Ex. No. 08 **Implement an application that writes data to the SD Card**
Date:

Aim:

To develop an Android Application that writes data to the SD Card.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"exno8**" and click Next.
- Then **select the Minimum SDK** as shown below and click Next.
- Then **select the Empty Activity** and click Next.
- Finally click **Finish**.
- It will take some time to build and load the project.
- After completion it will look as given below.

Designing layout for the Android Application:

- Click on **app -> res -> layout -> activity_main.xml**.
- Now click on Text as shown below.
- Then delete the code which is there and type the code as given below.

Code for Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:layout_margin="20dp"
  android:orientation="vertical">

<EditText
    android:id="@+id/editText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:singleLine="true"
    android:textSize="30dp" />

<Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```
    android:layout_margin="10dp"
    android:text="Write Data"
    android:textSize="30dp" />

<Button
    android:id="@+id/button2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Read data"
    android:textSize="30dp" />

<Button
    android:id="@+id/button3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Clear"
    android:textSize="30dp" />

</LinearLayout>
```

- Now click on Design and your application will look as given below.
- So now the designing part is completed.

Adding permissions in Manifest for the Android Application:

- Click on **app -> manifests -> AndroidManifest.xml.**
- Now include the WRITE_EXTERNAL_STORAGE permissions in the AndroidManifest.xml file as shown below.

Code for AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.exno8" >

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

<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
```

```
    android:supportsRtl="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>
```

- So now the Permissions are added in the Manifest.

Java Coding for the Android Application:

- Click on **app -> java -> com.example.exno8 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

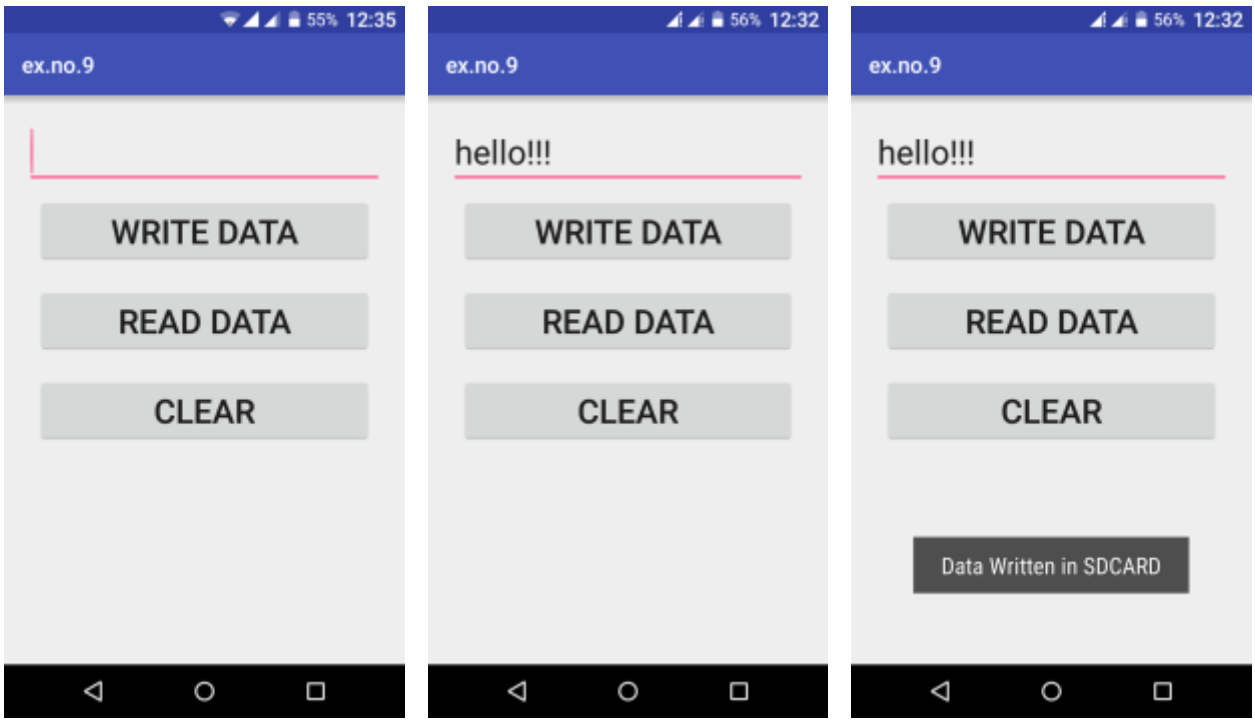
```
packagecom.example.exno8;

import android.os.Bundle;
//import android.support.v7.app.AppCompatActivity;
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.FileOutputStream;
import java.io.InputStreamReader;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity
{
  EditText e1;
  Button write,read,clear;
  @Override
  protected void onCreate(Bundle savedInstanceState)
  {
```

