INDRAPRASTHA COLLEGE FOR WOMEN

(UNIVERSITY OF DELHI)

Department of Computer Science

ANDROID PROGRAMMING PROJECT

' UNIT CONVERTER'

Submitted To:

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TITLE OF THE APPLICATION

Unit Converter App

PURPOSE OF THE APPLICATION

A **conversion** factor is used to change the **units** of a measured quantity without changing its value. **Unit conversion** is important to convert numbers into different units. Human don't have to convert the units manually and it makes their task easy. The app will receive input from the user and will convert it into desired result and show the answer on the next page.

COMPONENTS OF THE APPLICATION

There is one component that is present in our app i.e. Activity.

There are two Activities present in our app:-

1. **MainActivity.java**

   In this activity the user can enter number and can select the units from the spinner. The desired result will be send through an intent to the next Activity.

2. **SecondActivity.java**

   In this activity through intent it will get the result from first activity and show the desired answer to the user.

USER INTERFACE OF THE APPLICATION

There are two xml files in our app:-

1. activity_main.xml

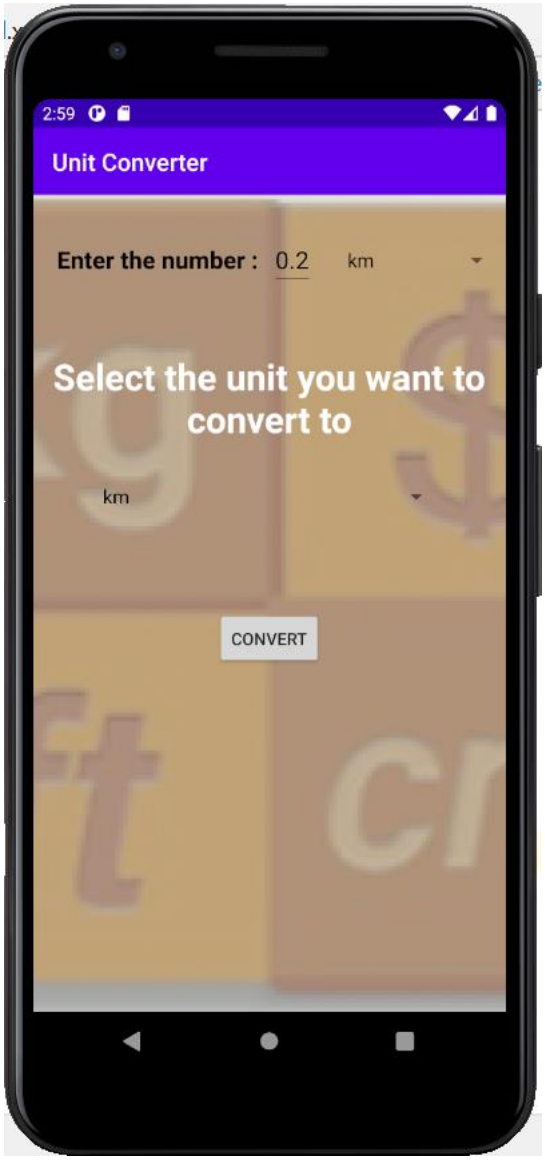
   In this layout we have two textviews, one editview in which user has to write the number they want to convert and two spinners in one we have to select the unit we have to convert and in next we have to select unit we want our answer to be in.

