RAJALAKSHMI ENGINEERING COLLEGE RAJALAKSHMI NAGAR, THANDALAM – 602 105



CS19611

Mobile Application Development Laboratory

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| Laboratory Record Note Book |

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| Name : . . . . . . . . .TAMILINI D K . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Year / Branch / Section : . . .III / BE CSE D . . . . . . . . . . . . . . . . . . . . . . . . . Register No. : . . 220701299. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Semester : . . . . . . . 06 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Academic Year : . . . . . . . 2025-26 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . |

RAJALAKSHMI ENGINEERING COLLEGE RAJALAKSHMI NAGAR, THANDALAM – 602 105

BONAFIDE CERTIFICATE

Name : . . . . . . . . . . . . . . . .TAMILINI D K . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Academic Year : . . 2025-26 . . . Semester : .. . 06. . . Branch : . . BE CSE D. .

Register No.

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| --- |
| 220701299 |

Certified that this is the bonafide record of work done by the above student in the CS19611 Mobile Application Development Laboratory during the year 2025 - 2026

Signature of Faculty in-charge

Submitted for the Practical Examination held on . . . . . . .14/05/2025 . . . . . . . .

Internal Examiner External Examiner

Dept. of Computer Science and Engineering | Rajalakshmi Engineering College 3

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Reg. No. : \_\_220701331\_\_\_\_\_\_\_ Name : \_\_\_\_\_\_SHIIV R S\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Year : \_\_\_\_\_3rd\_\_ Branch : BE CSE Sec : \_\_D\_\_

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Ex. No. : 01 Date :

Register No. : Name :

GUI Components

Aim

Develop an application to change the font and color of the text and display toast message when the user presses the button.

Procedure

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.GUIComponents"

tools:targetApi="31">

<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>

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activity\_main.xml

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

<LinearLayout 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:id="@+id/linearLayout"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

tools:context=".MainActivity" >

<TextView

android:id="@+id/tvText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Rajalakshmi Engineering College" android:textAlignment="center"

android:textSize="16sp" />

<Button

android:id="@+id/btFontSize"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:inputType="textCapSentences"

android:text="Change Font Size"

android:textSize="16sp" />

<Button

android:id="@+id/btFontColor"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:inputType="textCapSentences"

android:text="Change Font Color"

android:textSize="16sp" />

<Button

android:id="@+id/btBackgroundColor"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:inputType="textCapSentences"

android:text="Change Background Color"

android:textSize="16sp" />

</LinearLayout>

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MainActivity.kt

package org.rajalakshmi.guicomponents

import android.graphics.Color

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Button

import android.widget.LinearLayout

import android.widget.TextView

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val tvText : TextView = findViewById(R.id.tvText)

val btFontSize : Button = findViewById(R.id.btFontSize) val btFontColor : Button = findViewById(R.id.btFontColor) val btBackgroundColor : Button = findViewById(R.id.btBackgroundColor) val linearLayout : LinearLayout = findViewById(R.id.linearLayout)

var fontSize : Float = 5f

var fontColor : Int = 0

var backgroundColor : Int = 0

btFontSize.setOnClickListener {

tvText.setTextSize(fontSize)

fontSize = (fontSize + 5) % 50

}

btFontColor.setOnClickListener {

when(fontColor % 3) {

0 -> tvText.setTextColor(Color.RED)

1 -> tvText.setTextColor(Color.GREEN)

2 -> tvText.setTextColor(Color.BLUE)

}

fontColor++

}

btBackgroundColor.setOnClickListener {

when(backgroundColor % 3) {

0 -> linearLayout.setBackgroundColor(Color.RED) 1 -> linearLayout.setBackgroundColor(Color.GREEN) 2 -> linearLayout.setBackgroundColor(Color.BLUE) }

backgroundColor++

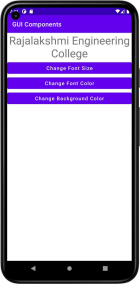
}

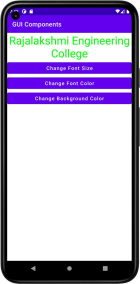
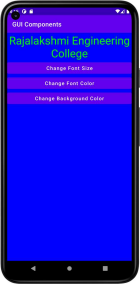
}

}

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Output

Result

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| --- |
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Ex. No. : 02 Date :

Register No. : Name :

Simple Calculator

Aim

Develop a simple calculator to perform arithmetic and mathematical functions using Math class.

