**SSN COLLEGE OF ENGINEERING**

**DEPARTMENT OF CSE**

**VII SEMESTER – CSE 'A' & ‘B’ SECTION**

**UCS1711- MOBILE APPLICATION DEVELOPMENT LAB**

**ACADEMIC YEAR: 2023-2024 (ODD) BATCH: 2020-2024**

**Due Date: 22.8.23 & 24.8.23**

**Ex. No. 7 Writing to and Reading from the SD Card**

**Objective :**

To develop an android application to read the text from the SD Card and Write into the SD Card.

**MainActivity.java**

package com.example.ex7;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.app.ActivityCompat;

import android.content.DialogInterface;

import android.content.Intent;

import android.content.pm.PackageManager;

import android.os.Build;

import android.os.Bundle;

import android.os.Environment;

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;

import java.io.FileNotFoundException;

import java.io.FileOutputStream;

import java.io.FileReader;

import java.io.IOException;

import java.io.OutputStreamWriter;

public class MainActivity extends AppCompatActivity {

// Declare the View object references

Button btnSave, btnLoad;

EditText content, filenamev;

TextView tvLoad;

// Define some String variables, initialized with empty string

String filepath = "";

String filename = "";

String fileContent = "";

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

btnSave = findViewById(R.id.writebtn);

btnLoad = findViewById(R.id.btnLoad);

content = findViewById(R.id.content);

filenamev = findViewById(R.id.filename);

filepath = "NewDirectory";

if(!isExternalStorageAvailableForRW()){

btnSave.setEnabled(false);

}

btnSave.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

fileContent = content.getText().toString().trim();

filename = filenamev.getText().toString().trim();

// Check for Storage Permission

if(isStoragePermissionGranted()){

if(!fileContent.equals("")){

File myExternalFile = new File(getExternalFilesDir(filepath), filename);

FileOutputStream fos = null;

try {

fos = new FileOutputStream(myExternalFile);

fos.write(fileContent.getBytes());

fos.close();

} catch (FileNotFoundException e) {

e.printStackTrace();

} catch (IOException e) {

e.printStackTrace();

}

content.setText("");

filenamev.setText("");

// Show a Toast message to inform the user that the operation has been successfully completed.

Toast.makeText(MainActivity.this, "File saved to SD card.", Toast.LENGTH\_SHORT).show();

} else{

// If the Text field is empty show corresponding Toast message

Toast.makeText(MainActivity.this, "Text field can not be empty.", Toast.LENGTH\_SHORT).show();

}

}

}

});

btnLoad.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent myIntent = new Intent(MainActivity.this, ReadFile.class);

MainActivity.this.startActivity(myIntent);

}

});

}

public boolean isStoragePermissionGranted() {

if (Build.VERSION.SDK\_INT >= Build.VERSION\_CODES.M) {

if (checkSelfPermission(android.Manifest.permission.WRITE\_EXTERNAL\_STORAGE)

== PackageManager.PERMISSION\_GRANTED) {

//Permission is granted

return true;

} else {

//Permission is revoked

ActivityCompat.requestPermissions(this, new String[]{android.Manifest.permission.WRITE\_EXTERNAL\_STORAGE}, 1);

return false;

}

}

else {

//permission is automatically granted on sdk<23 upon installation

//Permission is granted

return true;

}

}

private boolean isExternalStorageAvailableForRW() {

// Check if the external storage is available for read and write by calling

// MEDIA\_M/O/UNETnEvDi,ronment.getExternalStorageState() method. If the returned state is

// then you can read and write files. So, return true in that case, otherwise, false.

String extStorageState = Environment.getExternalStorageState();

if(extStorageState.equals(Environment.MEDIA\_MOUNTED)){

return true;

}

return false;

}

}

**activity\_main.xml**

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

xmlns:app="http://schemas.android.com/apk/res-auto"

tools:context=".MainActivity">

<TextView

android:id="@+id/title"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="SD Card App"

android:textAppearance="@style/TextAppearance.AppCompat.Display1"

android:textColor="#007565"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintHorizontal\_bias="0.497"

app:layout\_constraintLeft\_toLeftOf="parent"

app:layout\_constraintRight\_toRightOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.064" />

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="36dp"

android:layout\_marginEnd="108dp"

android:text="Write contents into a file"

android:textAppearance="@style/TextAppearance.AppCompat.Medium"

android:textColor="#00BFA5"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/title" />

