



ROYAL UNIVERSITY OF BHUTAN
COLLEGE OF SCIENCE AND TECHNOLOGY
PHUENTSHOLING: BHUTAN



PLAGIARISM DECLARATION FORM

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Module No and Title of the module: CTE306 - Mobile Application Development
Assignment no and Title of the Assignment: Lab Wok 03

Section H2 of the Royal University of Bhutan's *Wheel of Academic Law* provides the following definition of academic dishonesty:

"Academic dishonesty may be defined as any attempt by a student to gain an unfair advantage in any assessment. It may be demonstrated by one of the following:

Collusion: the representation of a piece of unauthorized group work as the work of a single candidate.

Commissioning: submitting an assignment done by another person as the student's own work.

Duplication: the inclusion in coursework of material identical or substantially similar to material which has already been submitted for any other assessment within the University.

False declaration: making a false declaration in order to receive special consideration by an Examination Board or to obtain extensions to deadlines or exemption from work.

Falsification of data: presentation of data in laboratory reports, projects, etc., based on work purported to have been carried out by the student, which have been invented, altered or copied by the student.

Plagiarism: the unacknowledged use of another's work as if it were one's own.

Examples are:

- verbatim copying of another's work without acknowledgement
- paraphrasing of another's work by simply changing a few words or altering the order of presentation, without acknowledgement
- ideas or intellectual data in any form presented as one's own without acknowledging the source(s)
- making significant use of unattributed digital images such as graphs, tables, photographs, etc. taken from test books, articles, films, plays, handouts, internet, or any other source, whether published or unpublished
- submission of a piece of work which has previously been assessed for a different award or module or at a different institution as if it were new work
- use of any material without prior permission of copyright from appropriate authority or owner of the materials used"

Student Declaration

I confirm that I have read and understood the above definitions of academic dishonesty. I declare that I have not committed any academic dishonesty when completing the attached piece of work.

Signature of Student: Divyash Chhetri

Date: 21 Aug 2022



Lab 03

CTE306 – Mobile Application Development

Date – 16th August 2020

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Aim

1. Complete the Calculator
2. Design the student semester registration app

Considering following activities:

- i. Activity 1: Registration form includes student ID, name, programme, academic year, year, semester, and list of modules. Submit the form to activity 2.
- ii. Activity 2: Receive and display all the information received from activity one.

Note: Wisely select the user input control as per your design.

Theory

We may describe a calculator as an electrical device that can be used to perform mathematical operations on a collection of numbers, such as addition, subtraction, multiplication, etc (ranging from 0 to 9). We will concentrate on creating the simpler devices in this practical since they can range in complexity from those that can simply handle MASD operations to those that can handle root, log, and other operations. Internally, a series of additions is used to carry out all of these processes.

An intent is to do an action on the screen. It is mostly used to initiate an action, transmit a broadcast receiver, initiate a service, and communicate between two actions. Android has two intent types: explicit intents and implicit intents. Here is an illustration of how to start a new activity with an existing one.

In this lab we are going to use link two different activities. A user fills up the form and then the details are shown in another activity.

Program Code

Calculator

MainActivity.java

```
package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.util.TypedValue;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    private Button b1;
    private Button b2;
    private Button b3;
    private Button b4;
    private Button b5;
    private Button b6;
    private Button b7;
    private Button b8;
    private Button b9;
    private Button b0;
    private Button b_equal;
    private Button b_multiply;
    private Button b_divide;
    private Button b_add;
    private Button b_subtract;
    private Button b_clear;
    private Button b_dot;
    private Button b_percentage;
    private Button b_plus_minus;
    private TextView t_input;
    private TextView t_output;
    private final char ADDITION = '+';
    private final char SUBTRACTION = '-';
    private final char MULTIPLICATION = '*';
    private final char DIVISION = '/';
    private final char EQU = '=';
    private final char EXTRA = '@';
    private final char MODULUS = '%';
    private char ACTION;
    private double val1 = Double.NaN;
```

```

private double val2;

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

    b1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "1");
        }
    });

    b2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "2");
        }
    });

    b3.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "3");
        }
    });

    b4.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "4");
        }
    });

    b5.setOnClickListener(new View.OnClickListener() {
        @Override

```

```

        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "5");
        }
    });

    b6.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "6");
        }
    });

    b7.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "7");
        }
    });

    b8.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "8");
        }
    });

    b9.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            ifErrorOnOutput();
            exceedLength();
            t_input.setText(t_input.getText().toString() + "9");
        }
    });

    b0.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {

