Ex. No. : 06 **Date: 17.02.2025**

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SD Card

Aim

Implement an application to write the name and CGPA to SD card in text file format.

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 &quot;Finish&quot;.

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

AndroidManifest.xml

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
 package="com.example.ex6">

 <!-- Permissions for accessing external storage -->
 <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"  />
    <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE" />


 <application
 android:allowBackup="true"
 android:icon="@mipmap/ic_launcher"
 android:label="SD Card File Writer"
 android:theme="@style/Theme.Ex6">
 <!-- Main Activity -->
 <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>
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout

xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent"
```

```
android:layout_height="match_parent">

 <!-- EditText for entering Name -->
 <EditText

android:id="@+id/etName"

android:layout_width="match_parent"

android:layout_height="wrap_content"
 android:hint="Enter Name"

android:layout_marginTop ="50dp"

android:layout_alignParent
Top="true"

android:padding="16dp"/>

 <!-- EditText for entering  Marks --> <EditText
android:id="@+id/etMarks"
android:layout_width="match_parent"
android:layout_height="wrap_content"
 android:hint="Enter Marks"
android:inputType="number"
android:layout_below="@id/etName"
android:layout_marginTop="20dp"
android:padding="16dp"/>
<!-- Button to trigger the save action -->
 <Button
android:id="@+id/btnSaveData"
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
 android:text="Save Data"
android:layout_below="@id/etMarks"
android:layout_centerHorizontal="true"
android:layout_marginTop="20dp" />
</RelativeLayout>
```

MainActivity.kt

```
 package com.example.ex6
  import android.Manifest
import  android.content.pm.PackageManager
import android.os.Build
import android.os.Bundle
import  android.widget.EditText
import  android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
Import androidx.core.app.Activity
 Compat
import androidx.core.content.ContextCompat
import java.io.File
import
java.io.FileOutputStream
import java.io.IOException
class MainActivity :
AppCompatActivity() {
private val
REQUEST_CODE_STORA
 GE_PERMISSION = 1
 private lateinit var
etName: EditText
 private lateinit var
etMarks: EditText
```

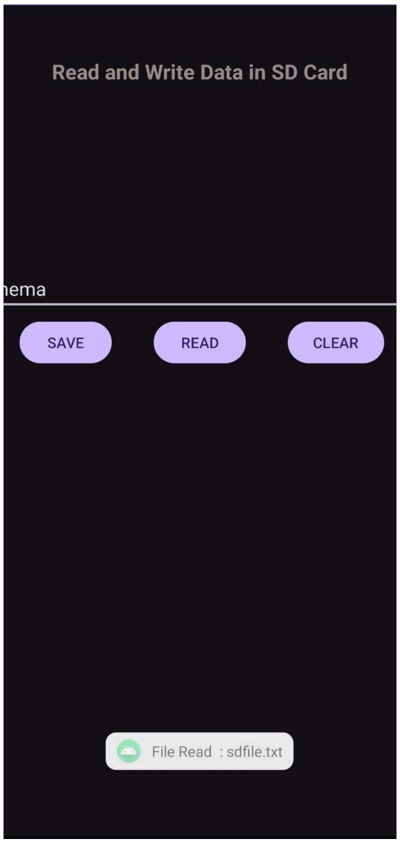
```
 override fun
onCreate(savedInstanceSta
te: Bundle?) {

super.onCreate(savedInsta
nceState)

setContentView(R.layout.a
ctivity_main)

 // Initialize the
EditText fields
 etName =
findViewById(R.id.etName)
 etMarks =
findViewById(R.id.etMarks
)
 .
 // Check for
permissions before
allowing the user to save
data
 if
(Build.VERSION.SDK_IN
T >=
Build.VERSION_CODES.
M) {
 if
(ContextCompat.checkSelf
Permission(
 this,
Manifest.permission.WRIT
E_EXTERNAL_STORAGE  ) !=
PackageManager.PERMIS
SION_GRANTED
 ) {

ActivityCompat.requestPer
missions(
 this,

arrayOf(Manifest.permissi
on.WRITE_EXTERNAL_S
TORAGE),

REQUEST_CODE_STORA
GE_PERMISSION
 )
 } else {
 // Permission is already granted, proceed to save data

setupSaveButton()
 }
 } else {
 // If on older
versions of Android,
permission is automatically
granted
 setupSaveButton()
 }
 }
 // Handle permission
result override fun onRequestPermissionsResu
lt(
 requestCode: Int,
 permissions:
```

```
Array<String>,
 grantResults:
IntArray
 ) {

super.onRequestPermissio
nsResult(requestCode,
permissions, grantResults)
 if (requestCode ==
REQUEST_CODE_STORA
GE_PERMISSION) {
 if (grantResults.isNotEmpty()
&& grantResults[0] ==
PackageManager.PERMIS
SION_GRANTED) {
 // Permission
granted, set up the save
button

setupSaveButton()
 } else {

Toast.makeText(this,
"Permission Denied",
Toast.LENGTH_SHORT).s
how()
 }
 }
 }

 // Setup button click to
save data to SD card
 private fun
```

```
setupSaveButton() {
 val btnSaveData =
findViewById<android.wid
get.Button>(R.id.btnSaveD
ata)

btnSaveData.setOnClickLi
stener {
 val name =
etName.text.toString()
 val marks =
etMarks.text.toString()

 if (name.isNotEmpty() &&marks.isNotEmpty()) {
 // Convert marks
to an integer
 val marksInt =
marks.toInt()

 // Write the data
to the file

writeToFile(name,
marksInt)
 } else {
 Toast.makeText(this,
"Please enter both name
and marks",
Toast.LENGTH_SHORT).s
how()
 }
 }
 }
```

```
// Function to write the name and marks to a text file private fun
   writeToFile(name: String,marks: Int) {
    try {
    // Get the file path
    val file =File(getExternalFilesDir(null), "student_marks.txt")
    // Open file output
   stream in append mode
    val fos = FileOutputStream(file,  true)
   // Prepare content to
   be written to the file
    val content = "Name: $name, Marks: $marks\n"
    fos.write(content.toByteArr ay())
    fos.close()
   Toast.makeText(this, "Data saved to SD card",
   Toast.LENGTH_SHORT).s
   how()
    } catch (e: IOException) {
   e.printStackTrace()
   Toast.makeText(this, "Failed to write to file", Toast.LENGTH_SHORT).s
   how()
    }
    }
   }
```

Output :



Read and Write Data in SD Card

nema

File Read : sdfile.txt

Result:

The Application was developed using Kotlin in Android Studio.