

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum-590014



A MINI PROJECT REPORT ON

“VTU-GRADE POINT CALCY”

Submitted to

Visvesvaraya Technological University

In the partial fulfilment of requirements for the award of degree

BACHELOR OF ENGINEERING

IN

INFORMATION SCIENCE AND ENGINEERING

BY

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Under the Guidance of

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CERTIFICATE

This is to certify that the mini project work entitled “**VTU-GRADE POINT CALCY**” is a bonafide work carried out by **Mr. Rithik K** bearing **USN 4CB20IS042** the bonafide students of **Canara Engineering College** in partial fulfilment for the award of degree of Bachelor of Engineering in Information Science and Engineering under the Visvesvaraya Technological University, Belagavi during the academic year 2022-2023. It is verified that all corrections/suggestions indicated for internal assessment have been incorporated in the report. The mini project report has been approved as it satisfies all the academic requirements in the respect of mini project work prescribed by the Bachelor of Engineering Degree.

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Signature with date

1.

2.

ABSTRACT

VTU-GRADE POINT CALCY is an app that helps students of Visvesvaraya Technological University (VTU) to calculate their grade point average (GPA) for any course. The app allows users to enter their marks for each subject and displays the corresponding grades and GPA according to the VTU grading system. The app also provides a summary of the user's academic performance and progress. Additionally, the app has a normal calculator function that can be used for basic arithmetic operations. VTU-grade point calcy is a user-friendly and reliable app that can help students to plan their studies and achieve their academic goals.

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CHAPTER 1

INTRODUCTION

In today's competitive academic landscape, it is essential for students to have effective tools that help them track their progress, plan their studies strategically, and achieve their academic goals. With this objective in mind, we present VTU Grade Point Calcy, a powerful app specifically designed for students of Visvesvaraya Technological University (VTU).

VTU Grade Point Calcy serves as an indispensable companion for VTU students, offering a range of features and functionalities that simplify the process of calculating their grade point average (GPA) and provide valuable insights into their academic performance. By leveraging this innovative app, students can enhance their study routines, make informed decisions, and ultimately excel in their academic endeavors.

The app's intuitive user interface enables students to effortlessly input their marks for each subject, following the VTU grading system. With just a few taps, VTU Grade Point Calcy instantly calculates the corresponding grades and delivers an accurate GPA. This streamlined approach eliminates the need for manual calculations and ensures accurate and consistent results, saving valuable time and reducing errors.

Beyond GPA calculation, VTU Grade Point Calcy offers a comprehensive summary of the user's academic performance and progress. Students can easily monitor their achievements, identify areas of improvement, and set meaningful goals based on detailed insights into their courses and grades. By having a clear understanding of their strengths and weaknesses, students can tailor their study plans, allocate resources efficiently, and optimize their learning experience.

Furthermore, VTU Grade Point Calcy extends its functionality beyond academic evaluation. The app also incorporates a versatile normal calculator, allowing students to perform basic arithmetic operations seamlessly. This additional feature eliminates the need for switching between multiple apps and offers convenience during study sessions or exams, promoting a smooth and uninterrupted workflow.

VTU Grade Point Calcy aims to empower VTU students by providing them with a user-friendly and reliable tool that enhances their academic journey.

1.1 PROBLEM STATEMENT

- The academic journey of students at Visvesvaraya Technological University (VTU) often poses several challenges that can hinder their progress and success. One such challenge is the complexity and time-consuming nature of calculating grade point averages (GPAs) manually. Additionally, students may struggle to gain comprehensive insights into their academic performance, making it difficult to identify areas for improvement and plan their studies effectively.
- The absence of a reliable and user-friendly tool that integrates GPA calculation and academic progress tracking further exacerbates the problem. This lack of an all-in-one solution requires students to rely on multiple resources, leading to inefficiencies and potential errors in their evaluations.