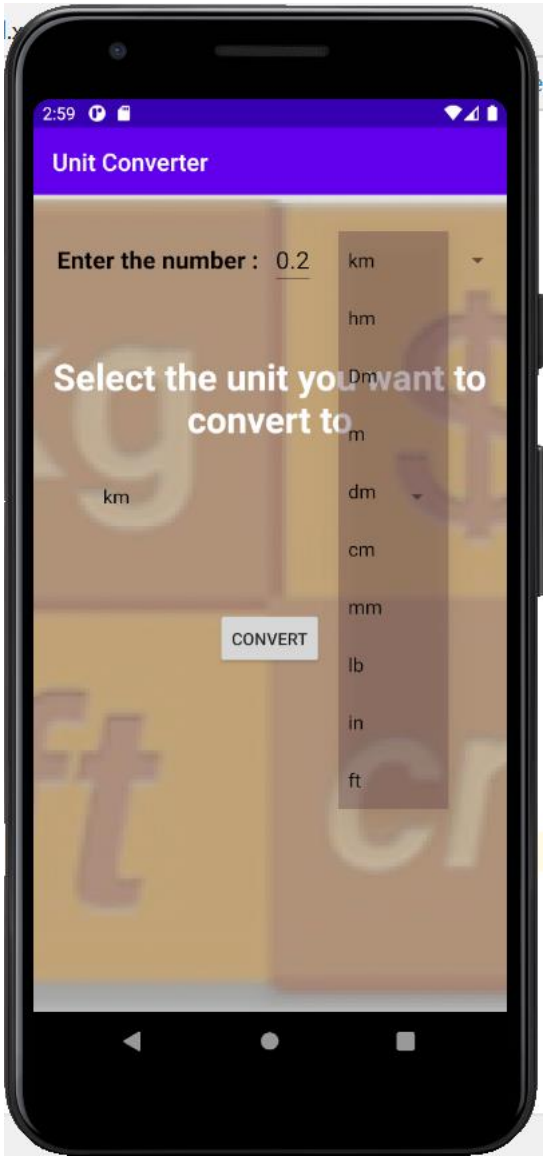
2. activity_second.xml

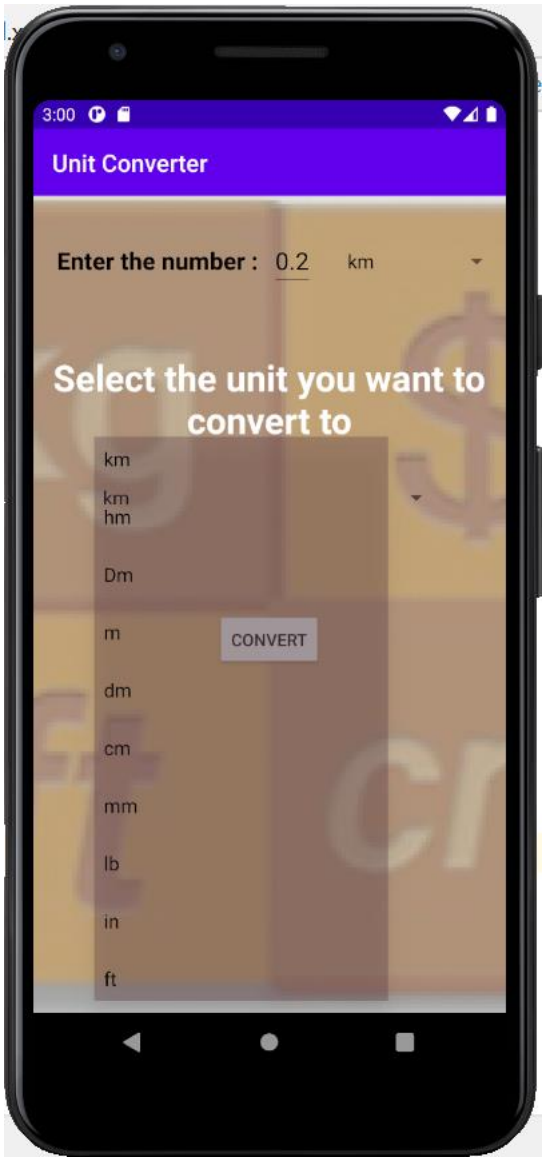
   In this layout we have two textviews, one is just static text i.e. Answer and the other one is taking answer from intent and showing it.