```

```

        ifErrorOnOutput();
        exceedLength();
        t_input.setText(t_input.getText().toString() + "0");
    }
});

b_dot.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        exceedLength();
        t_input.setText(t_input.getText().toString() + ".");
    }
});

b_percentage.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (t_input.getText().length() > 0) {
            ACTION = MODULUS;
            operation();
            if (!ifReallyDecimal()) {
                t_output.setText(val1 + "%");
            } else {
                t_output.setText((int) val1 + "%");
            }
            t_input.setText(null);
        } else {
            t_output.setText("Error");
        }
    }
});

b_add.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (t_input.getText().length() > 0) {
            ACTION = ADDITION;
            operation();
            if (!ifReallyDecimal()) {
                t_output.setText(val1 + "+");
            } else {
                t_output.setText((int) val1 + "+");
            }
            t_input.setText(null);
        } else {
            t_output.setText("Error");
        }
    }
});

```

```

    }
}
});

b_subtract.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (t_input.getText().length() > 0) {
            ACTION = SUBTRACTION;
            operation();
            if (t_input.getText().length() > 0)
                if (!ifReallyDecimal()) {
                    t_output.setText(val1 + "-");
                } else {
                    t_output.setText((int) val1 + "-");
                }
            t_input.setText(null);
        } else {
            t_output.setText("Error");
        }
    }
});

b_multiply.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (t_input.getText().length() > 0) {
            ACTION = MULTIPLICATION;
            operation();
            if (!ifReallyDecimal()) {
                t_output.setText(val1 + "x");
            } else {
                t_output.setText((int) val1 + "x");
            }
            t_input.setText(null);
        } else {
            t_output.setText("Error");
        }
    }
});

b_divide.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (t_input.getText().length() > 0) {
            ACTION = DIVISION;

```



```

        operation();
        if (ifReallyDecimal()) {
            t_output.setText((int) val1 + "/");
        } else {
            t_output.setText(val1 + "/");
        }
        t_input.setText(null);
    } else {
        t_output.setText("Error");
    }
}

});

b_plus_minus.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (!t_output.getText().toString().isEmpty() ||
!t_input.getText().toString().isEmpty()) {
            val1 =
Double.parseDouble(t_input.getText().toString());
            ACTION = EXTRA;
            t_output.setText("-" + t_input.getText().toString());
            t_input.setText("");
        } else {
            t_output.setText("Error");
        }
    }
});

b_equal.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (t_input.getText().length() > 0) {
            operation();
            ACTION = EQU;
            if (!ifReallyDecimal()) {
                t_output.setText(/*t_output.getText().toString() +
String.valueOf(val2) + "=" + */String.valueOf(val1));
            } else {
                t_output.setText(/*t_output.getText().toString() +
String.valueOf(val2) + "=" + */String.valueOf((int) val1));
            }
            t_input.setText(null);
        } else {
            t_output.setText("Error");
        }
    }
});

```

```

    }
});

b_clear.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (t_input.getText().length() > 0) {
            CharSequence name = t_input.getText().toString();
            t_input.setText(name.subSequence(0, name.length() -
1));

            } else {
                val1 = Double.NaN;
                val2 = Double.NaN;
                t_input.setText("");
                t_output.setText("");
            }
        }
    });

// Empty text views on long click.
b_clear.setOnLongClickListener(new View.OnLongClickListener() {
    @Override
    public boolean onLongClick(View view) {
        val1 = Double.NaN;
        val2 = Double.NaN;
        t_input.setText("");
        t_output.setText("");
        return true;
    }
});
}

private void viewSetup() {
    b1 = findViewById(R.id.button_1);
    b2 = findViewById(R.id.button_2);
    b3 = findViewById(R.id.button_3);
    b4 = findViewById(R.id.button_4);
    b5 = findViewById(R.id.button_5);
    b6 = findViewById(R.id.button_6);
    b7 = findViewById(R.id.button_7);
    b8 = findViewById(R.id.button_8);
    b9 = findViewById(R.id.button_9);
    b0 = findViewById(R.id.button_0);
    b_equal = findViewById(R.id.button_equal);
    b_multiply = findViewById(R.id.button_multiply);
    b_divide = findViewById(R.id.button_divide);
}

```

```

        b_add = findViewById(R.id.button_add);
        b_subtract = findViewById(R.id.button_subtract);
        b_clear = findViewById(R.id.button_clear_ac);
        b_dot = findViewById(R.id.button_decimal);
        b_percentage = findViewById(R.id.button_percentage);
        b_plus_minus = findViewById(R.id.button_plus_minus);
        t_input = findViewById(R.id.input);
        t_output = findViewById(R.id.output);
    }

    private void operation() {
        if (!Double.isNaN(val1)) {
            if (t_output.getText().toString().charAt(0) == '-') {
                val1 = (-1) * val1;
            }
            val2 = Double.parseDouble(t_input.getText().toString());

            switch (ACTION) {
                case ADDITION:
                    val1 = val1 + val2;
                    break;
                case SUBTRACTION:
                    val1 = val1 - val2;
                    break;
                case MULTIPLICATION:
                    val1 = val1 * val2;
                    break;
                case DIVISION:
                    val1 = val1 / val2;
                    break;
                case EXTRA:
                    val1 = (-1) * val1;
                    break;
                case MODULUS:
                    val1 = val1 % val2;
                    break;
                case EQU:
                    break;
            }
        } else {
            val1 = Double.parseDouble(t_input.getText().toString());
        }
    }

    // Remove error message that is already written there.
    private void ifErrorOnOutput() {

