->Manifest File

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.android_storage_example">
    <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE"/>
    <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:supportsRtl="true"
        android:theme="@style/Theme.Android_Storage_example">
        <activity
            android:name=".SQLStorageExample"
            android:exported="true" />
        <activity
            android:name=".ExternalStorageExample"
            android:exported="true" />
        <activity
            android:name=".InternalStorageExample"
            android:exported="true" />
        <activity
            android:name=".SharedPreference"
            android:exported="true" />

        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

->XMLFiles

1. MainAcitivity

```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=".MainActivity"
    android:gravity="center">
```

```xml
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/internalstorage"
        android:text="Internal Storage"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/externalstorage"
        android:text="External Storage"
        android:layout_below="@+id/internalstorage"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/sharedpreference"
        android:text="Shared Prefrence"
        android:layout_below="@+id/externalstorage"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/sqlstorage"
        android:text="SQL Storage "
        android:layout_below="@+id/sharedpreference"/>


</RelativeLayout>
```

2. InternalStorageExample

```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"
    android:gravity="center"
    tools:context=".InternalStorageExample">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Internal Storage Example"
        android:id="@+id/internalt1"
        android:textSize="20dp"
        android:layout_margin="20dp"
        android:textStyle="bold"
        />
    <EditText
        android:layout_width="match_parent"
        android:layout_height="300dp"
        android:id="@+id/internalstorageedittext"
        android:layout_below="@+id/internalt1"
        android:layout_margin="20dp"
        android:hint="Enter Your Comments"
```

```
          android:inputType="text"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Write"
        android:id="@+id/internalstoragewritedatabtn"
        android:layout_below="@+id/internalstorageedittext"
        android:layout_margin="20dp"/>


    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Read"
        android:id="@+id/internalstoragereaddatabtn"
        android:layout_below="@+id/internalstorageedittext"
        android:layout_margin="20dp"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="20dp"/>

</RelativeLayout>
```

3. ExternalStorageExample

```
<?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=".ExternalStorageExample"
    android:gravity="center">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="External Storage Example"
        android:id="@+id/externalt1"
        android:textSize="20dp"
        android:layout_margin="10dp"
        android:textStyle="bold"
        />
    <EditText
        android:layout_width="match_parent"
        android:layout_height="300dp"
        android:id="@+id/externalstorageedittext"
        android:layout_below="@+id/externalt1"
        android:layout_margin="20dp"
        android:hint="Enter Your Comments"
        android:inputType="text"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Write"
        android:id="@+id/externalstoragewritedatabtn"
```

```
        android:layout_below="@+id/externalstorageedittext"
        android:layout_margin="20dp"/>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Read"
        android:id="@+id/externalstoragereaddatabtn"
        android:layout_below="@+id/externalstorageedittext"
        android:layout_margin="20dp"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="20dp"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="External Storage Show Data"
        android:id="@+id/externalt2"
        android:textSize="20dp"
        android:layout_margin="10dp"
        android:textStyle="bold"
        android:layout_below="@+id/externalstoragewritedatabtn"
        />

</RelativeLayout>
```

4. SharedPreference

```
<?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=".SharedPreference"
    android:gravity="center">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Shared Preference Example"
        android:id="@+id/sharedpreferencet1"
        android:textSize="20dp"
        android:layout_margin="10dp"
        android:textStyle="bold"/>
</RelativeLayout>
```

5. SQLStorageExample

```
<?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=".SQLStorageExample"
android:gravity="center">

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="SQL Storage Example"
    android:id="@+id/sqlstoraget1"
    android:textSize="20dp"
    android:layout_margin="10dp"
    android:textStyle="bold"/>

</RelativeLayout>
```

->Java Files

1. MainActivity

```
ackage com.example.android_storage_example;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    Button sharedpreference;
    Button internal;
    Button external;
    Button sql;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        internal=findViewById(R.id.internalstorage);
        external=findViewById(R.id.externalstorage);
        sharedpreference=findViewById(R.id.sharedpreference);
        sql=findViewById(R.id.sqlstorage);
        internal.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent=new Intent(MainActivity.this,InternalStorageExample.class);
                startActivity(intent);
```

```java
        }
    });
    external.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent=new Intent(MainActivity.this,ExternalStorageExample.class);
            startActivity(intent);
        }
    });
    sharedpreference.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent=new Intent(MainActivity.this,SharedPreference.class);
            startActivity(intent);
        }
    });
    sql.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent=new Intent(MainActivity.this,SQLStorageExample.class);
            startActivity(intent);
        }
    });
  }
}
```