Procedure

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| --- |
|  |

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.SimpleCalculator"

tools:targetApi="31">

<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>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity">

<TextView

android:id="@+id/tvExpression"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:textSize="60sp" />

<TextView

android:id="@+id/tvResult"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:textSize="60sp" />

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="50dp"

android:orientation="horizontal">

<Button

android:id="@+id/btSeven"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:text="7" />

<Button

android:id="@+id/btEight"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:text="8" />

<Button

android:id="@+id/btNine"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:text="9" />

<Button

android:id="@+id/btDivision"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:text="/" />

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="50dp"

android:orientation="horizontal">

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<Button

android:id="@+id/btFour" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="4" />

<Button

android:id="@+id/btFive" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="5" />

<Button

android:id="@+id/btSix"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="6" />

<Button

android:id="@+id/btMultiplication" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="X" />

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent" android:layout\_height="50dp" android:orientation="horizontal">

<Button

android:id="@+id/btOne"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="1" />

<Button

android:id="@+id/btTwo"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="2" />

<Button

android:id="@+id/btThree" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="3" />

<Button

android:id="@+id/btSubtraction" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="-" />

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</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent" android:layout\_height="50dp" android:orientation="horizontal">

<Button

android:id="@+id/btDecimal" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="." />

<Button

android:id="@+id/btZero" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="0" />

<Button

android:id="@+id/btEqual" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="=" />

<Button

android:id="@+id/btAddition" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" android:text="+" />

</LinearLayout>

<Button

android:id="@+id/btClear"

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Clear"

android:textAllCaps="false" /> </LinearLayout>

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MainActivity.xml

package org.rajalakshmi.simplecalculator

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Button

import android.widget.TextView

class MainActivity : AppCompatActivity() {

var input1 :Double = 0.0

var input2 :Double = 0.0

var addition : Boolean = false

var subtraction : Boolean = false

var multiplication : Boolean = false

var division : Boolean = false

var decimal : Boolean = false

override fun onCreate(savedInstanceState: Bundle?) { super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val tvExpression : TextView = findViewById(R.id.tvExpression) val tvResult : TextView = findViewById(R.id.tvResult) val btZero : Button = findViewById(R.id.btZero)

val btOne : Button = findViewById(R.id.btOne)

val btTwo : Button = findViewById(R.id.btTwo)

val btThree : Button = findViewById(R.id.btThree) val btFour : Button = findViewById(R.id.btFour)

val btFive : Button = findViewById(R.id.btFive)

val btSix : Button = findViewById(R.id.btSix)

val btSeven : Button = findViewById(R.id.btSeven) val btEight : Button = findViewById(R.id.btEight) val btNine : Button = findViewById(R.id.btNine)

val btAddition : Button = findViewById(R.id.btAddition) val btSubtraction : Button = findViewById(R.id.btSubtraction) val btMultiplication : Button = findViewById(R.id.btMultiplication) val btDivision : Button = findViewById(R.id.btDivision) val btDecimal : Button = findViewById(R.id.btDecimal) val btEqual : Button = findViewById(R.id.btEqual) val btClear : Button = findViewById(R.id.btClear)

btZero.setOnClickListener {

tvExpression.setText("${tvExpression.text}0") }

btOne.setOnClickListener {

tvExpression.setText("${tvExpression.text}1") }

btTwo.setOnClickListener {

tvExpression.setText("${tvExpression.text}2") }

btThree.setOnClickListener {

tvExpression.setText("${tvExpression.text}3") }

btFour.setOnClickListener {

tvExpression.setText("${tvExpression.text}4") }

btFive.setOnClickListener {

tvExpression.setText("${tvExpression.text}5") }

btSix.setOnClickListener {

tvExpression.setText("${tvExpression.text}6")

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}

btSeven.setOnClickListener {

tvExpression.setText("${tvExpression.text}7") }

btEight.setOnClickListener {

tvExpression.setText("${tvExpression.text}8") }

btNine.setOnClickListener {

tvExpression.setText("${tvExpression.text}9") }

btDecimal.setOnClickListener {

if(!decimal) {

tvExpression.setText("${tvExpression.text}.") decimal = true

}

}

btAddition.setOnClickListener {

if (tvExpression.getText().length != 0) { input1 = "${tvExpression.text}".toDouble() addition = true

decimal = false

tvExpression.setText(null)

}

}

btSubtraction.setOnClickListener {

if (tvExpression.getText().length != 0) { input1 = "${tvExpression.text}".toDouble() subtraction = true

decimal = false

tvExpression.setText(null)

}

}

btMultiplication.setOnClickListener {

if (tvExpression.getText().length != 0) { input1 = "${tvExpression.text}".toDouble() multiplication = true

decimal = false

tvExpression.setText(null)

}

}

btDivision.setOnClickListener {

if (tvExpression.getText().length != 0) { input1 = "${tvExpression.text}".toDouble() division = true

decimal = false

tvExpression.setText(null)

}

}

btEqual.setOnClickListener() {

input2 = "${tvExpression.text}".toDouble() if (addition) {

tvExpression.setText("${input1} + ${input2}") val raddition : Double = input1 + input2 tvResult.setText("${raddition}") addition = false

}

if (subtraction) {

tvExpression.setText("${input1} - ${input2}") val rsubtraction : Double = input1 - input2 tvResult.setText("${rsubtraction}") subtraction = false

}

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if (multiplication) {

tvExpression.setText("${input1} \* ${input2}") val rmultiplication : Double = input1 \* input2 tvResult.setText("${rmultiplication}") multiplication = false

}

if (division) {

tvExpression.setText("${input1} / ${input2}") val rdivision : Double = input1 / input2 tvResult.setText("${rdivision}") division = false

}

}

btClear.setOnClickListener {

tvExpression.setText("")

tvResult.setText("")

input1 = 0.0

input2 = 0.0

decimal = false

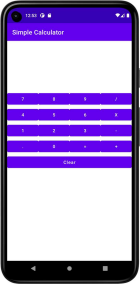
}

}

}

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Output

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Ex. No. : 03 Date :

Register No. : Name :

Graphical Primitives

Aim

Develop an android application to draw the circle, ellipse, rectangle and some text using Android Graphical primitives.