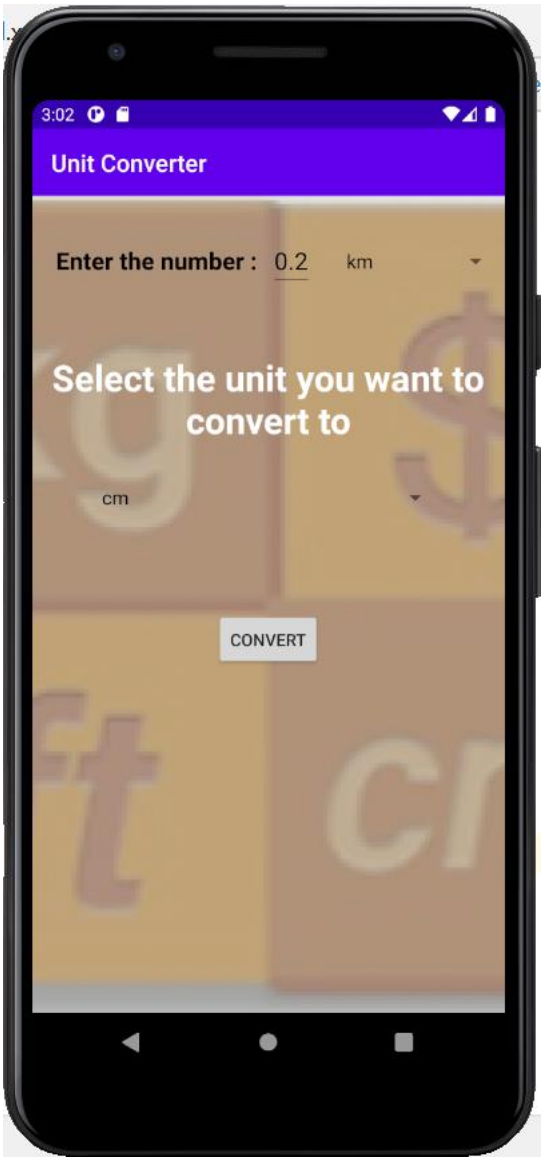
SUPPORTING SCREENSHORT OF THE APPLICATION

- Converting 0.2 km to cm:



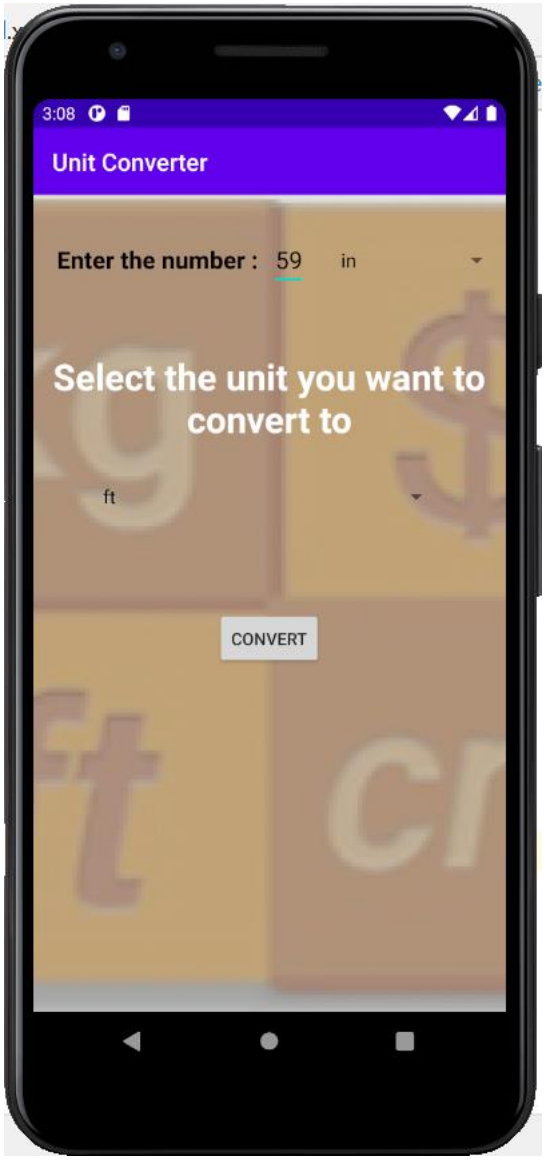



3:00
Unit Converter
Enter the number : 0.2
km
Select the unit you want to convert to
km
km
hm
Dm
m
dm
cm
mm
lb
in
ft
CONVERT

