TECHNEX IIT(BHU)

PROJECT REPORT ON

ANDROID APPLICATION DEVELOPMENT

EISYSTEM SERVICES

A PROJECT REPORT ON BMI CALCULATOR

(APP NAME –"BMICAL")

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ACKNOWLEDGEMENT

It is a great pleasure to present this report on the topic named “ANDROID APP DEVELOPMENT” undertaken by me as part of my B. Tech curriculum. I take this opportunity to express my deep gratitude and most sincere thanks to TECHNEX IIT (BHU) Varanasi and my project mentor, Mr. Shailendra Singh for giving most valuable suggestions, helpful guidance and encouragement in the execution of this project work. I would like to thank my mentor for guiding me. Last but not the least I’m grateful to all the team members of EISYSTEM services for giving me such a great opportunity.

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Abstract of Project

It's project of Body-mass index (BMI) is a measurement model health-care professionals use to determine whether a person is overweight, and if so, by how much. To compute BMI, you need a person's weight in kilograms and height in meters. The BMI is simply weight/ height^2, converted to a unitless value.

Project Summary

The aim of the project is to design a BMI unit which gives numeric value and this numeric value gives a percentage which correlates to the body fat composition. If the numeric value is less than 18.5, the person will consider as underweight and person will be considered healthy it the value lies between 18.5 and 25.Above 25 and below 30 man will be considered overweight and above 30 man is facing obesity, He must very carefully for his health . There is Health tips given for fitness maintenance.

Introduction

Body mass index (BMI) is an estimate of body fat based on height and weight. It doesn't measure body fat directly, but instead uses an equation to make an approximation. BMI can help determine whether a person is at an unhealthy or healthy weight.

A high BMI can be a sign of too much fat on the body, while a low BMI can be a sign of too little fat on the body. The higher a person's BMI, the greater their chances of developing certain serious conditions, such as heart disease, high blood pressure, and diabetes. A very low BMI can also cause health problems, including bone loss, decreased immune function, and anaemia.

Details of Process

The **Body Mass Index (BMI)** is calculated by putting your body's height and you weight into relation and is commonly accepted as a better method in comparison to the formulae which were used previously:

1. The Normal Weight Formula: Body height minus 100
2. The Ideal Weight Formula: Normal weight multiplied by 0.9 for male adults, times 0.9 once more for female adults

The Body Mass Index is calculated by dividing the body weight in kilograms by the body height squared in meters.

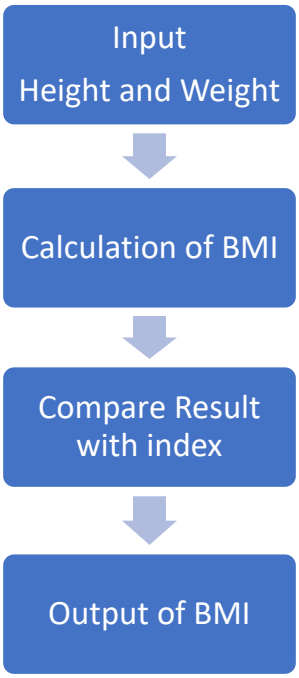
FORMULA:

BMI = WEIGHT OR MASS(KG) / [HEIGHT (M) X HEIGHT (M)]

System Requirement

1. Programming language – Java ,XML for designing the app
2. Operating System – 64-bit Windows 7,8,10,11 or Linux Ubuntu etc
3. Android Studio
4. Smartphone
5. USB cable
6. 8GB RAM or more
7. X86_64 CPU 2nd gen Intel core, or AMD CPU with support for a Windows Hypervisor

Data Flow Diagram



Algorithm

1. Start
2. Take Input Height in KG and weight in meters
3. Calculate BMI result using formula:
   BMI = WEIGHT OR MASS(KG) / [HEIGHT (M) X HEIGHT (M)]
4. Compare if result BMI > 18.5:
   Output Underweight
   Else if result bmi >=18.5 and bmi <= 24.9
   Output Normal
   Else if result bmi >=24.9 and bmi <=29.9
   Output Over weight
   Else
   Output Obesity
5. Stop