2. InternalStorageExample

package com.example.android_storage_example;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.nio.charset.StandardCharsets;

public class InternalStorageExample extends AppCompatActivity {

    Button writedata;
    Button readdata;
    EditText internalstorage;
    String filename="Internal_Storage_99.txt";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_internal_storage_example);
        writedata=findViewById(R.id.internalstoragewritedatabtn);
```

```java
        readdata=findViewById(R.id.internalstoragereaddatabtn);
        internalstorage=findViewById(R.id.internalstorageedittext);
        writedata.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try {
                    FileOutputStream fos=openFileOutput(filename,MODE_PRIVATE);
                    fos.write(internalstorage.getText().toString().getBytes());
                    fos.close();
                    internalstorage.setText("");
                } catch (FileNotFoundException e) {
                    e.printStackTrace();
                } catch (IOException e) {
                    e.printStackTrace();
                }
            }
        });
        readdata.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                StringBuffer stringbuffer=new StringBuffer();
                try {
                    FileInputStream fis=openFileInput(filename);
                    int i=0;
                    while((i=fis.read())!=-1){
                        stringbuffer.append(i);
                    }
                    fis.close();
                } catch (FileNotFoundException e) {
                    e.printStackTrace();
                } catch (IOException e) {
                    e.printStackTrace();
                }
                internalstorage.setText(stringbuffer);
            }
        });
    }
}
```

3. ExternalStorageExample

package com.example.android_storage_example;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import java.io.BufferedReader;
import java.io.File;

```java
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.FileReader;
import java.io.IOException;
import java.nio.charset.StandardCharsets;

public class ExternalStorageExample extends AppCompatActivity {

    Button writedata;
    Button readdata;
    EditText externalstorage;
    TextView externalstorageshowdata;
    String filename="";
    String filepath="";
    String filecontent="";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_extaernal_storage_example);
        writedata=findViewById(R.id.externalstoragewritedatabtn);
        readdata=findViewById(R.id.externalstoragereaddatabtn);
        externalstorage=findViewById(R.id.externalstorageedittext);
        externalstorageshowdata=findViewById(R.id.externalt2);
        filename="myExternalStorage.txt";
        filepath="myExternalStorageDir";
        writedata.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                externalstorageshowdata.setText("");
                filecontent=externalstorage.getText().toString().trim();
                if (!filecontent.equals("")){
                    File myexternalfile=new File(getExternalFilesDir(filepath),filename);
                    FileOutputStream fos=null;
                    try {
                        fos=new FileOutputStream(myexternalfile);
                        fos.write(filecontent.getBytes());
                    } catch (FileNotFoundException e) {
                        e.printStackTrace();
                    }

                    catch (IOException e) {
                        e.printStackTrace();
                    }
                    externalstorage.setText("");
                    Toast.makeText(ExternalStorageExample.this, "Information Saved Succesfully",
Toast.LENGTH_SHORT).show();
                }
                else {
                    Toast.makeText(ExternalStorageExample.this, "Text can not be Empty",
Toast.LENGTH_SHORT).show();
                }
            }
        });
        readdata.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```
        FileReader fr=null;
        File myexternalfile=new File(getExternalFilesDir(filepath),filename);
        StringBuilder stringbuilder=new StringBuilder();//line by line
        try {
            fr=new FileReader(myexternalfile);
            BufferedReader br=new BufferedReader(fr);
            String line=br.readLine();
            while (line!=null){
                stringbuilder.append(line).append("\n");
                line=br.readLine();
            }
        } catch (FileNotFoundException e) {
            e.printStackTrace();
        }
        catch (IOException e) {
            e.printStackTrace();
        }
        String filecontents=stringbuilder.toString();
        externalstorageshowdata.setText(filecontents);
        }
    });
    }
}
```

4. SharedPreference

```
package com.example.android_storage_example;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class SharedPreference extends AppCompatActivity {

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

5. SQLStorageExample

```
package com.example.android_storage_example;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
```

```java
public class SQLStorageExample extends AppCompatActivity {

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