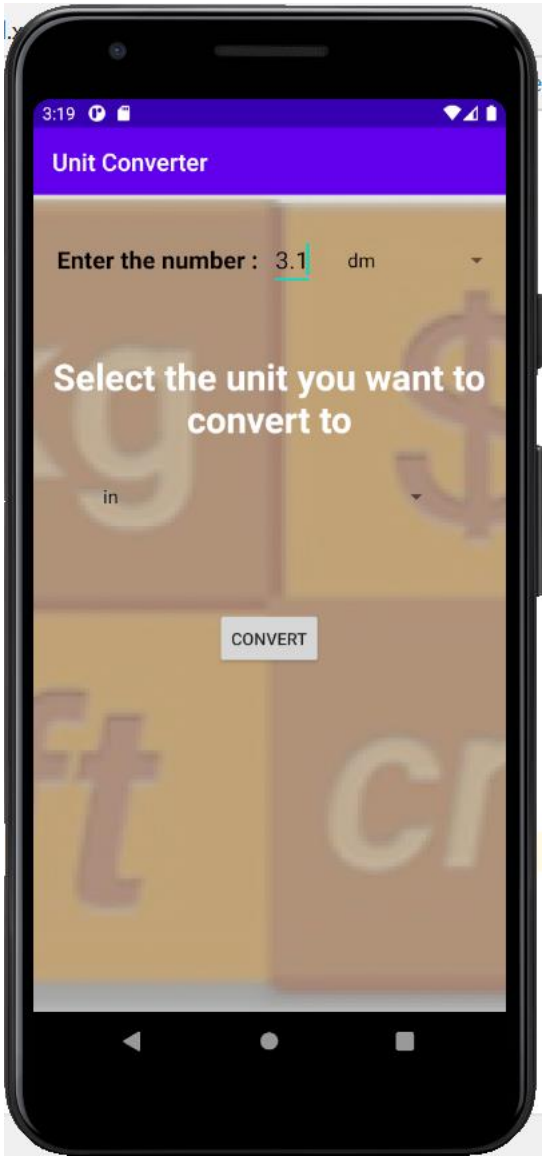

3:02
Unit Converter
Enter the number : 0.2
km
Select the unit you want to convert to
cm
CONVERT


3:02
Unit Converter
Answer
20000.0 cm

- Converting 59 in to ft:



- Converting 3.1 dm to in:



CODE OF THE APPLICATION

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@drawable/ucimage"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="30dp"
        android:orientation="horizontal">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/enter_the_number"
            android:textColor="@color/black"
            android:textSize="20dp"
            android:textStyle="bold" />

        <EditText
            android:id="@+id/text"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="10dp"
            android:layout_marginRight="20dp"
            android:textColor="@color/black"
            android:textSize="20dp"
            android:text="0.2"/>

        <Spinner
            android:id="@+id/units"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:popupBackground="#5E5E3F46"
            android:text="@array/units" />
    </LinearLayout>

    <TextView
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="42dp"
        android:gravity="center_horizontal"
        android:padding="10dp"
        android:text="@string/select_the_unit_you_want_to_convert_to"
        android:textColor="@color/white"
        android:textSize="30dp"
        android:textStyle="bold" />

    <Spinner
        android:id="@+id/unit"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="10dp"
        android:layout_marginRight="50dp"
        android:popupBackground="#5E5E3F46"
        android:text="@array/units" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="70dp"
        android:text="@string/convert" />

</LinearLayout>
```

MainActivity.java

```
package com.example.unitconverter;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener, AdapterView.OnItemSelectedListener {

    Spinner sp1, sp2;
    Button b;
    EditText e;
```

```
    String text1 = "", text2 = "";
    double num=0.0;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        sp1 = findViewById(R.id.units);
        sp2 = findViewById(R.id.unit);
        b = findViewById(R.id.button);
        e = findViewById(R.id.text);

        ArrayAdapter<CharSequence> flo =
ArrayAdapter.createFromResource(this, R.array.units,
R.layout.support_simple_spinner_dropdown_item);
        sp1.setAdapter(flo);
        ArrayAdapter<CharSequence> uni =
ArrayAdapter.createFromResource(this, R.array.units,
R.layout.support_simple_spinner_dropdown_item);
        sp2.setAdapter(uni);
        sp1.setOnItemSelectedListener(this);
        sp2.setOnItemSelectedListener(this);
        b.setOnClickListener(this);
    }

    @Override
    public void onItemSelected(AdapterView<?> parent, View view, int
position, long id) {
        text1 = sp1.getSelectedItem().toString();
        text2 = sp2.getSelectedItem().toString();
    }