Source Code and Output Screenshots

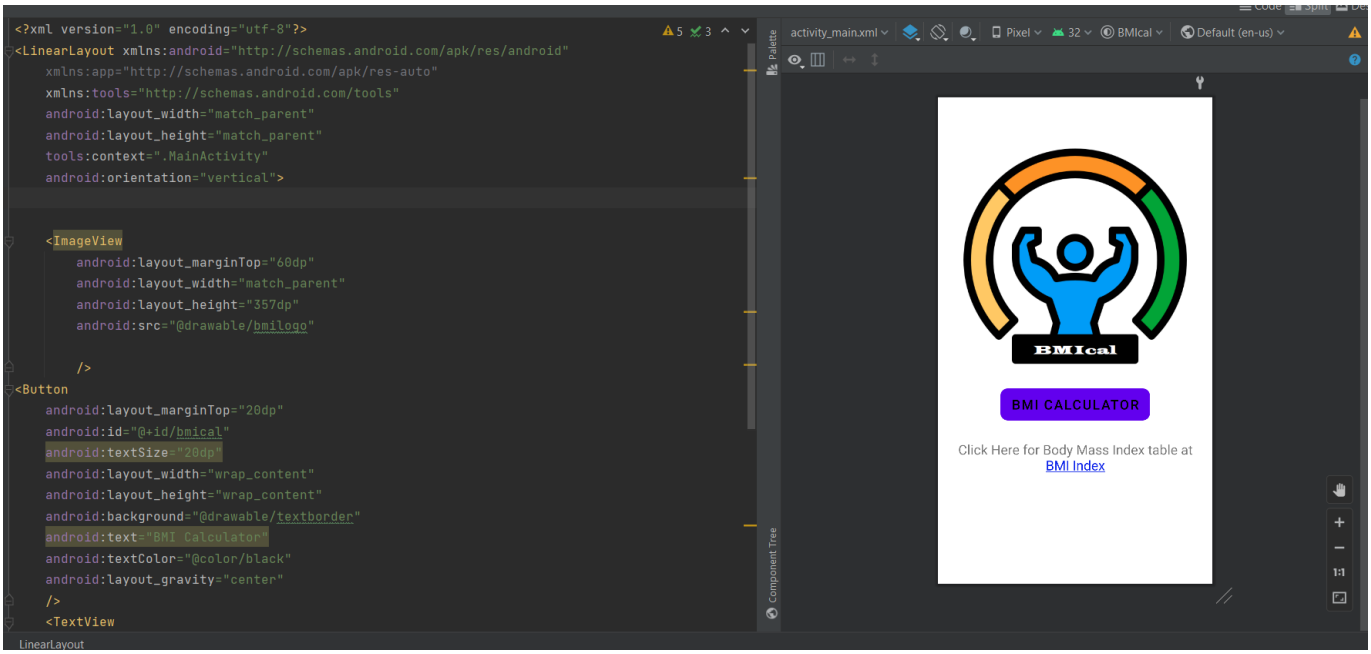
1. Icon of Application

2. Main Activity Source code - Java:

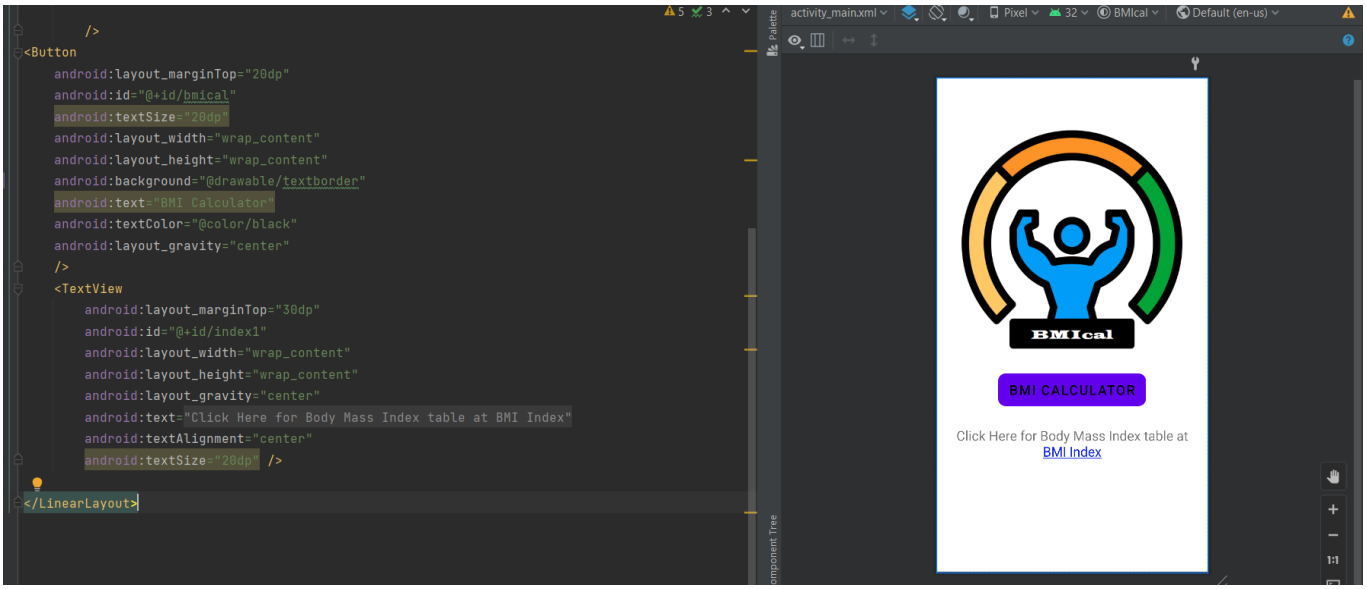
```java
package com.example.bmical;

import ...

public class MainActivity extends AppCompatActivity {
    Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        btn = findViewById(R.id.bmical);

        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i = new Intent( packageContext: MainActivity.this,home.class);
                 startActivity(i);
            }
        });

        setupHyperLink();
    }
    public void setupHyperLink(){
        TextView linktextview = findViewById(R.id.index1);
        linktextview.setMovementMethod(LinkMovementMethod.getInstance());
    }
}
```

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"
    tools:context=".MainActivity"
    android:orientation="vertical">


    <ImageView
        android:layout_marginTop="60dp"
        android:layout_width="match_parent"
        android:layout_height="357dp"
        android:src="@drawable/bmilogo"

        />
<Button
    android:layout_marginTop="20dp"
    android:id="@+id/bmical"
    android:textSize="20dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:background="@drawable/textborder"
    android:text="BMI Calculator"
    android:textColor="@color/black"
    android:layout_gravity="center"
    />
    <TextView
```




```
        />
<Button
    android:layout_marginTop="20dp"
    android:id="@+id/bmical"
    android:textSize="20dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:background="@drawable/textborder"
    android:text="BMI Calculator"
    android:textColor="@color/black"
    android:layout_gravity="center"
    />
    <TextView
        android:layout_marginTop="30dp"
        android:id="@+id/index1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="Click Here for Body Mass Index table at BMI Index"
        android:textAlignment="center"
        android:textSize="20dp" />