```

```

        if (t_output.getText().toString().equals("Error")) {
            t_output.setText("");
        }
    }

    // Whether value if a double or not
    private boolean ifReallyDecimal() {
        return val1 == (int) val1;
    }

    private void noOperation() {
        String inputExpression = t_output.getText().toString();
        if (!inputExpression.isEmpty() && !inputExpression.equals("Error"))
    {
        if (inputExpression.contains("-")) {
            inputExpression = inputExpression.replace("-", "");
            t_output.setText("");
            val1 = Double.parseDouble(inputExpression);
        }
        if (inputExpression.contains("+")) {
            inputExpression = inputExpression.replace("+", "");
            t_output.setText("");
            val1 = Double.parseDouble(inputExpression);
        }
        if (inputExpression.contains("/")) {
            inputExpression = inputExpression.replace("/", "");
            t_output.setText("");
            val1 = Double.parseDouble(inputExpression);
        }
        if (inputExpression.contains("%")) {
            inputExpression = inputExpression.replace("%", "");
            t_output.setText("");
            val1 = Double.parseDouble(inputExpression);
        }
        if (inputExpression.contains("x")) {
            inputExpression = inputExpression.replace("x", "");
            t_output.setText("");
            val1 = Double.parseDouble(inputExpression);
        }
    }
}

// Make text small if too many digits.
private void exceedLength() {
    if (t_input.getText().toString().length() > 10) {
        t_input.setTextSize(TypedValue.COMPLEX_UNIT_SP, 20);
    }
}

```

```

    }
}
}

```

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"
    android:background="#000"
    tools:context=".MainActivity">

```

```

    <Button
        android:id="@+id/button_1"
        android:layout_width="80dp"
        android:layout_height="80dp"
        app:backgroundTint="@null"
        android:background="@drawable/circle_button"
        android:text="@string/no1"
        android:textColor="#ffff"
        android:textSize="28sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.043"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.817" />

```

```

    <Button
        android:id="@+id/button_2"
        android:layout_width="80dp"
        android:layout_height="80dp"
        app:backgroundTint="@null"
        android:background="@drawable/circle_button"
        android:text="@string/no2"
        android:textColor="#ffff"
        android:textSize="28sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.352"
        app:layout_constraintStart_toStartOf="parent"

```

```
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.817" />
```

<Button

```
    android:id="@+id/button_3"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/circle_button"
    android:text="@string/no3"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.672"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.817" />
```

<Button

```
    android:id="@+id/button_4"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/circle_button"
    android:text="@string/no4"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.043"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.677" />
```

<Button

```
    android:id="@+id/button_5"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/circle_button"
    android:text="@string/no5"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```

```

app:layout_constraintHorizontal_bias="0.352"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.677" />

```

<Button

```

    android:id="@+id/button_6"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/circle_button"
    android:text="@string/no6"
    android:textColor="#ffffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.672"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.677" />

```

<Button

```

    android:id="@+id/button_7"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/circle_button"
    android:text="@string/no7"
    android:textColor="#ffffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.043"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.541" />

```

<Button

```

    android:id="@+id/button_8"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/circle_button"
    android:text="@string/no8"
    android:textColor="#ffffff"
    android:textSize="28sp"

```

```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.352"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.541" />

```

<Button

```

    android:id="@+id/button_9"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/circle_button"
    android:text="@string/no9"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.672"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.541" />

```

<Button

```

    android:id="@+id/button_0"
    android:layout_width="185dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/custom_button"
    android:paddingEnd="95sp"
    android:text="@string/no0"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.061"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.957"
    tools:ignore="RtlSymmetry" />

```

<Button

```

    android:id="@+id/button_equal"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"

```



```

    android:background="@drawable/arithmetic_button"
    android:text="@string/equals"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.99"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.958" />

```

<Button

```

    android:id="@+id/button_multiply"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/arithmetic_button"
    android:text="@string/multiply"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.99"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.541" />

```

<Button

```

    android:id="@+id/button_divide"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/arithmetic_button"
    android:text="@string/divide"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.987"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.406" />

```

<Button

```

    android:id="@+id/button_add"
    android:layout_width="80dp"

```

```

    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/arithmetic_button"
    android:text="@string/add"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.99"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.817" />

```

<Button

```

    android:id="@+id/button_subtract"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/arithmetic_button"
    android:text="@string/subtract"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.99"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.677" />