CHAPTER 2

REQUIREMENT SPECIFICATION

2.1 Hardware Requirements

- Processor - intel i3 processor or above
- RAM - 4GB or above

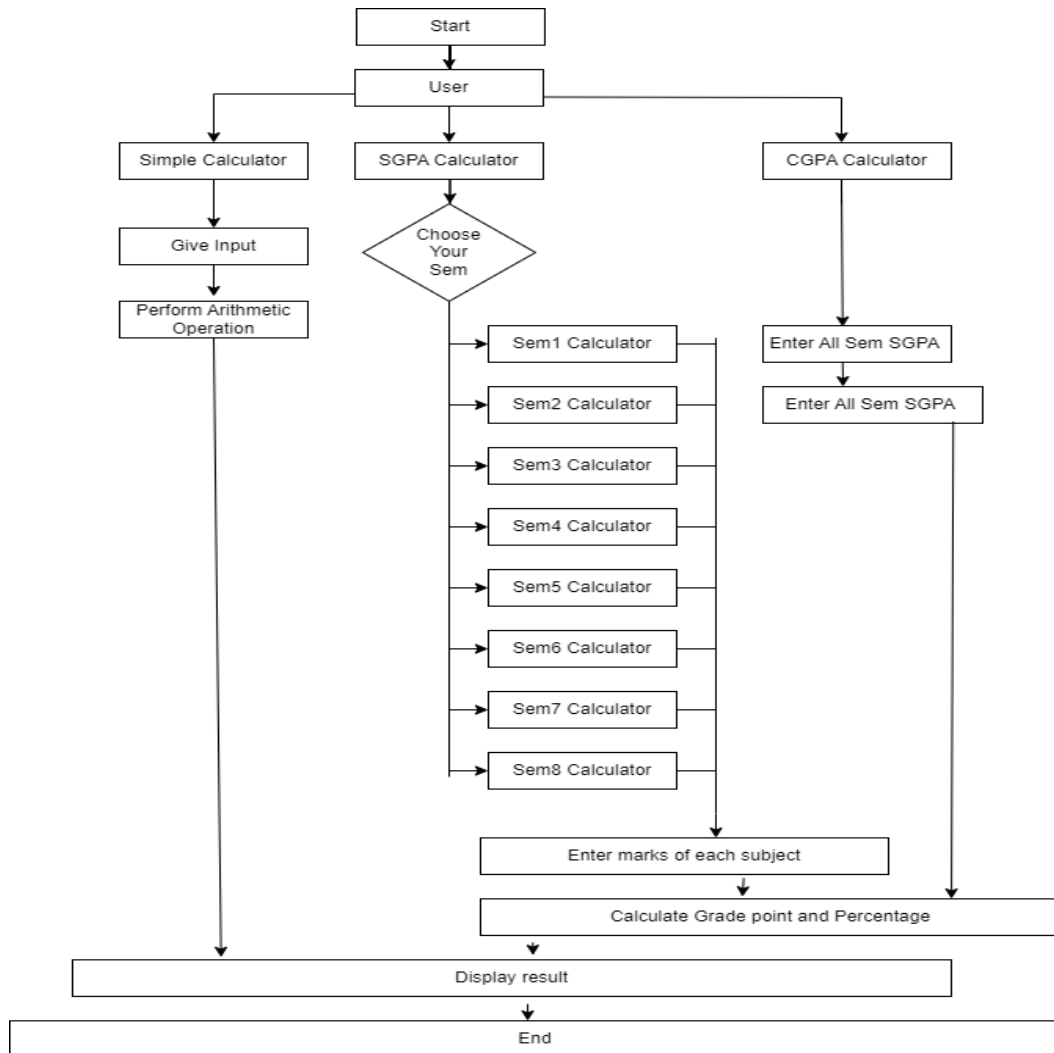
2.2 Software Requirements

- Operating System: Windows 11
- Tool/IDE (with version) used: Android studio 3.2-8 and above
- Emulator Used: External android device
- Language used: JAVA, XML

CHAPTER 3

DESIGN

3.1 Architectural Diagram of the Application



Explanation

- 1. USER:** The user can perform arithmetic operation using simple calculator or he can go with SGPA or CGPA Calculator .
- 2. SGPA CALCULATOR:** In this calculator SGPA is an average of all the grade points earned by the students in all the courses during one semester.
- 3. CGPA CALCULATOR:** In this calculator to calculate the CGPA, we simply add all the grade points and divide them by the sum of credit points.