</LinearLayout>
```

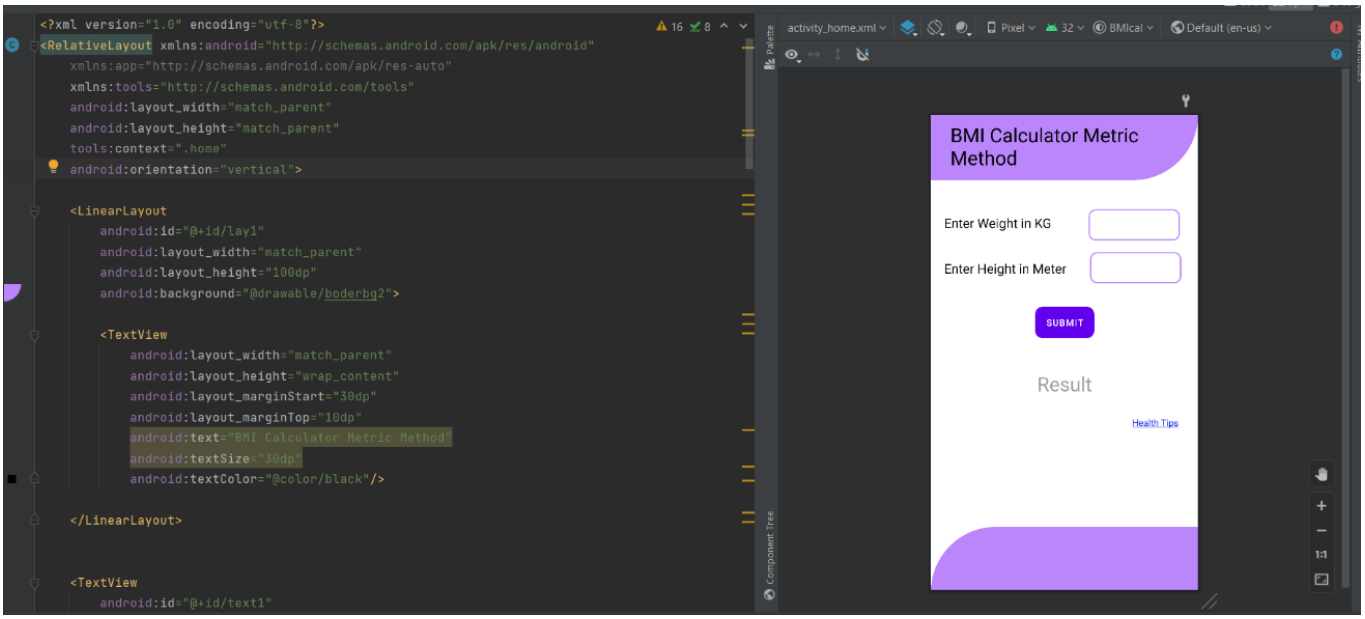


3. Home Activity Source code – Java:

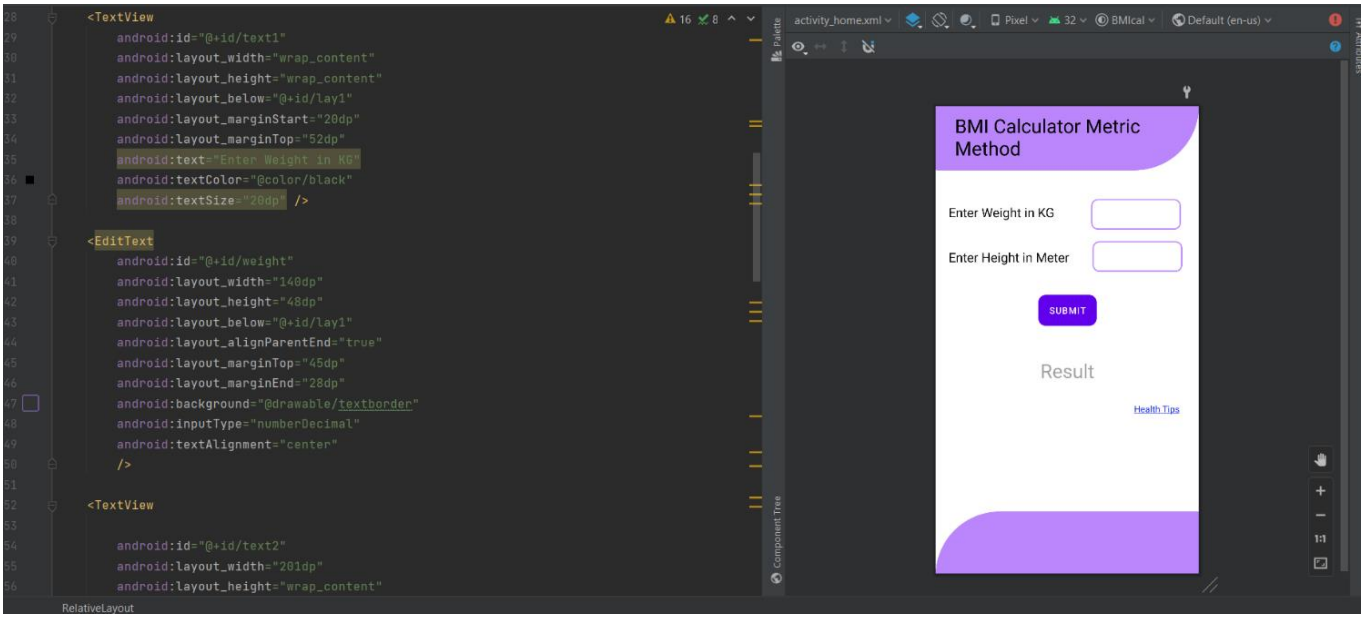
```java
package com.example.bmical;

import ...

