

# Android External Storage Example

Like internal storage, we are able to save or read data from the device external memory such as sdcard. The `FileInputStream` and `FileOutputStream` classes are used to read and write data into the file.

## Example of reading and writing data in the android external storage

activity\_main.xml

Drag the 2 edittexts, 2 textviews and 2 buttons from the palette, now the activity\_main.xml file will like this:

File: activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="example.javatpoint.com.externalstorage.MainActivity">

    <EditText
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="true"
        android:layout_alignParentTop="true"
        android:layout_marginRight="20dp"
        android:layout_marginTop="24dp"
        android:ems="10" >

        <requestFocus />
    </EditText>

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/editText1"
        android:layout_below="@+id/editText1"
        android:layout_marginTop="24dp"
        android:ems="10" />

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/editText1"
        android:layout_alignBottom="@+id/editText1"
        android:layout_alignParentLeft="true"
        android:text="File Name:" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/editText2"
        android:layout_alignBottom="@+id/editText2"
        android:layout_alignParentLeft="true"
        android:text="Data:" />

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/editText2"
        android:layout_below="@+id/editText2"
        android:layout_marginLeft="70dp"
        android:layout_marginTop="16dp"
        android:text="save" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/button1"
        android:layout_alignBottom="@+id/button1"
        android:layout_toRightOf="@+id/button1"
        android:text="read" />
</RelativeLayout>
```

## Provide permission for the external storage

You need to provide the `WRITE_EXTERNAL_STORAGE` permission.

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

File: Activity\_Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="example.javatpoint.com.externalstorage">
    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

## Activity class

Let's write the code to write and read data from the android external storage.

File: MainActivity.java

```
package example.javatpoint.com.externalstorage;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter;

public class MainActivity extends AppCompatActivity {
    EditText editTextFileName,editTextData;
    Button saveButton,readButton;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        editTextFileName=findViewById(R.id.editText1);
        editTextData=findViewById(R.id.editText2);
        saveButton=findViewById(R.id.button1);
        readButton=findViewById(R.id.button2);

        //Performing action on save button
        saveButton.setOnClickListener(new View.OnClickListener(){

            @Override
            public void onClick(View arg0) {
                String filename=editTextFileName.getText().toString();
                String data=editTextData.getText().toString();

                FileOutputStream fos;
                try {
                    File myFile = new File("/sdcard/"+filename);
                    myFile.createNewFile();
                    FileOutputStream fOut = new FileOutputStream(myFile);
                    OutputStreamWriter myOutWriter = new OutputStreamWriter(fOut);
                    myOutWriter.append(data);
                    myOutWriter.close();
                    fOut.close();
                    Toast.makeText(getApplicationContext(),filename + "saved",Toast.LENGTH_LONG).show();
                } catch (FileNotFoundException e) {e.printStackTrace();}
                catch (IOException e) {e.printStackTrace();}
            }
        });

        //Performing action on Read Button
        readButton.setOnClickListener(new View.OnClickListener(){

            @Override
            public void onClick(View arg0) {
                String filename=editTextFileName.getText().toString();
                StringBuffer stringBuffer = new StringBuffer();
                String aDataRow = "";
                String aBuffer = "";
                try {
                    File myFile = new File("/sdcard/"+filename);
                    FileInputStream fIn = new FileInputStream(myFile);
                    BufferedReader myReader = new BufferedReader(
                        new InputStreamReader(fIn));
                    while ((aDataRow = myReader.readLine()) != null) {
                        aBuffer += aDataRow + "\n";
                    }
                    myReader.close();
                } catch (IOException e) {
                    e.printStackTrace();
                }
                Toast.makeText(getApplicationContext(),aBuffer,Toast.LENGTH_LONG).show();
            }
        });
    }
}
```