3.2 XML Code

3.2.1 Activity_main.xml (Simple Calcy)

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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">
    <TextView
        android:id="@+id/solution_tv"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_above="@id/result_tv"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:layout_marginBottom="16dp"
        android:textAlignment="textEnd"
        android:textColor="@color/black"
        android:textSize="32dp" />
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/result_tv"
        android:text="0"
        android:textSize="64dp"
        android:textAlignment="textEnd"
        android:textColor="@color/black"
        android:layout_above="@id/buttons_layout"
        android:layout_margin="16dp" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:layout_alignParentBottom="true"
        android:background="#F1F1F1"
        android:paddingVertical="16dp"
        android:id="@+id/buttons_layout">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:orientation="horizontal">
```

```
<com.google.android.material.button.MaterialButton
    android:id="@+id/button_sgpa"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:layout_width="170dp"
    android:layout_height="50dp"
    android:layout_margin="12dp"
    android:backgroundTint="#8BC34A"
    android:text="SGPA"
    android:textColor="@color/white"
    android:textSize="20dp"
    app:cornerRadius="15dp" />
<com.google.android.material.button.MaterialButton
    android:id="@+id/button_cgpa"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:layout_width="170dp"
    android:layout_height="50dp"
    android:layout_margin="12dp"
    android:backgroundTint="#8BC34A"
    android:text="CGPA"
    android:textColor="@color/white"
    android:textSize="20dp"
    app:cornerRadius="15dp" />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:orientation="horizontal">
    <com.google.android.material.button.MaterialButton
        android:layout_width="72dp"
        android:layout_height="72dp"
        app:cornerRadius="36dp"
        style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
        android:textSize="32dp"
        android:textColor="@color/white"
        android:layout_margin="12dp"
        android:id="@+id/button_c"
        android:backgroundTint="#F44336"
        android:text="C" />
    <com.google.android.material.button.MaterialButton
        android:layout_width="72dp"
        android:layout_height="72dp"
        app:cornerRadius="36dp"
        style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
        android:textSize="32dp"
        android:textColor="@color/white"
        android:layout_margin="12dp"
```

```
        android:id="@+id/button_open_bracket"
        android:backgroundTint="#A1A1A1"
        android:text="(" />
    <com.google.android.material.button.MaterialButton
        android:layout_width="72dp"
        android:layout_height="72dp"
        app:cornerRadius="36dp"
        style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
        android:textSize="32dp"
        android:textColor="@color/white"
        android:layout_margin="12dp"
        android:backgroundTint="#A1A1A1"
        android:id="@+id/button_close_bracket"
        android:text=")" />
    <com.google.android.material.button.MaterialButton
        android:layout_width="72dp"
        android:layout_height="72dp"
        app:cornerRadius="36dp"
        style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
        android:textSize="32dp"
        android:textColor="@color/white"
        android:layout_margin="12dp"
        android:id="@+id/button_divide"
        android:backgroundTint="#FF9800"
        android:text="/" />
    </LinearLayout>
    <LinearLayout...>
    <LinearLayout...>
    <LinearLayout...>
    <LinearLayout...>
    </LinearLayout>
</RelativeLayout>
```

3.2.2 Activity_main2.xml (Semester Selection)

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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=".MainActivity2">
    <ScrollView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:orientation="vertical"
>
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Choose Your Semester"
    android:textSize="20sp"
    android:textAlignment="center"
    android:padding="16dp" />
<com.google.android.material.button.MaterialButton
    android:layout_width="370dp"
    android:layout_height="100dp"
    app:cornerRadius="20dp"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:textSize="18dp"
    android:textColor="@color/white"
    android:layout_margin="12dp"
    android:id="@+id/button_sem1p"
    android:text="1st and 2nd sem(Physics)"
/>
<com.google.android.material.button.MaterialButton
    android:layout_width="370dp"
    android:layout_height="100dp"
    app:cornerRadius="20dp"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:textSize="18dp"
    android:textColor="@color/white"
    android:layout_margin="12dp"
    android:id="@+id/button_sem1c"
    android:text="1st and 2nd sem(Chemistry)"
/>
<com.google.android.material.button.MaterialButton
    android:layout_width="370dp"
    android:layout_height="100dp"
    app:cornerRadius="20dp"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:textSize="18dp"
    android:textColor="@color/white"
    android:layout_margin="12dp"
    android:id="@+id/button_sem3"
    android:text="3rd sem(All Branch)"
```