public class home extends AppCompatActivity {
    TextView rslt,hlthtp;
    Button sbmt;
    EditText hght,wght;

    public static float result(float a1, float a2) {
        float result = a1/(a2*a2);
        return result;
    }


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

        hght = findViewById(R.id.height);
        wght = findViewById(R.id.weight);
        rslt = findViewById(R.id.textresult);
        hlthtp = findViewById(R.id.healthtip);
        sbmt = findViewById(R.id.button1);

        hlthtp.setMovementMethod(LinkMovementMethod.getInstance());

        sbmt.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
            public void onClick(View v) {
                float height, weight, result;
                height = Float.parseFloat(hght.getText().toString());
                weight = Float.parseFloat(wght.getText().toString());

                result = result(weight, height);

                if (result < 18.5) {
                    rslt.setText("Your BMI is " + result + "\n You are Underweight");
                } else if (result >= 18.5 && result <= 24.9) {
                    rslt.setText("Your BMI is " + result + "\n Your BMI is Normal");
                } else if (result >= 25 && result < 29.9) {
                    rslt.setText("Your BMI is " + result + "\n You are OverWeight");
                } else {
                    rslt.setText("Your BMI is " + result + "\n Obesity");
                }
            }
        });

    }
}
```

XML:

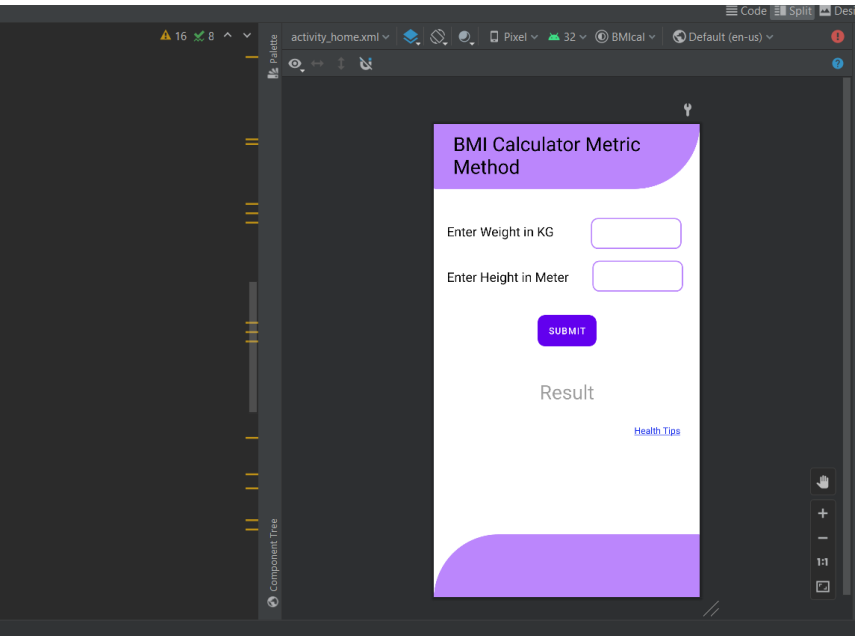
```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"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

    <LinearLayout
        android:id="@+id/lay1"
        android:layout_width="match_parent"
        android:layout_height="100dp"
        android:background="@drawable/boderbg2">

        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginStart="30dp"
            android:layout_marginTop="10dp"
            android:text="BMI Calculator Metric Method"
            android:textSize="30dp"
            android:textColor="@color/black"/>