Procedure

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.GraphicalPrimitives"

tools:targetApi="31">

<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>

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activity\_main.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=".MainActivity">

<org.rajalakshmi.graphicalprimitives.SampleCanvas android:layout\_width="match\_parent"

android:layout\_height="match\_parent"> </org.rajalakshmi.graphicalprimitives.SampleCanvas> </androidx.constraintlayout.widget.ConstraintLayout>

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MainActivity.kt

package org.rajalakshmi.graphicalprimitives

import androidx.appcompat.app.AppCompatActivity import android.os.Bundle

class MainActivity : AppCompatActivity() { override fun onCreate(savedInstanceState: Bundle?) { super.onCreate(savedInstanceState) setContentView(R.layout.activity\_main) }

}

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SampleCanvas.kt

package org.rajalakshmi.graphicalprimitives

import android.content.Context

import android.graphics.Canvas

import android.graphics.Color

import android.graphics.Paint

import android.util.AttributeSet

import android.view.View

class SampleCanvas @JvmOverloads constructor(

context: Context, attrs: AttributeSet? = null, defStyleAttr: Int = 0 ) : View(context, attrs, defStyleAttr) {

override fun onDraw(canvas: Canvas?) {

super.onDraw(canvas)

val paint : Paint = Paint()

paint.setColor(Color.YELLOW)

canvas?.drawPaint(paint)

paint.setTextSize(50f);

paint.setColor(Color.RED);

canvas?.drawText("Circle", 120f, 150f, paint); canvas?.drawCircle(200f, 350f, 150f, paint);

paint.setColor(Color.GREEN);

canvas?.drawText("Rectangle", 420f, 150f, paint); canvas?.drawRect(400f, 200f, 650f, 700f, paint); paint.setColor(Color.BLUE);

canvas?.drawText("Square", 120f, 800f, paint); canvas?.drawRect(50f, 850f, 350f, 1150f, paint); paint.setColor(Color.BLACK);

canvas?.drawText("Line", 480f, 800f, paint);

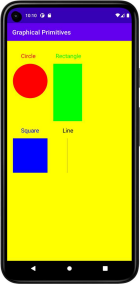
canvas?.drawLine(520f, 850f, 520f, 1150f, paint);

}

}

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Output



Result

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| --- |
|  |

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Ex. No. : 04 Date :

Register No. : Name :

Android Fragments

Aim

Develop an android application to create two activities named as Student Basic Details (Register No., Name, Department) and Student Mark Details (SSLC, HSC, UG). Write an android code to combine these two activities in single screen using android fragment.

Procedure

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.AndroidFragments"

tools:targetApi="31">

<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>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity">

<TextView

android:id="@+id/tvTitle"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Student Details"

android:textAlignment="center"

android:textSize="24sp" />

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical">

<fragment

android:id="@+id/fragmentBasic"

android:name="org.rajalakshmi.androidfragments.StudentBasicDetails" android:layout\_width="match\_parent"

android:layout\_height="300dp" />

<fragment

android:id="@+id/fragmentMark"

android:name="org.rajalakshmi.androidfragments.StudentMarkDetails" android:layout\_width="match\_parent"

android:layout\_height="300dp" />

</LinearLayout>

</LinearLayout>

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fragment\_student\_basic\_details.xml

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

<FrameLayout 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"

tools:context=".StudentBasicDetails">

<TextView

android:id="@+id/tvBasicDetails"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Basic Details"

android:textAlignment="center"

android:textSize="24sp" />

<TextView

android:id="@+id/tvRegisterNumber"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="50dp"

android:text="Register No." />

<EditText

android:id="@+id/etRegisterNumber"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:layout\_marginTop="50dp"

android:ems="10"

android:hint="Register Number"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvName"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="125dp"

android:text="Name" />

<EditText

android:id="@+id/etName"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:layout\_marginTop="125dp"

android:ems="10"

android:hint="Name"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvDepartment"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="200dp"

android:text="Department" />

<EditText

android:id="@+id/etDepartment"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:layout\_marginTop="200dp"

android:ems="10"

android:hint="Department"

android:inputType="textPersonName" />

</FrameLayout>

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fragment\_student\_mark\_details.xml

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

<FrameLayout 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"

tools:context=".StudentMarkDetails">

<TextView

android:id="@+id/tvBasicDetails"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Mark Details"

android:textAlignment="center"

android:textSize="24sp" />

<TextView

android:id="@+id/tvSSLC"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="50dp"

android:text="S.S.L.C." />

<EditText

android:id="@+id/etSSLC"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:layout\_marginTop="50dp"

android:ems="10"

android:hint="S.S.L.C. Mark"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvHSc"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="125dp"

android:text="H.Sc." />

<EditText

android:id="@+id/etHSC"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:layout\_marginTop="125dp"

android:ems="10"

android:hint="H.Sc. Mark"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvUG"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="200dp"

android:text="U.G." />

<EditText

android:id="@+id/etUG"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:layout\_marginTop="200dp"

android:ems="10"

android:hint="U.G. C.G.P.A."