/>

```
<com.google.android.material.button.MaterialButton
    android:layout_width="370dp"
    android:layout_height="100dp"
    app:cornerRadius="20dp"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:textSize="18dp"
    android:textColor="@color/white"
    android:layout_margin="12dp"
    android:id="@+id/button_sem4"
    android:text="4th sem(All Branch)"
```

/>

```
<com.google.android.material.button.MaterialButton
    android:layout_width="370dp"
    android:layout_height="100dp"
    app:cornerRadius="20dp"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:textSize="18dp"
    android:textColor="@color/white"
    android:layout_margin="12dp"
    android:id="@+id/button_sem5"
    android:text="5th Sem(All Branch)"
```

/>

```
<com.google.android.material.button.MaterialButton
    android:layout_width="370dp"
    android:layout_height="100dp"
    app:cornerRadius="20dp"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:textSize="18dp"
    android:textColor="@color/white"
    android:layout_margin="12dp"
    android:id="@+id/button_sem6"
    android:text="6th Sem(All branch)"
```

/>

```
<com.google.android.material.button.MaterialButton
    android:layout_width="370dp"
    android:layout_height="100dp"
    app:cornerRadius="20dp"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:textSize="18dp"
    android:textColor="@color/white"
    android:layout_margin="12dp"
    android:id="@+id/button_sem7"
    android:text="7th Sem(ISE,CSE)"
```

/>

```
<com.google.android.material.button.MaterialButton
    android:layout_width="370dp"
    android:layout_height="100dp"
    app:cornerRadius="20dp"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:textSize="18dp"
    android:textColor="@color/white"
    android:layout_margin="12dp"
    android:id="@+id/button_sem8"
    android:text="8th Sem(All branch)"
/>
</LinearLayout>
</ScrollView>
</RelativeLayout>
```

3.2.3 Activity_main4.xml (Sem 1 SGPA Calcy)

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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=".MainActivity4">
    <ScrollView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
    >
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="vertical"
            android:padding="16dp">
            <TextView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="1st and 2nd Semester Physics Cycle"
                android:textSize="20sp"
                android:textAlignment="center"
                android:padding="16dp" />
            <EditText
                android:id="@+id/input1"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:textAlignment="center"
                android:hint="18MAT11/21"
                android:textColorHint="#888888"
```



```
android:textColor="#000000"
    android:textSize="18sp"
    android:padding="15dp"
    app:cornerRadius="15dp"
    android:backgroundTint="#EEEEEE"
    android:background="@drawable/et_style"
/>
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />

<EditText
    android:id="@+id/input2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:hint="18PHY12/22"
    android:textColorHint="#888888"
    android:textColor="#000000"
    android:textSize="18sp"
    android:backgroundTint="#EEEEEE"
    android:background="@drawable/et_style"
    android:padding="15dp" />
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />
<EditText
    android:id="@+id/input3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:hint="18ELE13/23"
    android:textColorHint="#888888"
    android:textColor="#000000"
    android:textSize="18sp"
    android:backgroundTint="#EEEEEE"
    android:background="@drawable/et_style"
    android:padding="15dp" />
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />
<EditText
    android:id="@+id/input4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:hint="18CIV14/24"
```

```
android:textColorHint="#888888"
    android:textColor="#000000"
    android:textSize="18sp"
    android:backgroundTint="#EEEEEE"
    android:background="@drawable/et_style"
    android:padding="15dp" />
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />
<EditText
    android:id="@+id/input5"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:hint="18EGDL15/25"
    android:textColorHint="#888888"
    android:textColor="#000000"
    android:textSize="18sp"
    android:backgroundTint="#EEEEEE"
    android:background="@drawable/et_style"
    android:padding="15dp"/>
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />
<EditText
    android:id="@+id/input6"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:hint="18PHYL16/26"
    android:textColorHint="#888888"
    android:textColor="#000000"
    android:textSize="18sp"
    android:backgroundTint="#EEEEEE"
    android:background="@drawable/et_style"
    android:padding="15dp" />
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />
<EditText
    android:id="@+id/input7"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:hint="18ELEL17/27"
    android:textColorHint="#888888"
    android:textColor="#000000"
    android:textSize="18sp"
    android:backgroundTint="#EEEEEE"
```