    @Override
    public void onNothingSelected(AdapterView<?> parent) {

    }

    @Override
    public void onClick(View v) {
        String number=e.getText().toString();
        num = Double.parseDouble(number);
        switch (text1) {
            case "km":
                switch (text2) {
                    case "km":
                        break;
                    case "hm":
                        num = num * 10;
                        break;
                    case "Dm":
                        num = num * 100;
                        break;
                    case "m":
                        num = num * 1000;
```

```
                    break;
                case "dm":
                    num = num * 10000;
                    break;
                case "cm":
                    num = num * 100000;
                    break;
                case "mm":
                    num = num * 1000000;
                    break;
                case "lb":
                    num = num * 2.20462;
                    break;
                case "in":
                    num = num * 39370.1;
                    break;
                case "ft":
                    num = num * 3280.84;
                    break;
            }
            break;
        case "hm":
            switch (text2) {
                case "km":
                    num = num * 0.1;
                    break;
                case "hm":
                    break;
                case "Dm":
                    num = num * 10;
                    break;
                case "m":
                    num = num * 100;
                    break;
                case "dm":
                    num = num * 1000;
                    break;
                case "cm":
                    num = num * 10000;
                    break;
                case "mm":
                    num = num * 100000;
                    break;
                case "lb":
                    num = num * 2.20462 * 10;
                    break;
                case "in":
                    num = num * 3937.01;
                    break;
                case "ft":
                    num = num * 328.084;
                    break;
            }
            break;
```

```
case "Dm":
    switch (text2) {
        case "km":
            num = num * 0.01;
            break;
        case "hm":
            num = num * 0.1;
            break;
        case "Dm":
            break;
        case "m":
            num = num * 10;
            break;
        case "dm":
            num = num * 100;
            break;
        case "cm":
            num = num * 1000;
            break;
        case "mm":
            num = num * 10000;
            break;
        case "lb":
            num = num * 2.20462 * 100;
            break;
        case "in":
            num = num * 393.701;
            break;
        case "ft":
            num = num * 32.8084;
            break;
    }
    break;
case "m":
    switch (text2) {
        case "km":
            num = num * 0.001;
            break;
        case "hm":
            num = num * 0.01;
            break;
        case "Dm":
            num = num * 0.1;
            break;
        case "m":
            break;
        case "dm":
            num = num * 10;
            break;
        case "cm":
            num = num * 100;
            break;
        case "mm":
            num = num * 1000;
```

```
                    break;
                case "lb":
                    num = num * 2.20462 * 1000;
                    break;
                case "in":
                    num = num * 39.3701;
                    break;
                case "ft":
                    num = num * 3.28084;
                    break;
            }
            break;
        case "dm":
            switch (text2) {
                case "km":
                    num = num * 0.0001;
                    break;
                case "hm":
                    num = num * 0.001;
                    break;
                case "Dm":
                    num = num * 0.01;
                    break;
                case "m":
                    num = num * 0.1;
                    break;
                case "dm":
                    break;
                case "cm":
                    num = num * 10;
                    break;
                case "mm":
                    num = num * 100;
                    break;
                case "lb":
                    num = num * 2.20462 * 10000;
                    break;
                case "in":
                    num = num * 3.93701;
                    break;
                case "ft":
                    num = num * 0.328084;
                    break;
            }
            break;
        case "cm":
            switch (text2) {
                case "km":
                    num = num * 0.00001;
                    break;
                case "hm":
                    num = num * 0.0001;
                    break;
                case "Dm":
```

```
                num = num * 0.001;
                break;
            case "m":
                num = num * 0.01;
                break;
            case "dm":
                num = num * 0.1;
                break;
            case "cm":
                break;
            case "mm":
                num = num * 10;
                break;
            case "lb":
                num = num * 2.20462 * 100000;
                break;
            case "in":
                num = num * 0.393701;
                break;
            case "ft":
                num = num * 0.0328084;
                break;
        }
        break;
    case "mm":
        switch (text2) {
            case "km":
                num = num * 0.000001;
                break;
            case "hm":
                num = num * 0.00001;
                break;
            case "Dm":
                num = num * 0.0001;
                break;
            case "m":
                num = num * 0.001;
                break;
            case "dm":
                num = num * 0.01;
                break;
            case "cm":
                num = num * 0.1;
                break;
            case "mm":
                break;
            case "lb":
                num = num * 2.20462 * 1000000;
                break;
            case "in":
                num = num * 0.0393701;
                break;
            case "ft":
                num = num * 0.00328084;
```