android:inputType="textPersonName" />

</FrameLayout>

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MainActivity.kt

package org.rajalakshmi.androidfragments

import androidx.appcompat.app.AppCompatActivity import android.os.Bundle

class MainActivity : AppCompatActivity() { override fun onCreate(savedInstanceState: Bundle?) { super.onCreate(savedInstanceState) setContentView(R.layout.activity\_main) }

}

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StudentBasicDetails.kt

package org.rajalakshmi.androidfragments

import android.os.Bundle

import androidx.fragment.app.Fragment

import android.view.LayoutInflater

import android.view.View

import android.view.ViewGroup

// TODO: Rename parameter arguments, choose names that match // the fragment initialization parameters, e.g. ARG\_ITEM\_NUMBER private const val ARG\_PARAM1 = "param1"

private const val ARG\_PARAM2 = "param2"

/\*\*

\* A simple [Fragment] subclass.

\* Use the [StudentBasicDetails.newInstance] factory method to \* create an instance of this fragment.

\*/

class StudentBasicDetails : Fragment() {

// TODO: Rename and change types of parameters

private var param1: String? = null

private var param2: String? = null

override fun onCreate(savedInstanceState: Bundle?) { super.onCreate(savedInstanceState)

arguments?.let {

param1 = it.getString(ARG\_PARAM1)

param2 = it.getString(ARG\_PARAM2)

}

}

override fun onCreateView(

inflater: LayoutInflater, container: ViewGroup?, savedInstanceState: Bundle?

): View? {

// Inflate the layout for this fragment

return inflater.inflate(R.layout.fragment\_student\_basic\_details, container, false)

}

companion object {

/\*\*

\* Use this factory method to create a new instance of \* this fragment using the provided parameters. \*

\* @param param1 Parameter 1.

\* @param param2 Parameter 2.

\* @return A new instance of fragment StudentBasicDetails. \*/

// TODO: Rename and change types and number of parameters @JvmStatic

fun newInstance(param1: String, param2: String) = StudentBasicDetails().apply {

arguments = Bundle().apply {

putString(ARG\_PARAM1, param1)

putString(ARG\_PARAM2, param2)

}

}

}

}

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StudentMarkDetails.kt

package org.rajalakshmi.androidfragments

import android.os.Bundle

import androidx.fragment.app.Fragment

import android.view.LayoutInflater

import android.view.View

import android.view.ViewGroup

// TODO: Rename parameter arguments, choose names that match // the fragment initialization parameters, e.g. ARG\_ITEM\_NUMBER private const val ARG\_PARAM1 = "param1"

private const val ARG\_PARAM2 = "param2"

/\*\*

\* A simple [Fragment] subclass.

\* Use the [StudentMarkDetails.newInstance] factory method to \* create an instance of this fragment.

\*/

class StudentMarkDetails : Fragment() {

// TODO: Rename and change types of parameters

private var param1: String? = null

private var param2: String? = null

override fun onCreate(savedInstanceState: Bundle?) { super.onCreate(savedInstanceState)

arguments?.let {

param1 = it.getString(ARG\_PARAM1)

param2 = it.getString(ARG\_PARAM2)

}

}

override fun onCreateView(

inflater: LayoutInflater, container: ViewGroup?, savedInstanceState: Bundle?

): View? {

// Inflate the layout for this fragment

return inflater.inflate(R.layout.fragment\_student\_mark\_details, container, false)

}

companion object {

/\*\*

\* Use this factory method to create a new instance of \* this fragment using the provided parameters. \*

\* @param param1 Parameter 1.

\* @param param2 Parameter 2.

\* @return A new instance of fragment StudentMarkDetails. \*/

// TODO: Rename and change types and number of parameters @JvmStatic

fun newInstance(param1: String, param2: String) = StudentMarkDetails().apply {

arguments = Bundle().apply {

putString(ARG\_PARAM1, param1)

putString(ARG\_PARAM2, param2)

}

}

}

}

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Output



Result

|  |
| --- |
|  |

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Ex. No. : 05 Date :

Register No. : Name :

SQLite

Aim

Create a Database table with the following structure using SQLite: Student (Register Number, Name, CGPA). Develop an android application to perform the following operation using SQLite developer classes. 1. Insert student Details 2. Update the student Record 3. Delete a specified record. 4. View the details.