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="80dp"

android:layout\_marginEnd="152dp"

android:text="File contents:"

android:textAppearance="@style/TextAppearance.AppCompat.Medium"

android:textColor="#304FFE"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/title" />

<TextView

android:id="@+id/textView3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="180dp"

android:layout\_marginEnd="256dp"

android:text="File Name:"

android:textAppearance="@style/TextAppearance.AppCompat.Medium"

android:textColor="#304FFE"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/title" />

<EditText

android:id="@+id/content"

android:layout\_width="326dp"

android:layout\_height="44dp"

android:layout\_marginTop="16dp"

android:layout\_marginEnd="40dp"

android:ems="10"

android:gravity="start|top"

android:inputType="textMultiLine"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/textView2" />

<EditText

android:id="@+id/filename"

android:layout\_width="163dp"

android:layout\_height="38dp"

android:layout\_marginTop="76dp"

android:layout\_marginEnd="60dp"

android:ems="10"

android:gravity="start|top"

android:inputType="textMultiLine"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/textView2" />

<Button

android:id="@+id/writebtn"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="32dp"

android:layout\_marginEnd="156dp"

android:backgroundTint="#00BFA5"

android:text="Write File"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/filename" />

<Button

android:id="@+id/btnLoad"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="152dp"

android:layout\_marginEnd="136dp"

android:backgroundTint="#00BFA5"

android:text="Load From File"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/filename" />

</androidx.constraintlayout.widget.ConstraintLayout>

**ReadFile.java**

package com.example.ex7;

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 java.io.BufferedReader;

import java.io.File;

import java.io.FileNotFoundException;

import java.io.FileReader;

import java.io.IOException;

public class ReadFile extends AppCompatActivity { Button btnLoad;

TextView tvLoad; EditText filenamev; String filename = "";

String filepath = "NewDirectory";

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_read\_file);

btnLoad = findViewById(R.id.loadbtn); filenamev = findViewById(R.id.filename2); tvLoad = findViewById(R.id.tvLoad);

btnLoad.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View view) {

filename = filenamev.getText().toString().trim();

FileReader fr = null;

File myExternalFile = new File(getExternalFilesDir(filepath), filename);

StringBuilder stringBuilder = new StringBuilder();

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();

} finally {

String fileContents = stringBuilder.toString(); tvLoad.setText(fileContents);

}

}

});

}

}

**activity\_read\_file.xml**

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

<androidx.constraintlayout.widget.ConstraintLayout

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=".ReadFile">

<EditText

android:id="@+id/filename2" android:layout\_width="163dp" android:layout\_height="38dp" android:layout\_marginTop="28dp" android:layout\_marginEnd="52dp" android:ems="10" android:gravity="start|top" android:inputType="textMultiLine" app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/textView6" />

<TextView

android:id="@+id/textView4" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginTop="40dp" android:layout\_marginEnd="152dp" android:text="File contents:"

android:textAppearance="@style/TextAppearance.AppCompat.Medium" android:textColor="#304FFE" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintTop\_toBottomOf="@+id/loadbtn" />

<TextView

android:id="@+id/title2" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginTop="44dp" android:layout\_marginEnd="108dp" android:text="SD Card App"

android:textAppearance="@style/TextAppearance.AppCompat.Display1" android:textColor="#007565" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintTop\_toTopOf="parent" />

<TextView

android:id="@+id/textView5" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginStart="100dp"

android:layout\_marginTop="28dp"

android:text="File Name:" android:textAppearance="@style/TextAppearance.AppCompat.Medium" android:textColor="#304FFE" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toBottomOf="@+id/textView6" />

<Button

android:id="@+id/loadbtn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginTop="36dp" android:layout\_marginEnd="148dp" android:backgroundTint="#00BFA5" android:text="LOAD FILE" app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/filename2" />

<TextView

android:id="@+id/textView6" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginTop="20dp" android:layout\_marginEnd="104dp" android:text="Read contents From File"

android:textAppearance="@style/TextAppearance.AppCompat.Medium" android:textColor="#00BFA5" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintTop\_toBottomOf="@+id/title2" />