```
android:background="@drawable/et_style"
    android:padding="15dp" />
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />
<EditText
    android:id="@+id/input8"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:hint="18EGH18/28(ENGLISH)"
    android:textColorHint="#888888"
    android:textColor="#000000"
    android:textSize="18sp"
    android:backgroundTint="#EEEEEE"
    android:background="@drawable/et_style"
    android:padding="15dp" />
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />
<com.google.android.material.button.MaterialButton
    android:id="@+id/calculate"
    style="@style/Widget.MaterialComponents.ExtendedFloatingActionButton"
    android:layout_width="170dp"
    android:layout_height="50dp"
    android:layout_margin="12dp"
    android:layout_gravity="center"
    android:text="Calculate SGPA"
    android:textColor="#FFFFFF"
    android:textSize="18sp"
    android:padding="8dp"
    android:backgroundTint="#2196F3"
    android:background="@drawable/et_style" />
<View
    android:layout_width="match_parent"
    android:layout_height="16dp" />
<TextView
    android:id="@+id/output"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:text="Output"
    android:textSize="23dp"/>
</LinearLayout>
</ScrollView>
</RelativeLayout>
```

CHAPTER 4

IMPLEMENTATION

4.1 List of classes imported and their purpose in the application.

Intent: An Intent provides a facility for performing late runtime binding between the code in different applications. Its most significant use is in the launching of activities, where it can be thought of as the glue between activities. It is basically a passive data structure holding an abstract description of an action to be performed.

Bundle: Constructs a new, empty Bundle that uses a specific ClassLoader for instantiating Parcelable and Serializable objects.

View: This class represents the basic building block for user interface components. A View occupies a rectangular area on the screen and is responsible for drawing and event handling

TextView: A user interface element that displays text to the user.

MaterialButton: This class supplies updated Material styles for the button in the constructor. The widget will display the correct default Material styles without the use of the style flag.

Context: This class represents the runtime context of an executing script. Before executing a script, an instance of Context must be created and associated with the thread that will be executing the script. The Context will be used to store information about the executing of the script such as the call stack.

Scriptable: This is interface that all objects in JavaScript must implement. The interface provides for the management of properties and for performing conversions. Host system implementors may find it easier to extend the Scriptable Object class rather than implementing Scriptable when writing host objects.

4.2 List of important library functions used and their descriptions.

- **setContentView()** - Set the activity content from a layout resource. The resource will be inflated, adding all top-level views to the activity.
- **findViewById()** - Finds a view that was identified by the android:id XML attribute that was processed in onCreate.
- **setOnClickListener()** - Register a callback to be invoked when this view is clicked. If this view is not clickable, it becomes clickable.

- **toString()** – This method returns a string representation of the object.
- **startActivity()** - defines that the intent should be used to start an activity.
- **getSelectedItem()** - Returns the data corresponding to the currently selected item, or null if there is nothing selected.
- **getText()** - This method return the text that TextView is displaying.
- **parseInt()** - Parses the string argument as a signed decimal integer.
- **parseFloat()** - parses a string argument and returns a floating point number.
- **length()** - Returns the length of this string. The length is equal to the number of Unicode code units in the string.
- **equals()** -This method compares two strings, and returns true if the strings are equal, and false if not.
- **show()** - Show the view for the specified duration.
- **setText()** - set the text to be displayed in the TextView.

4.3 Java code

4.3.1 MainActivity.java (Simple Calcy)

```
package com.example.studentcalcy;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
import com.google.android.material.button.MaterialButton;
import org.mozilla.javascript.Context;
import org.mozilla.javascript.Scriptable;
public class MainActivity extends AppCompatActivity implements View.OnClickListener{
    TextView resultTv,solutionTv;
    MaterialButton buttonC,buttonBrackOpen,buttonBrackClose;
    MaterialButton buttonDivide,buttonMultiply,buttonPlus,buttonMinus,buttonEquals;
    MaterialButton button0,button1,button2,button3,button4,button5,button6,button7,button8,button9;
    MaterialButton buttonAC,buttonDot;
    MaterialButton buttonSgpa,buttonCgpa;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```
setContentView(R.layout.activity_main);