```

<Button

```

    android:id="@+id/button_clear_ac"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/button"
    android:backgroundTint="#9F9F9F"
    android:text="@string/AC"
    android:textColor="#060606"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.043"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.406"
    tools:ignore="TextContrastCheck" />

```

```

<Button
    android:id="@+id/button_percentage"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/button"
    android:text="@string/percentage"
    android:textColor="#060606"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.672"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.406" />

```

```

<Button
    android:id="@+id/button_plus_minus"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/button"
    android:text="@string/plus_minus"
    android:textColor="#060606"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.349"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.406" />

```

```

<Button
    android:id="@+id/button_decimal"
    android:layout_width="80dp"
    android:layout_height="80dp"
    app:backgroundTint="@null"
    android:background="@drawable/circle_button"
    android:text="@string/decimal"
    android:textColor="#ffff"
    android:textSize="28sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.671"
    app:layout_constraintStart_toStartOf="parent"

```

```

        app:layout_constraintTop_toTop0f="parent"
        app:layout_constraintVertical_bias="0.958" />

<TextView
    android:id="@+id/input"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:backgroundTint="@null"
    android:textColor="@android:color/background_light"
    android:textSize="68sp"
    app:layout_constraintBottom_toBottom0f="parent"
    app:layout_constraintEnd_toEnd0f="parent"
    app:layout_constraintHorizontal_bias="0.909"
    app:layout_constraintStart_toStart0f="parent"
    app:layout_constraintTop_toTop0f="parent"
    app:layout_constraintVertical_bias="0.252" />

<TextView
    android:id="@+id/output"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:backgroundTint="@null"
    android:textColor="@android:color/background_light"
    android:textSize="36sp"
    app:layout_constraintBottom_toBottom0f="parent"
    app:layout_constraintEnd_toEnd0f="parent"
    app:layout_constraintHorizontal_bias="0.909"
    app:layout_constraintStart_toStart0f="parent"
    app:layout_constraintTop_toTop0f="parent"
    app:layout_constraintVertical_bias="0.051" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Student Registration

MainActivity.java

```

package com.example.student_registration;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;

```

```

import android.widget.AutoCompleteTextView;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    public EditText name,id,module;
    public AutoCompleteTextView pg,yr,sm,ay;

    String[] programme_list = {"BE IT","BE ECE","BE EG","BE ICE","BE
CIVIL","BE EE","B Arch"};
    String[] academic_year_list = {"AS2021","SS2021","AS2022","SS2022"};
    String[] semester_list = {"Semester 1","Semester 2"};
    String[] year_list ={"1st Year","2nd Year","3rd Year","4th Year","5th
Year"};

    AutoCompleteTextView Proglis,Ayear,semester,year;
    ArrayAdapter<String> adapterItems;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        // assigning variables with thier IDs from xml
        name = (EditText) findViewById(R.id.etname);
        id= (EditText)findViewById(R.id.etID);
        module = (EditText) findViewById(R.id.etModules);
        pg = (AutoCompleteTextView) findViewById(R.id.plist);
        yr = (AutoCompleteTextView) findViewById(R.id.yearlist);
        sm = (AutoCompleteTextView) findViewById(R.id.semesterlist);
        ay = (AutoCompleteTextView) findViewById(R.id.aylist);

        //using array adapter to display the items in string array in
dropdown list
        Proglis = findViewById(R.id.plist);
        adapterItems = new
ArrayAdapter<String>(this,R.layout.dropdown_item, programme_list);
        Proglis.setAdapter(adapterItems);
        Proglis.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                String item =
parent.getItemAtPosition(position).toString();
            }
        });
    }
}

```

```

        Ayear = findViewById(R.id.aylist);
        adapterItems = new
ArrayAdapter<String>(this,R.layout.dropdown_item, academic_year_list);
        Ayear.setAdapter(adapterItems);
        Ayear.setOnItemClickListener(new AdapterView.OnItemClickListener()
{
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                String item =
parent.getItemAtPosition(position).toString();
            }
        });

        semester = findViewById(R.id.semesterlist);
        adapterItems = new
ArrayAdapter<String>(this,R.layout.dropdown_item, semester_list);
        semester.setAdapter(adapterItems);
        semester.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                String item =
parent.getItemAtPosition(position).toString();
            }
        });

        year = findViewById(R.id.yearlist);
        adapterItems = new
ArrayAdapter<String>(this,R.layout.dropdown_item, year_list);
        year.setAdapter(adapterItems);
        year.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                String item =
parent.getItemAtPosition(position).toString();
            }
        });
    }

    public void submit(View view) {
        //to go the next activity when submit button is pressed
        Intent intent = new Intent(MainActivity.this,Details.class);
        String dname = name.getText().toString();
        String did = id.getText().toString();
    }
}

```