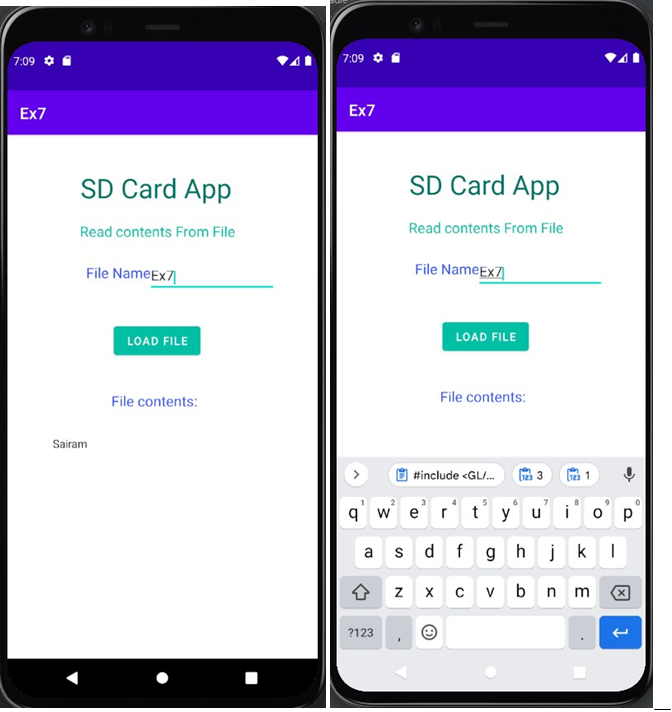
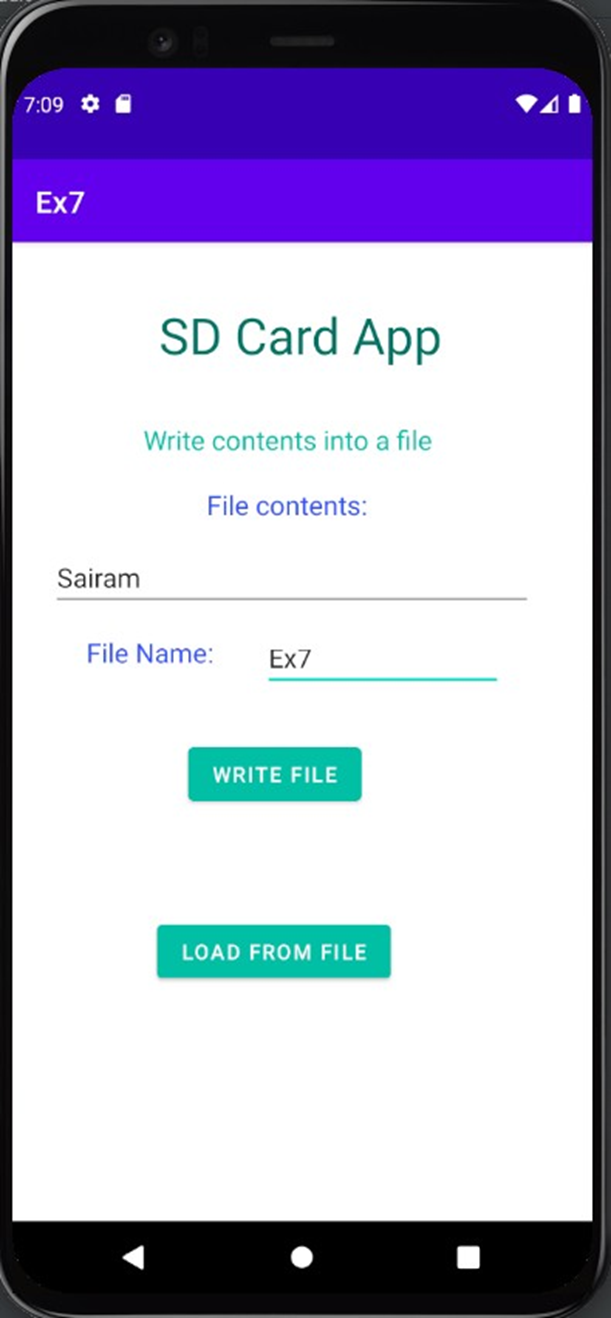
<TextView

android:id="@+id/tvLoad" android:layout\_width="283dp" android:layout\_height="116dp" android:layout\_marginTop="32dp" android:layout\_marginEnd="52dp"

android:textAppearance="@style/TextAppearance.AppCompat.Body1" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintTop\_toBottomOf="@+id/textView4" />

</androidx.constraintlayout.widget.ConstraintLayout>

**Output Screenshots :**

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