```
                break;
        }
        break;
    case "lb":
        switch (text2) {
            case "km":
                num = num * 0.453592;
                break;
            case "hm":
                num = num * 0.453592 * 10;
                break;
            case "Dm":
                num = num * 0.453592 * 100;
                break;
            case "m":
                num = num * 0.453592 * 1000;
                break;
            case "dm":
                num = num * 0.453592 * 10000;
                break;
            case "cm":
                num = num * 0.453592 * 100000;
                break;
            case "mm":
                num = num * 0.453592 * 1000000;
                break;
            case "lb":
                break;
            case "in":
                num = num * 0.453592 * 39370.1;
                break;
            case "ft":
                num = num * 0.453592 * 39370.1 * 0.0833333;
                break;
        }
        break;
    case "in":
        switch (text2) {
            case "km":
                num = num * 0.0000254 ;
                break;
            case "hm":
                num = num * 0.000254 ;
                break;
            case "Dm":
                num = num * 0.00254 ;
                break;
            case "m":
                num = num * 0.0254 ;
                break;
            case "dm":
                num = num * 0.254 ;
                break;
            case "cm":
```

```
                    num = num * 2.54;
                    break;
                case "mm":
                    num = num * 25.4;
                    break;
                case "lb":
                    num = num * 25.4 * 0.002204623;
                    break;
                case "in":
                    break;
                case "ft":
                    num = num * 0.0833333;
                    break;
            }
            break;
        case "ft":
            switch (text2) {
                case "km":
                    num = num * 0.0003048;
                    break;
                case "hm":
                    num = num * 0.003048;
                    break;
                case "Dm":
                    num = num * 0.03048;
                    break;
                case "m":
                    num = num * 0.3048;
                    break;
                case "dm":
                    num = num * 3.048;
                    break;
                case "cm":
                    num = num * 30.48;
                    break;
                case "mm":
                    num = num * 304.8;
                    break;
                case "lb":
                    num = num * 12 * 25.4 * 0.002204623;
                    break;
                case "in":
                    num = num * 12;
                    break;
                case "ft":
                    break;
            }
            break;
    }
    String s = Double.toString(num);
    Intent i = new Intent(this, SecondActivity.class);
    i.putExtra("answer", s);
    i.putExtra("selected", text2);
    startActivity(i);
```

```
    }
}
```

activity_second.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#85875330"
    tools:context=".SecondActivity"
    android:orientation="vertical">

    <TextView
        android:id="@+id/answer"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textStyle="bold"
        android:gravity="center"
        android:textSize="40sp"
        android:layout_marginTop="150dp"
        android:text="@string/answer"/>

    <TextView
        android:id="@+id/ans"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="40dp"
        android:textSize="30sp"
        android:gravity="center"
        tools:text="num"/>

</LinearLayout>
```

SecondActivity.java

```
package com.example.unitconverter;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class SecondActivity extends AppCompatActivity {
    TextView t;
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        t = findViewById(R.id.ans);
        Intent i = getIntent();
        String m = i.getStringExtra("answer");
        String p = i.getStringExtra("selected");
        String result = m + "  " + p;
        t.setText(result);
    }
}
```

strings.xml

```
<resources>
    <string name="app_name">Unit Converter</string>
    <string name="enter_the_number">Enter the number :</string>
    <string name="select_the_unit_you_want_to_convert_to">Select the unit
you want to convert to</string>
    <string name="convert">convert</string>
    <string name="answer">Answer</string>
    <string-array name="units">
        <item>km</item>
        <item>hm</item>
        <item>Dm</item>
        <item>m</item>
        <item>dm</item>
        <item>cm</item>
        <item>mm</item>
        <item>lb</item>
        <item>in</item>
        <item>ft</item>
    </string-array>
</resources>
```


THANK
YOU!