Procedure

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| --- |
|  |

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.SQLite"

tools:targetApi="31">

<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>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity" >

<TextView

android:id="@+id/tvRegisterNumber"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Register Number" />

<EditText

android:id="@+id/etRegisterNumber"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvName"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Name" />

<EditText

android:id="@+id/etName"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvCGPA"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="CGPA" />

<EditText

android:id="@+id/etCGPA"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName" />

<Button

android:id="@+id/btAdd"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Add"

android:textAllCaps="false" />

<Button

android:id="@+id/btView"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

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android:text="View"

android:textAllCaps="false" />

<Button

android:id="@+id/btModify" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Modify"

android:textAllCaps="false" />

<Button

android:id="@+id/btDelete" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Delete"

android:textAllCaps="false" />

<Button

android:id="@+id/btClear" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Clear"

android:textAllCaps="false" /> </LinearLayout>

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DBContract.kt

package org.rajalakshmi.sqlite

import android.provider.BaseColumns

object DBContract {

class UserEntry : BaseColumns {

companion object {

val TABLE\_NAME = "students"

val COLUMN\_REGISTER\_NUMBER = "registernumber" val COLUMN\_NAME = "name"

val COLUMN\_CGPA = "cgpa"

}

}

}

UserModel.kt

package org.rajalakshmi.sqlite

class UserModel (val registernumber : String, val name : String, val cgpa : String)

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UsersDBHelper.kt

package org.rajalakshmi.sqlite

import android.annotation.SuppressLint

import android.content.ContentValues

import android.content.Context

import android.database.Cursor

import android.database.sqlite.SQLiteConstraintException

import android.database.sqlite.SQLiteDatabase

import android.database.sqlite.SQLiteException

import android.database.sqlite.SQLiteOpenHelper

class UsersDBHelper(context: Context) : SQLiteOpenHelper(context, DATABASE\_NAME, null, DATABASE\_VERSION) {

override fun onCreate(db: SQLiteDatabase?) {

db?.execSQL(SQL\_CREATE\_ENTRIES)

}

override fun onUpgrade(db: SQLiteDatabase?, oldVersion: Int, newVersion: Int) {

db?.execSQL(SQL\_DELETE\_ENTRIES)

onCreate(db)

}

@Throws(SQLiteConstraintException::class)

fun insertUser(user: UserModel): Boolean {

// Gets the data repository in write mode

val db = writableDatabase

// Create a new map of values, where column names are the keys val values = ContentValues()

values.put(DBContract.UserEntry.COLUMN\_REGISTER\_NUMBER, user.registernumber)

values.put(DBContract.UserEntry.COLUMN\_NAME, user.name) values.put(DBContract.UserEntry.COLUMN\_CGPA, user.cgpa)

// Insert the new row, returning the primary key value of the new row val newRowId = db.insert(DBContract.UserEntry.TABLE\_NAME, null, values)

return true

}

@SuppressLint("Range")

fun readUser(registerNumber : String): ArrayList<UserModel> { val users = ArrayList<UserModel>()

val db = writableDatabase

var cursor: Cursor? = null

try {

cursor = db.rawQuery("select \* from " +

DBContract.UserEntry.TABLE\_NAME + " WHERE " +

DBContract.UserEntry.COLUMN\_REGISTER\_NUMBER + " = '" + registerNumber + "'", null)

}

catch (e: SQLiteException) {

db.execSQL(SQL\_CREATE\_ENTRIES)

return ArrayList()

}

var name : String

var cgpa : String

if (cursor!!.moveToFirst()) {

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while (cursor.isAfterLast == false) {

name =

cursor.getString(cursor.getColumnIndex(DBContract.UserEntry.COLUMN\_NAME)) cgpa =

cursor.getString(cursor.getColumnIndex(DBContract.UserEntry.COLUMN\_CGPA)) users.add(UserModel(registerNumber, name, cgpa)) cursor.moveToNext()

}

}

return users

}

@Throws(SQLiteConstraintException::class)

fun deleteUser(userid: String): Boolean {

val db = writableDatabase

val selection = DBContract.UserEntry.COLUMN\_REGISTER\_NUMBER + " LIKE ?" val selectionArgs = arrayOf(userid)

db.delete(DBContract.UserEntry.TABLE\_NAME, selection, selectionArgs) return true

}

companion object {

// If you change the database schema, you must increment the database version.

val DATABASE\_VERSION = 1

val DATABASE\_NAME = "FeedReader.db"

private val SQL\_CREATE\_ENTRIES =

"CREATE TABLE " + DBContract.UserEntry.TABLE\_NAME + " (" + DBContract.UserEntry.COLUMN\_REGISTER\_NUMBER + " TEXT PRIMARY KEY," +

DBContract.UserEntry.COLUMN\_NAME + " TEXT," + DBContract.UserEntry.COLUMN\_CGPA + " TEXT)" private val SQL\_DELETE\_ENTRIES = "DROP TABLE IF EXISTS " + DBContract.UserEntry.TABLE\_NAME

}

}

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MainActivity.kt

package org.rajalakshmi.sqlite

import android.database.sqlite.SQLiteConstraintException

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Button

import android.widget.EditText

import android.widget.Toast

class MainActivity : AppCompatActivity() {

lateinit var usersDBHelper : UsersDBHelper

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val etRegisterNumber : EditText = findViewById(R.id.etRegisterNumber) val etName : EditText = findViewById(R.id.etName)

val etCGPA : EditText = findViewById(R.id.etCGPA)

val btAdd : Button = findViewById(R.id.btAdd)

val btView : Button = findViewById(R.id.btView)

val btModify : Button = findViewById(R.id.btModify)

val btDelete : Button = findViewById(R.id.btDelete)

val btClear : Button = findViewById(R.id.btClear)

usersDBHelper = UsersDBHelper(this)

btAdd.setOnClickListener {

val registerNumber : String = etRegisterNumber.text.toString() val name : String = etName.text.toString()

val cgpa : String = etCGPA.text.toString()

var result = usersDBHelper.insertUser(UserModel(registernumber = registerNumber, name = name, cgpa = cgpa))

etRegisterNumber.setText("")

etName.setText("")

etCGPA.setText("")