resultTv = findViewById(R.id.result_tv);
solutionTv = findViewById(R.id.solution_tv);
assignId(buttonSgpa,R.id.button_sgpa);
assignId(buttonCgpa,R.id.button_cgpa);
assignId(buttonC,R.id.button_c);
assignId(buttonBrackOpen,R.id.button_open_bracket);
assignId(buttonBrackClose,R.id.button_close_bracket);
assignId(buttonDivide,R.id.button_divide);
assignId(buttonMultiply,R.id.button_multiply);
assignId(buttonPlus,R.id.button_plus);
assignId(buttonMinus,R.id.button_minus);
assignId(buttonEquals,R.id.button_equals);
assignId(button0,R.id.button_0);
assignId(button1,R.id.button_1);
assignId(button2,R.id.button_2);
assignId(button3,R.id.button_3);
assignId(button4,R.id.button_4);
assignId(button5,R.id.button_5);
assignId(button6,R.id.button_6);
assignId(button7,R.id.button_7);
assignId(button8,R.id.button_8);
assignId(button9,R.id.button_9);
assignId(buttonAC,R.id.button_ac);
assignId(buttonDot,R.id.button_dot);}

void assignId(MaterialButton btn,int id){
    btn = findViewById(id);
    btn.setOnClickListener(this);}

@Override
public void onClick(View view) {
    MaterialButton button =(MaterialButton) view;
    String buttonText = button.getText().toString();
    String dataToCalculate = solutionTv.getText().toString();
    Intent intent1 = new Intent(MainActivity.this,MainActivity2.class);
    Intent intent2 = new Intent(MainActivity.this,MainActivity3.class);
    if(buttonText.equals("SGPA")){
        startActivity(intent1);
        resultTv.setText("0");
```

```
return;
}

if(buttonText.equals("CGPA")){
    startActivity(intent2);
    resultTv.setText("0");
    return;}
if(buttonText.equals("AC")){
    solutionTv.setText("");
    resultTv.setText("0");
    return;}
if(buttonText.equals("=")){
    solutionTv.setText(resultTv.getText());
    return;}
if(buttonText.equals("C")){
    dataToCalculate = dataToCalculate.substring(0,dataToCalculate.length()-1);
} else {
    dataToCalculate = dataToCalculate+buttonText;
}
solutionTv.setText(dataToCalculate);
String finalResult = getResult(dataToCalculate);
if(!finalResult.equals("Err")){
    resultTv.setText(finalResult);
}
}
String getResult(String data){
    try{
        Context context = Context.enter();
        context.setOptimizationLevel(-1);
        Scriptable scriptable = context.initStandardObjects();
        String finalResult = context.evaluateString(scriptable,data,"Javascript",1,null).toString();
        if(finalResult.endsWith(".0")){
            finalResult = finalResult.replace(".0","");
        }
        return finalResult;
    } catch (Exception e){
        return "Err";
    }
}
}
}
```

4.3.2 MainActivity2.java (Semester Selection)

```
package com.example.studentcalcy;
import androidx.appcompat.app.AppCompatActivity;
import com.google.android.material.button.MaterialButton;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
public class MainActivity2 extends AppCompatActivity implements View.OnClickListener{
    MaterialButton
    buttonsem1p,buttonsem1c,buttonsem3,buttonsem4,buttonsem5,buttonsem6,buttonsem7,buttonsem8;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        assignId(buttonsem1p,R.id.button_sem1p);
        assignId(buttonsem1c,R.id.button_sem1c);
        assignId(buttonsem3,R.id.button_sem3);
        assignId(buttonsem4,R.id.button_sem4);
        assignId(buttonsem5,R.id.button_sem5);
        assignId(buttonsem6,R.id.button_sem6);
        assignId(buttonsem7,R.id.button_sem7);
        assignId(buttonsem8,R.id.button_sem8);
    }
    void assignId(MaterialButton btn,int id){
        btn = findViewById(id);
        btn.setOnClickListener(this);
    }
    @Override
    public void onClick(View view) {
        MaterialButton button =(MaterialButton) view;
        String buttonText = button.getText().toString();
        Intent sem1p = new Intent(MainActivity2.this,MainActivity4.class);
        Intent sem1c = new Intent(MainActivity2.this,MainActivity5.class);
```