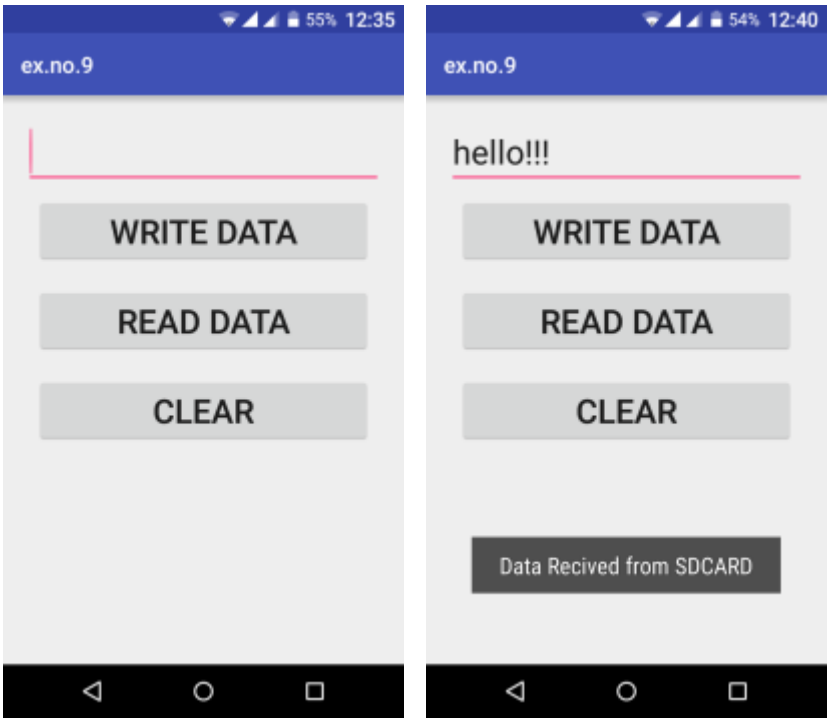
```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);

e1= (EditText) findViewById(R.id.editText);
write= (Button) findViewById(R.id.button);
read= (Button) findViewById(R.id.button2);
clear= (Button) findViewById(R.id.button3);

write.setOnClickListener(new View.OnClickListener()
{
  @Override
  public void onClick(View v)
  {
    String message=e1.getText().toString();
    try
    {
      File f=new File("/sdcard/myfile.txt");
      f.createNewFile();
      FileOutputStream fout=new FileOutputStream(f);
      fout.write(message.getBytes());
      fout.close();
      Toast.makeText(getBaseContext(),"Data Written in SDCARD",Toast.LENGTH_LONG).show();
    }
    catch (Exception e)
    {
      Toast.makeText(getBaseContext(),e.getMessage(),Toast.LENGTH_LONG).show();
    }
  }
});

read.setOnClickListener(new View.OnClickListener()
{
  @Override
  public void onClick(View v)
  {
    String message;
    String buf = "";
    try
    {
      File f = new File("/sdcard/myfile.txt");
      FileInputStream fin = new FileInputStream(f);
      BufferedReader br = new BufferedReader(new InputStreamReader(fin));
```

```
            while ((message = br.readLine()) != null)
            {
               buf += message;
            }
            e1.setText(buf);
            br.close();
            fin.close();
            Toast.makeText(getBaseContext(),"Data Recived from SDCARD",Toast.LENGTH_LONG).show();
          }
          catch (Exception e)
          {
            Toast.makeText(getBaseContext(), e.getMessage(), Toast.LENGTH_LONG).show();
          }
        }
      });

      clear.setOnClickListener(new View.OnClickListener()
      {
        @Override
        public void onClick(View v)
        {
          e1.setText("");
        }
      });
    }
}
```

- So now the Coding part is also completed.
- Now run the application to see the output.

Output:





Result:

Thus Android Application that writes data to the SD Card is developed and executed successfully.