}

btView.setOnClickListener {

var users = usersDBHelper.readUser(etRegisterNumber.text.toString()) users.forEach {

etName.setText(it.name)

etCGPA.setText(it.cgpa)

}

}

btDelete.setOnClickListener {

var registerNumber = etRegisterNumber.text.toString() val result = usersDBHelper.deleteUser(registerNumber) if(result)

Toast.makeText(applicationContext, "User Deleted...!", Toast.LENGTH\_LONG).show()

}

btClear.setOnClickListener {

etRegisterNumber.setText("")

etName.setText("")

etCGPA.setText("")

}

}

}

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Output

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Ex. No. : 06 Date :

Register No. : Name :

Form Validation

Aim

Design an android activity with two text boxes where the user can enter (username and ID) and a button (validate). Validate the entered username and ID field for the following using android code. i) Both the fields should not be empty ii) Name field should have alphabets iii) ID field should have numeric values (only 4-digit).

Procedure

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| --- |
|  |

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.FormValidation"

tools:targetApi="31">

<activity

android:name=".MainActivity2"

android:exported="false" />

<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>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity">

<EditText

android:id="@+id/etUserName"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter the userame...!"

android:inputType="textPersonName" />

<EditText

android:id="@+id/etPinNumber"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter the pin number...!"

android:inputType="textPersonName" />

<Button

android:id="@+id/btLogin"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Login"

android:textAllCaps="false" />

<Button

android:id="@+id/btClear"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Clear"

android:textAllCaps="false" />

</LinearLayout>

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activity\_main2.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity2">

<TextView

android:id="@+id/tvLoginSuccess"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Login Success...!"

android:textAlignment="center"

android:textSize="24sp" />

</LinearLayout>

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MainActivity.kt

package org.rajalakshmi.formvalidation

import android.content.Intent

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Button

import android.widget.EditText

import android.widget.Toast

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) { super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val etUserName : EditText = findViewById(R.id.etUserName) val etPinNumber : EditText = findViewById(R.id.etPinNumber) val btLogin : Button = findViewById(R.id.btLogin) val btClear : Button = findViewById(R.id.btClear)

btLogin.setOnClickListener {

val checkUserName = "[a-zA-Z]+".toRegex()

val checkPinNo = "[0-9]{4}".toRegex()

if(checkUserName.matches(etUserName.text.toString()) && checkPinNo.matches(etPinNumber.text.toString())) {

val intent = Intent(this, MainActivity2::class.java) startActivity(intent)

}

else {

Toast.makeText(applicationContext, "Invalid User Name / Pin No.",Toast.LENGTH\_LONG).show()

}

}

btClear.setOnClickListener {

etUserName.text.clear()

etPinNumber.text.clear()

}

}

}

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MainActivity2.kt

package org.rajalakshmi.formvalidation

import androidx.appcompat.app.AppCompatActivity import android.os.Bundle

class MainActivity2 : AppCompatActivity() { override fun onCreate(savedInstanceState: Bundle?) { super.onCreate(savedInstanceState) setContentView(R.layout.activity\_main2) }

}

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Output

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Result

|  |
| --- |
|  |

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Ex. No. : 07 Date :

Register No. : Name :

SD Card

Aim

Implement an application to write the Register Number, Name and CGPA to SD card in text file format.

Procedure

|  |
| --- |
|  |

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE"/> <uses-permission android:name="android.permission.READ\_EXTERNAL\_STORAGE"/> <application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.SDCard"

tools:targetApi="31">

<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>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity">

<EditText

android:id="@+id/etRegisterNumber"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter the register number...!"

android:inputType="textPersonName" />

<EditText

android:id="@+id/etName"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter the name...!"

android:inputType="textPersonName" />

<EditText

android:id="@+id/etCGPA"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter the CGPA...!"

android:inputType="textPersonName" />

<Button

android:id="@+id/btSave"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Save"

android:textAllCaps="false" />

<Button

android:id="@+id/btLoad"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Load"

android:textAllCaps="false" />

</LinearLayout>

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MainActivity.kt

package org.rajalakshmi.sdcard

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Button

import android.widget.EditText

import java.io.\*

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val etRegisterNumber : EditText = findViewById(R.id.etRegisterNumber) val etName : EditText = findViewById(R.id.etName)

val etCGPA : EditText = findViewById(R.id.etCGPA)

val btSave : Button = findViewById(R.id.btSave)

val btLoad : Button = findViewById(R.id.btLoad)

btSave.setOnClickListener {

val registerNumber = etRegisterNumber.text.toString() val name = etName.text.toString()

val cgpa = etCGPA.text.toString()

val file = File(getExternalFilesDir(null), "student.txt") val outputStream = FileOutputStream(file, false) outputStream.write("$registerNumber,$name,$cgpa\n".toByteArray()) outputStream.close()

etRegisterNumber.text.clear()

etName.text.clear()

etCGPA.text.clear()

}

btLoad.setOnClickListener {

val file = File(getExternalFilesDir(null), "student.txt") val inputStream = FileInputStream(file)

val inputStreamReader = InputStreamReader(inputStream) val bufferedReader = BufferedReader(inputStreamReader) var line: String

line = bufferedReader.readLine()

val parts = line.split(",")

etRegisterNumber.setText(parts[0])

etName.setText(parts[1])

etCGPA.setText(parts[2])

inputStream.close()

}

}

}

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Output

Result

|  |
| --- |
|  |

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Ex. No. : 08 Date :

Register No. : Name :

Alert Dialog Box

Aim

Implement an application to display the alert box message.

