015-03-30	14:40	lrwxrwxrwx	-> /data/a...
shared_prefs		2015-04-07	15:40	drwxrwx--x	
MyPrefs.xml	197	2015-04-07	15:40	-rw-rw----	
WebViewChromiumPrefs.xm	124	2015-04-02	15:47	-rw-rw----	
com.google.android.apps.maps		2015-03-31	10:12	drwxr-x--x	
com.google.android.gms		2015-03-30	14:42	drwxr-x--x	