```
Intent sem3 = new Intent(MainActivity2.this,MainActivity6.class);
    Intent sem4 = new Intent(MainActivity2.this,MainActivity7.class);
    Intent sem5 = new Intent(MainActivity2.this,MainActivity8.class);
    Intent sem6 = new Intent(MainActivity2.this,MainActivity9.class);
    Intent sem7 = new Intent(MainActivity2.this,MainActivity10.class);
    Intent sem8 = new Intent(MainActivity2.this,MainActivity11.class);
    if(buttonText.equals("1st and 2nd sem(Physics)")){
        startActivity(sem1p);
    }
    if(buttonText.equals("1st and 2nd sem(Chemistry)")){
        startActivity(sem1c);
    }
    if(buttonText.equals("3rd sem(All Branch)")){
        startActivity(sem3);
    }
    if(buttonText.equals("4th sem(All Branch)")){
        startActivity(sem4);
    }
    if(buttonText.equals("5th Sem(All Branch)")){
        startActivity(sem5);
    }
    if(buttonText.equals("6th Sem(All branch)")){
        startActivity(sem6);
    }
    if(buttonText.equals("7th Sem(ISE,CSE)")){
        startActivity(sem7);
    }
    if(buttonText.equals("8th Sem(All branch)")){
        startActivity(sem8);
    }
}
```

4.3.3 MainActivity3.java (CGPA Calcy)

```
package com.example.studentcalcy;

import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity3 extends AppCompatActivity {
    EditText input1, input2, input3, input4, input5, input6, input7, input8;
    Button calculate;
    TextView output;
    @SuppressWarnings("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main3);
        input1 = findViewById(R.id.input1);
        input2 = findViewById(R.id.input2);
        input3 = findViewById(R.id.input3);
        input4 = findViewById(R.id.input4);
        input5 = findViewById(R.id.input5);
        input6 = findViewById(R.id.input6);
        input7 = findViewById(R.id.input7);
        input8 = findViewById(R.id.input8);
        calculate = findViewById(R.id.calculate);
        output = findViewById(R.id.output);
        calculate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String inputText1 = input1.getText().toString();
                String inputText2 = input2.getText().toString();
                String inputText3 = input3.getText().toString();
```

```
String inputText4 = input4.getText().toString();
String inputText5 = input5.getText().toString();
String inputText6 = input6.getText().toString();
String inputText7 = input7.getText().toString();
String inputText8 = input8.getText().toString();
if (inputText1.isEmpty() || inputText2.isEmpty() || inputText3.isEmpty() || inputText4.isEmpty() ||
inputText5.isEmpty() || inputText6.isEmpty() || inputText7.isEmpty() || inputText8.isEmpty()) {
    output.setText("Please enter numbers");
} else {
    float num1 = Float.parseFloat(inputText1.trim());
    float num2 = Float.parseFloat(inputText2.trim());
    float num3 = Float.parseFloat(inputText3.trim());
    float num4 = Float.parseFloat(inputText4.trim());
    float num5 = Float.parseFloat(inputText5.trim());
    float num6 = Float.parseFloat(inputText6.trim());
    float num7 = Float.parseFloat(inputText7.trim());
    float num8 = Float.parseFloat(inputText8.trim());
    float sum = num1 + num2 + num3 + num4 + num5 + num6 + num7 + num8;
    double average = (double) sum / 8;
    double perc = (average - 0.75) * 10;
    output.setText("CGPA : " + String.format("%.2f", average) + " Percentage : " +
String.format("%.2f", perc) + "%");
}
}
});
}}
```

4.3.4 MainActivity4.java (Sem 1 SGPA Calcy)

```
package com.example.studentcalcy;

import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity4 extends AppCompatActivity {

    EditText input1, input2, input3, input4, input5, input6, input7, input8;
    Button calculate;
    TextView output;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main4);
        input1 = findViewById(R.id.input1);
        input2 = findViewById(R.id.input2);
        input3 = findViewById(R.id.input3);
        input4 = findViewById(R.id.input4);
        input5 = findViewById(R.id.input5);
        input6 = findViewById(R.id.input6);
        input7 = findViewById(R.id.input7);
        input8 = findViewById(R.id.input8);
        calculate = findViewById(R.id.calculate);
        output = findViewById(R.id.output);
        calculate.setOnClickListener(new View.OnClickListener() {
            int grades;

            int mark(float x){
                if (x <= 100) {
                    if (x >= 90) {
                        return grades = 10;
                    } else if (x >= 80) {
```