```

String dmodule = module.getText().toString();
String dpgr = pg.getText().toString();
String dy = yr.getText().toString();
String dsm = sm.getText().toString();
String day = ay.getText().toString();

// passing the strings collected from getText to next activity
intent.putExtra("name",dname);
intent.putExtra("id",did);
intent.putExtra("module",dmodule);
intent.putExtra("programme",dpgr);
intent.putExtra("year",dy);
intent.putExtra("semester",dsm);
intent.putExtra("ayear",day);
startActivity(intent);
}
}

```

Details.java

```

package com.example.student_registration;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class Details extends AppCompatActivity {
    TextView name,id,pg,yr,sm,ay,md;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_details);
        // assigning variables with thier IDs from xml
        name = (TextView) findViewById(R.id.name_display);
        id = (TextView) findViewById(R.id.student_id_display);
        pg = (TextView) findViewById(R.id.programme_display);
        yr = (TextView) findViewById(R.id.year_display);
        sm = (TextView) findViewById(R.id.semester_display);
        ay = (TextView) findViewById(R.id.academic_year_display);
        md = (TextView) findViewById(R.id.module_display);

        //getting the string passed from previous activity
        String sname = getIntent().getStringExtra("name");
        String stid = getIntent().getStringExtra("id");
        String spg= getIntent().getStringExtra("programme");
    }
}

```

```

String syr = getIntent().getStringExtra("year");
String ssm = getIntent().getStringExtra("semester");
String say = getIntent().getStringExtra("ayear");
String smd = getIntent().getStringExtra("module");

//displaying the text
name.setText(sname);
id.setText(stdid);
pg.setText(spg);
yr.setText(syr);
sm.setText(ssm);
ay.setText(say);
md.setText(smd);
}
}

```

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:id="@+id/layout3"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<EditText
    android:id="@+id/etModules"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:ems="10"
    android:hint="eg: CTE305, CTE306"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    app:layout_constraintEnd_toEndOf="@+id/textInputLayout2"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/textInputLayout2"
    app:layout_constraintTop_toBottomOf="@+id/textInputLayout2" />

<ImageView
    android:id="@+id/imageView2"
    android:layout_width="79dp"

```



```

    android:layout_height="74dp"
    android:layout_marginStart="166dp"
    android:layout_marginTop="7dp"
    android:layout_marginEnd="166dp"
    android:layout_marginBottom="8dp"
    app:layout_constraintBottom_toTopOf="@+id/main_label"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:srcCompat="@drawable/cst_logo" />

```

<TextView

```

    android:id="@+id/student_id_label"
    android:layout_width="126dp"
    android:layout_height="51dp"
    android:layout_marginTop="36dp"
    android:fontFamily="sans-serif-medium"
    android:text="Student ID:"
    android:textAlignment="textEnd"
    android:textColor="#2B4865"
    android:textSize="20sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="@+id/name_label"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/name_label"
    app:layout_constraintTop_toBottomOf="@+id/name_label" />

```

<TextView

```

    android:id="@+id/year_label"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="52dp"
    android:fontFamily="sans-serif-medium"
    android:text="Year:"
    android:textAlignment="textEnd"
    android:textColor="#2B4865"
    android:textSize="20sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="@+id/programme_label"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/programme_label"
    app:layout_constraintTop_toBottomOf="@+id/programme_label" />

```

<TextView

```

    android:id="@+id/module_label"
    android:layout_width="0dp"

```

```

        android:layout_height="wrap_content"
        android:layout_marginTop="28dp"
        android:fontFamily="sans-serif-medium"
        android:text="Modules:"
        android:textAlignment="textEnd"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="@+id/academic_year_label"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="@+id/academic_year_label"
        app:layout_constraintTop_toBottomOf="@+id/academic_year_label" />

```

<TextView

```

        android:id="@+id/academic_year_label"
        android:layout_width="152dp"
        android:layout_height="45dp"
        android:layout_marginTop="52dp"
        android:fontFamily="sans-serif-medium"
        android:text="Academic Year:"
        android:textAlignment="textEnd"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="@+id/semester_label"
        app:layout_constraintHorizontal_bias="0.969"
        app:layout_constraintStart_toStartOf="@+id/semester_label"
        app:layout_constraintTop_toBottomOf="@+id/semester_label" />

```

<TextView

```

        android:id="@+id/name_label"
        android:layout_width="130dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="10dp"
        android:layout_marginTop="36dp"
        android:fontFamily="sans-serif-medium"
        android:text="Name:"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toStartOf="@+id/etname"
        app:layout_constraintHorizontal_bias="0.684"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/main_label"
        android:textAlignment="textEnd" />

```

```

<EditText
    android:id="@+id/etname"
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="32dp"
    android:layout_marginTop="24dp"
    android:layout_marginEnd="5dp"
    android:ems="10"
    android:hint="Full Name"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.839"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/main_label" />

