Ex. No : 5

READ AND WRITE DATA ON SD CARD

Date:

AIM:

To develop an android application that read and write data to SD card using android studio and sdk.

PROCEDURE:

Step 1 : File → NewProject
Provide the application name and Click “Next”

Step 2 : Select the target android devices
Select the minimum SDK to run the application. Click “Next”.

Step 3 : Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4 : Enter activity name and click "Finish".

Step 5 : Edit the program.

Step 6 : Run the application, 2-ways to run the application.

1. Running through emulator
2. Running through mobile device

SOURCE CODE:-

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.administrator.ex5">

    <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>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.administrator.ex5.MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="40px"
        android:text="Read and Write Data"
        android:id="@+id/textView" />

    <EditText
        android:layout_width="match_parent"
        android:layout_height="200dp"
        android:layout_marginTop="20dp"
        android:id="@+id/E1"
```

```
        />

    <Button
        android:text="Save"
        android:layout_width="75dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="0dp"
        android:layout_marginTop="230dp"
        android:id="@+id/B1" />

    <Button
        android:text="Read"
        android:layout_width="75dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="80dp"
        android:layout_marginTop="230dp"
        android:id="@+id/B2" />

    <Button
        android:text="Clear"
        android:layout_width="75dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="160dp"
        android:layout_marginTop="230dp"
        android:id="@+id/B3" />

</RelativeLayout>
```

MainActivity.java

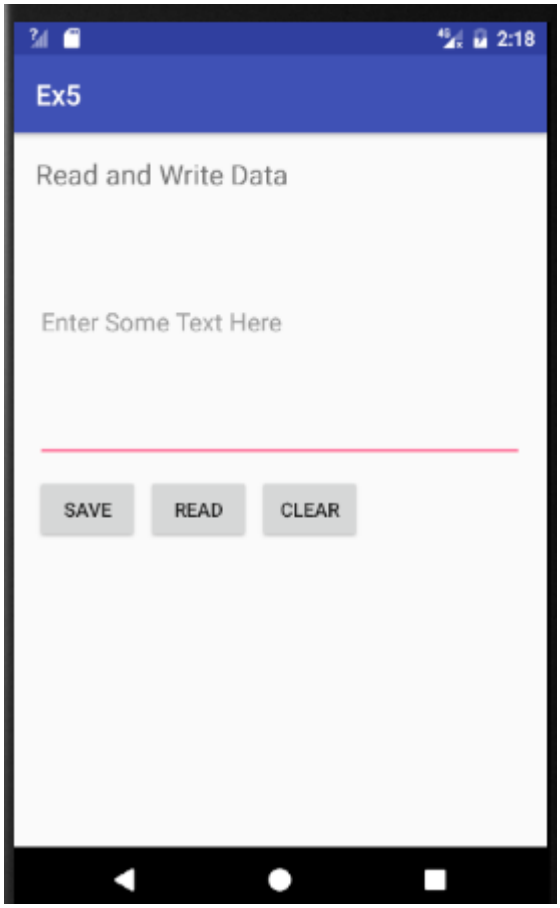
```
package com.example.administrator.ex5;

import android.os.Environment;
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.BufferedInputStream;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.InputStreamReader;
import java.io.OutputStream;
import java.io.OutputStreamWriter;

public class MainActivity extends AppCompatActivity {
    EditText E1;
    Button B1,B2,B3;

    String data;
    String filename="mydata.txt";
```

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

    E1 = (EditText) findViewById(R.id.E1);
    B1 = (Button) findViewById(R.id.B1);
    B2 = (Button) findViewById(R.id.B2);
    B3 = (Button) findViewById(R.id.B3);

    E1.setHint("Enter Some Text Here");

    B1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            //Write to External Storage
            //writeExternal();

            //Write to Internal Storage
            writeInternal();
        }
    });

    B2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            //Read from External Storage
            //readExternal();

            //Read from Internal Storage
            readInternal();
        }
    });

    B3.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            E1.setText("");
        }
    });

}

//Write External Storage
public void writeExternal()
{
    String data=E1.getText().toString();
    String path = Environment.getExternalStorageDirectory()
                        .getAbsolutePath();
    try {
        File file = new File(path + "/" + filename);
        FileOutputStream fos = new FileOutputStream(file);
        OutputStreamWriter osw = new OutputStreamWriter(fos);
        osw.append(data);
        osw.close();
```

```
            fos.close();
            Toast.makeText(getApplicationContext(), "File Saved: "
                    + path + "/" + filename, Toast.LENGTH_LONG).show();
        } catch (Exception e) {
            Toast.makeText(getApplicationContext(),
                    e.getMessage(), Toast.LENGTH_LONG).show();
        }
    }

    //Write Internal Storage
    public void writeInternal()
    {
        String data=E1.getText().toString();
        try
        {
            FileOutputStream fos=openFileOutput(
                            filename,MODE_ENABLE_WRITE_AHEAD_LOGGING);
            fos.write(data.getBytes());
            fos.close();
            Toast.makeText(getApplicationContext(),"File Saved: "
                            + filename,Toast.LENGTH_LONG).show();
        }
        catch (Exception e)
        {
            Toast.makeText(getApplicationContext(),e.getMessage(),
                            Toast.LENGTH_LONG).show();
        }
    }

    //Read External Storage
    public void readExternal()
    {
        String path = Environment.getExternalStorageDirectory()
                                    .getAbsolutePath();
        try {
            File file = new File(path + "/" + filename);
            FileInputStream fis = new FileInputStream(file);
            BufferedReader br = new BufferedReader(new
                                            InputStreamReader(fis));
            int c;
            String temp = "";
            while ((c = br.read()) != -1) {
                temp = temp + Character.toString((char) c);
            }
            E1.setText(temp);
            Toast.makeText(getApplicationContext(), "File Read: "
                    + path + "/" + filename, Toast.LENGTH_LONG).show();
        } catch (Exception e) {
            Toast.makeText(getApplicationContext(),
                            e.getMessage(), Toast.LENGTH_LONG).show();
        }
    }

    //Read Internal Storage
    public void readInternal()
    {
```

```
        int c;
        String temp="";
        try
        {
            FileInputStream fis=openFileInput(filename);
            while((c=fis.read())!=-1)
            {
                temp=temp+Character.toString((char)c);
            }
            E1.setText(temp);
            Toast.makeText(getApplicationContext(), "File Read: "
                            + filename, Toast.LENGTH_LONG).show();
        }
        catch (Exception e)
        {
            Toast.makeText(getApplicationContext(),
                            e.getMessage(), Toast.LENGTH_LONG).show();
        }
    }
}
```

OUTPUT:-



RESULT:

Thus the android application that read and write data to SD card using android studio and sdk was developed successfully.