Procedure

|  |
| --- |
|  |

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.AlertDialogBox"

tools:targetApi="31">

<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>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity">

<EditText

android:id="@+id/etText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter the text...!"

android:inputType="textPersonName" />

<Button

android:id="@+id/btDisplay"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Display"

android:textAllCaps="false" />

</LinearLayout>

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MainActivity.kt

package org.rajalakshmi.alertdialogbox

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Button

import android.widget.EditText

import android.widget.Toast

import androidx.appcompat.app.AlertDialog

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val etText : EditText = findViewById(R.id.etText) val btDisplay : Button = findViewById(R.id.btDisplay)

btDisplay.setOnClickListener {

val alertDialog = AlertDialog.Builder(this)

.setTitle("MAD Lab")

.setMessage(etText.text.toString())

.setPositiveButton("OK") { dialog, which -> Toast.makeText(applicationContext, "You clicked OK", Toast.LENGTH\_LONG).show()

}

.setNegativeButton("Cancel") { dialog, which -> Toast.makeText(applicationContext, "You clicked Cancel", Toast.LENGTH\_LONG).show()

}

.create()

alertDialog.show()

}

}

}

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Output





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Result

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Ex. No. : 09 Date :

Register No. : Name :

Alarm

Aim

Write a mobile application to set the alarm using android Alarm Manager class. Procedure

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<uses-permission android:name="android.permission.SCHEDULE\_EXACT\_ALARM"/> <application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.MyApplication"

tools:targetApi="31">

<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>

<receiver android:name=".AlarmReceiver">

</receiver>

</application>

</manifest>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity">

<TimePicker

android:id="@+id/timePicker"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_gravity="center" />

<Button

android:id="@+id/btSetAlarm"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Set Alarm"

android:textAllCaps="false" />

<Button

android:id="@+id/btnStopAlarm"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Stop Alarm"

android:textAllCaps="false" />

</LinearLayout>

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MainActivity.kt

package org.rajalakshmi.myapplication

import android.app.AlarmManager

import android.app.PendingIntent

import android.content.Intent

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.widget.Button

import android.widget.TimePicker

import android.widget.Toast

import java.util.\*

class MainActivity : AppCompatActivity() {

lateinit var pendingIntent: PendingIntent

private lateinit var alarmManager: AlarmManager

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val alarmTimePicker: TimePicker = findViewById(R.id.timePicker) val btSetAlarm : Button = findViewById(R.id.btSetAlarm) val btStopAlarm : Button = findViewById(R.id.btnStopAlarm) alarmManager = getSystemService(ALARM\_SERVICE) as AlarmManager

btSetAlarm.setOnClickListener {

Toast.makeText(applicationContext, "Alarm ON...!", Toast.LENGTH\_LONG).show()

val calendar: Calendar = Calendar.getInstance() calendar.set(Calendar.HOUR\_OF\_DAY, alarmTimePicker.hour) calendar.set(Calendar.MINUTE, alarmTimePicker.minute) val intent = Intent(this, AlarmReceiver::class.java) pendingIntent = PendingIntent.getBroadcast(this.applicationContext, 2, intent, PendingIntent.FLAG\_CANCEL\_CURRENT)

val time:Long = calendar.timeInMillis - (calendar.timeInMillis % 60000)

alarmManager.setRepeating(AlarmManager.RTC\_WAKEUP, time, 10000, pendingIntent)

}

btStopAlarm.setOnClickListener {

alarmManager.cancel(pendingIntent)

Toast.makeText(applicationContext, "Alarm OFF...!", Toast.LENGTH\_LONG).show()

}

}

}

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AlarmReceiver.kt

package org.rajalakshmi.myapplication

import android.content.BroadcastReceiver

import android.content.Context

import android.content.Intent

import android.media.Ringtone

import android.media.RingtoneManager

import android.net.Uri

import android.widget.Toast

class AlarmReceiver : BroadcastReceiver() {

override fun onReceive(context: Context?, intent: Intent?) { Toast.makeText(context, "Alarm Ringing...!", Toast.LENGTH\_LONG).show() var ringtone: Ringtone

val alarmUri: Uri =

RingtoneManager.getDefaultUri(RingtoneManager.TYPE\_ALARM)

ringtone = RingtoneManager.getRingtone(context, alarmUri) ringtone.play()

}

}

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Output

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Ex. No. : 10 Date :

Register No. : Name :

Telephony Services

Aim

Develop an android application to display the information of the telephony services. Procedure

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<uses-permission android:name="android.permission.READ\_PHONE\_STATE"/> <application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.TelephonyServices"

tools:targetApi="31">

<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>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity">