```

```

<TextView
    android:id="@+id/main_label"
    android:layout_width="360dp"
    android:layout_height="31dp"
    android:text="CST Student Registration Form"
    android:fontFamily="serif"
    android:textAlignment="center"
    android:textColor="#293462"
    android:textSize="22sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.49"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.142" />

```

```

<!-- layout used for dropdown list -->

```

```

<TextView
    android:id="@+id/semester_label"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="48dp"
    android:fontFamily="sans-serif-medium"
    android:text="Semester:"
    android:textAlignment="textEnd"
    android:textColor="#2B4865"
    android:textSize="20sp"
    android:textStyle="bold"

```

```

        app:layout_constraintEnd_toEndOf="@+id/year_label"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="@+id/year_label"
        app:layout_constraintTop_toBottomOf="@+id/year_label" />

<TextView
    android:id="@+id/programme_label"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:fontFamily="sans-serif-medium"
    android:text="Programme:"
    android:textAlignment="textEnd"
    android:textColor="#2B4865"
    android:textSize="20sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="@+id/student_id_label"
    app:layout_constraintStart_toStartOf="@+id/student_id_label"
    app:layout_constraintTop_toBottomOf="@+id/student_id_label" />

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout"

style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox.Exposed
DropdownMenu"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="@+id/etID"
    app:layout_constraintStart_toStartOf="@+id/etID"
    app:layout_constraintTop_toBottomOf="@+id/etID"
    app:layout_constraintVertical_bias="0.038">

    <!-- input type used for dropdown list -->
    <AutoCompleteTextView
        android:id="@+id/plist"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:inputType="none"
        android:minHeight="48dp"
        android:text="Select One" />

</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout2"

```

```
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox.Exposed
DropdownMenu"
```

```
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="@+id/textInputLayout3"
    app:layout_constraintStart_toStartOf="@+id/textInputLayout3"
    app:layout_constraintTop_toBottomOf="@+id/textInputLayout3"
    app:layout_constraintVertical_bias="0.104">
```

```
<AutoCompleteTextView
    android:id="@+id/aylist"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:inputType="none"
    android:minHeight="48dp"
    android:text="Select One" />
```

```
</com.google.android.material.textfield.TextInputLayout>
```

```
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout3"
```

```
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox.Exposed
DropdownMenu"
```

```
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    app:layout_constraintEnd_toEndOf="@+id/textInputLayout4"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/textInputLayout4"
    app:layout_constraintTop_toBottomOf="@+id/textInputLayout4">
```

```
<AutoCompleteTextView
    android:id="@+id/semesterlist"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:inputType="none"
    android:text="Select One" />
```

```
</com.google.android.material.textfield.TextInputLayout>
```

```
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout4"
```

```
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox.Exposed  
DropdownMenu"
```

```
    android:layout_width="0dp"  
    android:layout_height="wrap_content"  
    android:layout_marginTop="16dp"  
    android:layout_weight="1"  
    app:layout_constraintEnd_toEndOf="@+id/textInputLayout"  
    app:layout_constraintHorizontal_bias="0.0"  
    app:layout_constraintStart_toStartOf="@+id/textInputLayout"  
    app:layout_constraintTop_toBottomOf="@+id/textInputLayout">
```

```
<AutoCompleteTextView  
    android:id="@+id/yearlist"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_weight="1"  
    android:inputType="none"  
    android:text="Select One" />
```

```
</com.google.android.material.textfield.TextInputLayout>
```

```
<Button
```

```
    android:id="@+id/button"  
    android:layout_width="112dp"  
    android:layout_height="56dp"  
    android:backgroundTint="#0F3D3E"  
    android:fontFamily="sans-serif-condensed"  
    android:onClick="submit"  
    android:text="Submit"  
    android:textSize="18sp"  
    android:textStyle="bold"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.946"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toBottomOf="@+id/etModules"  
    app:layout_constraintVertical_bias="0.611" />
```

```
<EditText
```

```
    android:id="@+id/etID"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_marginTop="16dp"  
    android:ems="10"  
    android:hint="00000000"  
    android:inputType="phone"
```

```

        android:minHeight="48dp"
        app:layout_constraintEnd_toEndOf="@+id/etname"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="@+id/etname"
        app:layout_constraintTop_toBottomOf="@+id/etname" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

activity_details.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=".Details">

    <TextView
        android:id="@+id/module_display"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="38dp"
        android:fontFamily="sans-serif-black"
        android:textColor="#0F3D3E"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="@+id/academic_year_display"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="@+id/academic_year_display"
        app:layout_constraintTop_toBottomOf="@+id/academic_year_display" />

    <TextView
        android:id="@+id/academic_year_display"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="48dp"
        android:fontFamily="sans-serif-black"
        android:textColor="#0F3D3E"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="@+id/semester_display"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="@+id/semester_display"
        app:layout_constraintTop_toBottomOf="@+id/semester_display" />