```
        return grades = 9;
    } else if (x >= 70) {
        return grades = 8;
    } else if (x >= 60) {
        return grades = 7;
    } else if (x >= 50) {
        return grades = 6;
    } else if (x >= 45) {
        return grades = 5;
    } else if (x >= 40) {
        return grades = 4;
    } else if (x < 40) {
        return grades = 0;
    } else {
        return grades = 0;
    }
}
return grades;
}

@Override
public void onClick(View v) {
    String inputText1 = input1.getText().toString();
    String inputText2 = input2.getText().toString();
    String inputText3 = input3.getText().toString();
    String inputText4 = input4.getText().toString();
    String inputText5 = input5.getText().toString();
    String inputText6 = input6.getText().toString();
    String inputText7 = input7.getText().toString();
    String inputText8 = input8.getText().toString();
    if (inputText1.isEmpty() || inputText2.isEmpty() || inputText3.isEmpty() || inputText4.isEmpty()
        || inputText5.isEmpty() || inputText6.isEmpty() || inputText7.isEmpty() || inputText8.isEmpty()) {
        output.setText("Please enter numbers");
    } else {
        float num1 = mark(Float.parseFloat(inputText1.trim()));
    }
}
```

```
float num2 = mark(Float.parseFloat(inputText2.trim()));
float num3 = mark(Float.parseFloat(inputText3.trim()));
float num4 = mark(Float.parseFloat(inputText4.trim()));
float num5 = mark(Float.parseFloat(inputText5.trim()));
float num6 = mark(Float.parseFloat(inputText6.trim()));
float num7 = mark(Float.parseFloat(inputText7.trim()));
float num8 = mark(Float.parseFloat(inputText8.trim()));
int credit = 20;
num1 = (num1) * 4;
num2 = (num2) * 4;
num3 = (num3) * 3;
num4 = (num4) * 3;
num5 = (num5) * 3;
num6 = (num6) * 1;
num7 = (num7) * 1;
num8 = (num8) * 1;
float totalcredit = num1 + num2 + num3 + num4 + num5 + num6 + num7 + num8;
float sgpa = (totalcredit/credit);
double perc = (sgpa-0.75)*10;
output.setText("SGPA : " + sgpa + " Percentage :" + String.format("%.2f",perc) + "%");
    }
}
});
}
}
```

CHAPTER 5

RESULTS

5.1 Screenshots



Figure 5.1.1: Simple Calculator



Figure 5.1.2: Semester Selection

12:06

STUDYCALCY

1st and 2nd Semester Physics Cycle

18MAT11/21

18PHY12/22

18ELE13/23

18CIV14/24

18EGDL15/25

18PHYL16/26

18ELEL17/27

18EGH18/28(ENGLISH)

CALCULATE

III □ <

Figure 5.1.3: SGPA Calculator

12:07

STUDYCALCY

CGPA Calculator

1st Sem Sgpa

2st Sem Sgpa

3st Sem Sgpa

4st Sem Sgpa

5st Sem Sgpa

6st Sem Sgpa

7st Sem Sgpa

8st Sem Sgpa

CALCULATE

Output

III □ <

Figure 5.1.4: CGPA Calculator

CONCLUSION

This VTU Grade Point Calcy is a valuable companion for students of Visvesvaraya Technological University, offering a range of features and functionalities that simplify the process of calculating their grade point average (GPA) and provide valuable insights into their academic performance. By leveraging this innovative app, students can enhance their study routines, make informed decisions, and ultimately excel in their academic endeavors. The intuitive user interface of VTU Grade Point Calcy enables students to effortlessly input their marks for each subject, following the VTU grading system. With just a few taps, the app instantly calculates the corresponding grades and delivers an accurate GPA. This streamlined approach eliminates the need for manual calculations and ensures accurate and consistent results, saving valuable time and reducing errors. In summary, VTU Grade Point Calcy simplifies the process of GPA calculation, provides valuable insights into academic performance, and offers additional features that contribute to a seamless and efficient study experience. By using this app, VTU students can make informed decisions, track their progress, and optimize their learning, ultimately positioning themselves for success in their academic endeavors.

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