<TextView

android:id="@+id/tvNetworkOperatorName"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Network Operator Name" />

<EditText

android:id="@+id/etNetworkOperatorName"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvPhoneType"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Phone Type" />

<EditText

android:id="@+id/etPhoneType"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvNetworkCountryISO"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Network Country ISO" />

<EditText

android:id="@+id/etNetworkCountryISO"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName" />

<TextView

android:id="@+id/tvSIMCountryISO"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="SIM Country ISO" />

<EditText

android:id="@+id/etSIMCountryISO"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

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android:inputType="textPersonName" />

<TextView

android:id="@+id/tvDeviceSoftwareVersion" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Device Software Version" />

<EditText

android:id="@+id/etDeviceSoftwareVersion" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:ems="10"

android:inputType="textPersonName" />

<Button

android:id="@+id/btGetTelephonyServices" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Get Telephony Services" android:textAllCaps="false" /> </LinearLayout>

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MainActivity.kt

package org.rajalakshmi.telephonyservices

import android.content.Context

import android.content.pm.PackageManager

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.telephony.TelephonyManager

import android.widget.Button

import android.widget.EditText

import androidx.core.app.ActivityCompat

class MainActivity : AppCompatActivity() {

private val REQUEST\_CODE\_PHONE\_STATE = 1000

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val etNetworkOperatorName : EditText =

findViewById(R.id.etNetworkOperatorName)

val etPhoneType : EditText = findViewById(R.id.etPhoneType) val etNetworkCountryISO : EditText =

findViewById(R.id.etNetworkCountryISO)

val etSIMCountryISO : EditText = findViewById(R.id.etSIMCountryISO) val etDeviceSoftwareVersion : EditText =

findViewById(R.id.etDeviceSoftwareVersion)

val btGetTelephonyServices : Button =

findViewById(R.id.btGetTelephonyServices)

val telephonyManager = getSystemService(Context.TELEPHONY\_SERVICE) as TelephonyManager

if (ActivityCompat.checkSelfPermission(this,

android.Manifest.permission.READ\_PHONE\_STATE) !=

PackageManager.PERMISSION\_GRANTED ) {

ActivityCompat.requestPermissions(this,

arrayOf(android.Manifest.permission.READ\_PHONE\_STATE), REQUEST\_CODE\_PHONE\_STATE) }

btGetTelephonyServices.setOnClickListener {

val networkOperatorName = telephonyManager.networkOperatorName val phoneType: Int = telephonyManager.getPhoneType() var strphoneType : String = ""

val networkCountryISO: String =

telephonyManager.getNetworkCountryIso()

val SIMCountryISO: String = telephonyManager.getSimCountryIso() val deviceSoftwareVersion: String? =

telephonyManager.getDeviceSoftwareVersion()

when (phoneType) {

TelephonyManager.PHONE\_TYPE\_CDMA -> strphoneType = "CDMA" TelephonyManager.PHONE\_TYPE\_GSM -> strphoneType = "GSM" TelephonyManager.PHONE\_TYPE\_NONE -> strphoneType = "NONE" }

etNetworkOperatorName.setText(networkOperatorName) etPhoneType.setText(strphoneType)

etNetworkCountryISO.setText(networkCountryISO)

etSIMCountryISO.setText(SIMCountryISO)

etDeviceSoftwareVersion.setText(deviceSoftwareVersion) }

}

}

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Output



Result

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Ex. No. : 11 Date :

Register No. : Name :

Send SMS

Aim

Develop an application to send SMS.

Procedure

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AndroidManifest.xml

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools">

<uses-permission android:name="android.permission.SEND\_SMS"/> <application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:supportsRtl="true"

android:theme="@style/Theme.SendSMS"

tools:targetApi="31">

<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>

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activity\_main.xml

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

<LinearLayout 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:orientation="vertical"

tools:context=".MainActivity">

<EditText

android:id="@+id/etPhoneNumber"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter the phone number...!"

android:inputType="textPersonName" />

<EditText

android:id="@+id/etMessage"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter the message...!"

android:inputType="textPersonName" />

<Button

android:id="@+id/btSend"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Send"

android:textAllCaps="false" />

</LinearLayout>

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MainActivity.kt

package org.rajalakshmi.sendsms

import android.os.Build

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.telephony.SmsManager

import android.widget.Button

import android.widget.EditText

import android.widget.Toast

import androidx.core.app.ActivityCompat

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

val etPhoneNumber : EditText = findViewById(R.id.etPhoneNumber) val etMessage : EditText = findViewById(R.id.etMessage) val btSend : Button = findViewById(R.id.btSend)

ActivityCompat.requestPermissions(this,

arrayOf(android.Manifest.permission.SEND\_SMS),1000)

btSend.setOnClickListener {

val phoneNumber = etPhoneNumber.text.toString() val message = etMessage.text.toString()

val smsManager: SmsManager

smsManager = SmsManager.getDefault()

smsManager.sendTextMessage(phoneNumber, null, message, null, null) Toast.makeText(applicationContext, "Message Sent", Toast.LENGTH\_LONG).show()

}

}

}

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Output

Result

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