```

```

<TextView
    android:id="@+id/semester_display"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="32dp"
    android:fontFamily="sans-serif-black"
    android:textColor="#0F3D3E"
    android:textSize="20sp"
    app:layout_constraintEnd_toEndOf="@+id/year_display"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/year_display"
    app:layout_constraintTop_toBottomOf="@+id/year_display" />

<TextView
    android:id="@+id/year_display"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="28dp"
    android:fontFamily="sans-serif-black"
    android:textColor="#0F3D3E"
    android:textSize="20sp"
    app:layout_constraintEnd_toEndOf="@+id/programme_display"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/programme_display"
    app:layout_constraintTop_toBottomOf="@+id/programme_display" />

<TextView
    android:id="@+id/programme_display"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="40dp"
    android:fontFamily="sans-serif-black"
    android:textColor="#0F3D3E"
    android:textSize="20sp"
    app:layout_constraintEnd_toEndOf="@+id/student_id_display"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="@+id/student_id_display"
    app:layout_constraintTop_toBottomOf="@+id/student_id_display" />

<TextView
    android:id="@+id/academic_year_label_2"
    android:layout_width="146dp"
    android:layout_height="44dp"
    android:layout_marginTop="48dp"
    android:fontFamily="sans-serif-medium"
    android:text="Academic Year:"

```



```

        android:textAlignment="textEnd"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="@+id/semester_label_2"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="@+id/semester_label_2"
        app:layout_constraintTop_toBottomOf="@+id/semester_label_2" />

```

<TextView

```

        android:id="@+id/programme_label_2"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:fontFamily="sans-serif-medium"
        android:text="Programme:"
        android:textAlignment="textEnd"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="@+id/student_id_label_2"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="@+id/student_id_label_2"
        app:layout_constraintTop_toBottomOf="@+id/student_id_label_2" />

```

<TextView

```

        android:id="@+id/module_label_2"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:fontFamily="sans-serif-medium"
        android:text="Modules:"
        android:textAlignment="textEnd"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="@+id/academic_year_label_2"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="@+id/academic_year_label_2"
        app:layout_constraintTop_toBottomOf="@+id/academic_year_label_2" />

```

<TextView

```

        android:id="@+id/year_label_2"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="32dp"

```

```

        android:fontFamily="sans-serif-medium"
        android:text="Year:"
        android:textAlignment="textEnd"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="@+id/programme_label_2"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="@+id/programme_label_2"
        app:layout_constraintTop_toBottomOf="@+id/programme_label_2" />

```

<TextView

```

        android:id="@+id/name_label_2"
        android:layout_width="130dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="8dp"
        android:layout_marginTop="44dp"
        android:fontFamily="sans-serif-medium"
        android:text="Name:"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.128"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/tvdetails"
        android:textAlignment="textEnd" />

```

<TextView

```

        android:id="@+id/name_display"
        android:layout_width="202dp"
        android:layout_height="28dp"
        android:layout_marginTop="44dp"
        android:fontFamily="sans-serif-black"
        android:textColor="#0F3D3E"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toEndOf="@+id/name_label_2"
        app:layout_constraintTop_toBottomOf="@+id/tvdetails" />

```

<TextView

```

        android:id="@+id/student_id_display"
        android:layout_width="204dp"
        android:layout_height="29dp"
        android:layout_marginTop="44dp"

```

```

        android:fontFamily="sans-serif-black"
        android:textColor="#0F3D3E"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="@+id/name_display"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toEndOf="@+id/name_label_2"
        app:layout_constraintTop_toBottomOf="@+id/name_display" />

```

<TextView

```

        android:id="@+id/semester_label_2"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="32dp"
        android:fontFamily="sans-serif-medium"
        android:text="Semester:"
        android:textAlignment="textEnd"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="@+id/year_label_2"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="@+id/year_label_2"
        app:layout_constraintTop_toBottomOf="@+id/year_label_2" />

```

<TextView

```

        android:id="@+id/student_id_label_2"
        android:layout_width="126dp"
        android:layout_height="51dp"
        android:layout_marginTop="44dp"
        android:fontFamily="sans-serif-medium"
        android:text="Student ID:"
        android:textAlignment="textEnd"
        android:textColor="#2B4865"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="@+id/name_label_2"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="@+id/name_label_2"
        app:layout_constraintTop_toBottomOf="@+id/name_label_2" />

```

<TextView

```

        android:id="@+id/tvdetails"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="serif"
        android:text="Student Details"

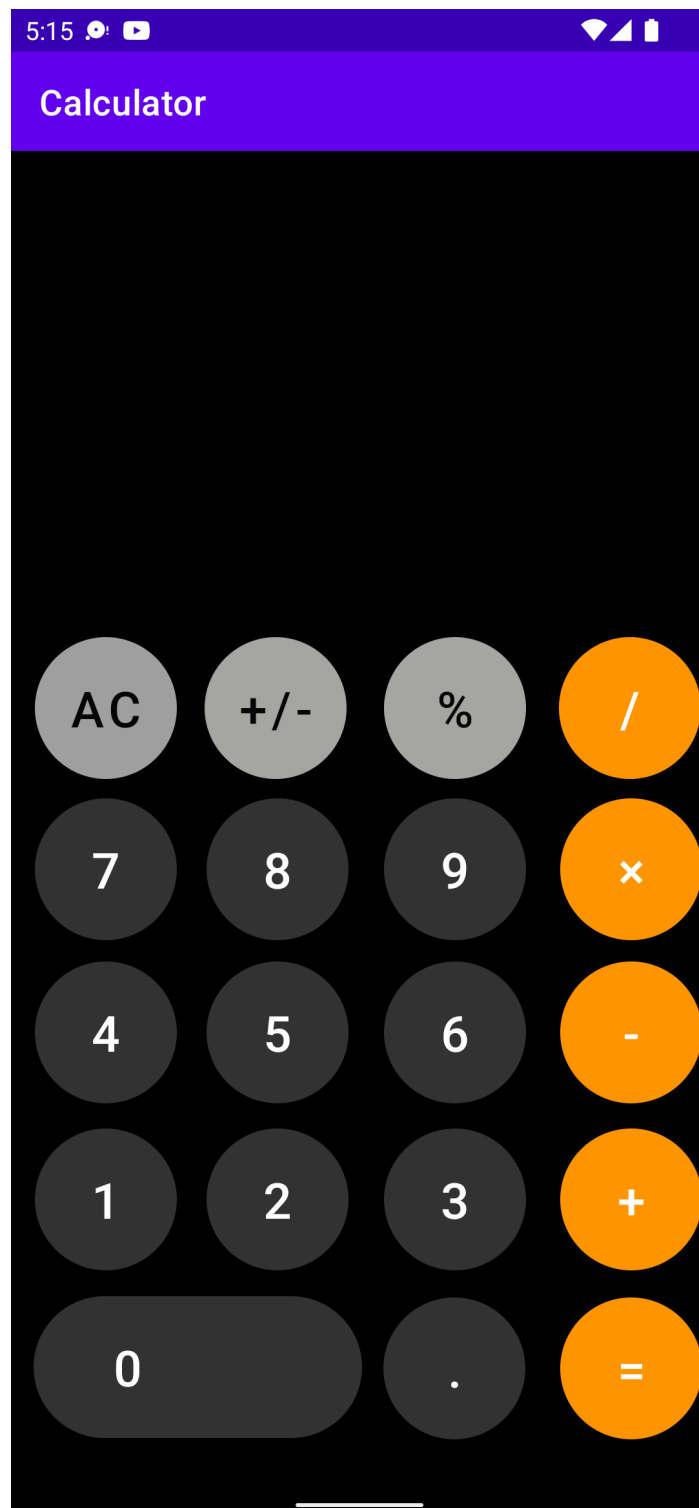
```

```
    android:textAlignment="center"
    android:textColor="#293462"
    android:textSize="22sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.051" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Output

Calculator




Student Registration

Form View

5:29

Student Registration



CST Student Registration Form

Name:

Divyash Chhetri

Student ID:

02200174

Programme:

BE IT

Year:

3rd Year

Semester:

Semester 1

Academic Year:

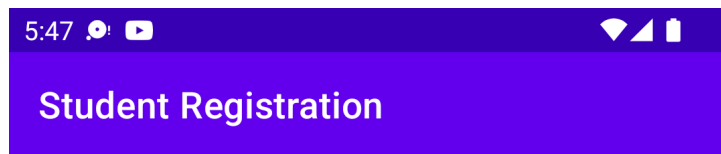
AS2022

Modules:

CTE305, CTE306

SUBMIT

Details View



Student Details

Name: Divyash Chhetri

Student ID: 02200174

Programme: BE IT

Year: 3rd Year

Semester: Semester 1

Academic Year: AS2022

Modules: CTE305, CTE306



Conclusion

By the end of this lab I learnt how to replicate iOS calculator design inside android studio using java and also use intents to link between different activities. I explored on importing image into an xml file, by using the college logo in my student registration form. Using intents, the student registration form details were displayed in different activity. Through this lab I also learn using drop downs for filling up forms and collecting user input and changing the activities once the user presses a button.

References

Android. (n.d.). *Android Studio Docs*. Retrieved 08 09, 2022, from Developers Android:
<https://developer.android.com/docs>

Voytenko, V. (2019, 01 11). *Adding code to a Button Click in Android Studio (Java)*.
Retrieved 08 09, 2022, from YouTube: <https://www.youtube.com/watch?v=W-2fOVxYPSA>