    </LinearLayout>


    <TextView
        android:id="@+id/text1"
```



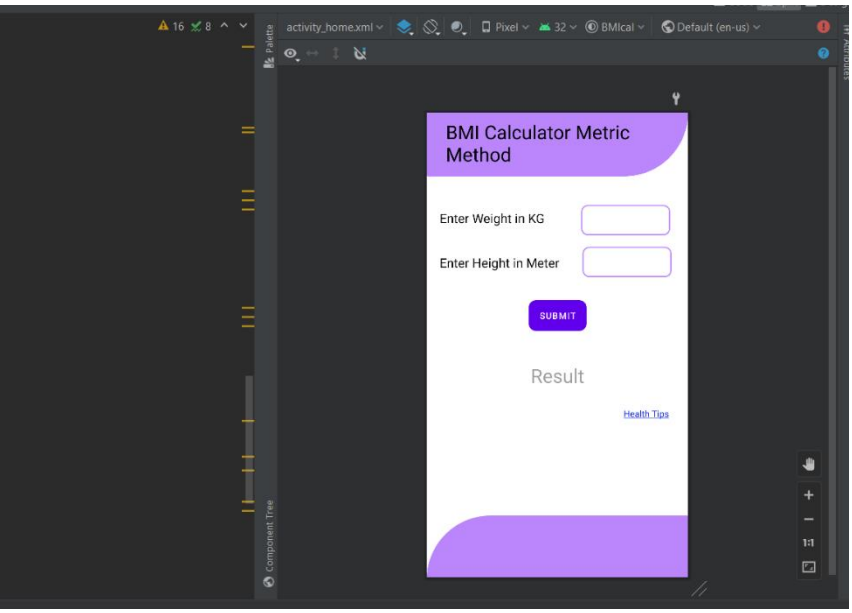

```xml
    <TextView
        android:id="@+id/text1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/lay1"
        android:layout_marginStart="20dp"
        android:layout_marginTop="52dp"
        android:text="Enter Weight in KG"
        android:textColor="@color/black"
        android:textSize="20dp" />

    <EditText
        android:id="@+id/weight"
        android:layout_width="140dp"
        android:layout_height="48dp"
        android:layout_below="@+id/lay1"
        android:layout_alignParentEnd="true"
        android:layout_marginTop="45dp"
        android:layout_marginEnd="28dp"
        android:background="@drawable/textborder"
        android:inputType="numberDecimal"
        android:textAlignment="center"
        />

    <TextView

        android:id="@+id/text2"
        android:layout_width="201dp"
        android:layout_height="wrap_content"
```



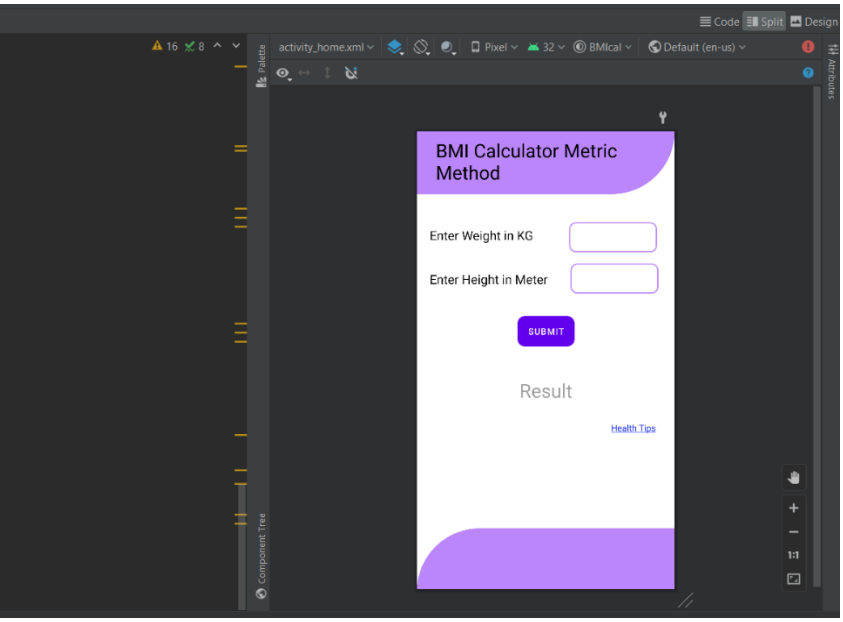
```
<TextView

    android:id="@+id/text2"
    android:layout_width="201dp"
    android:layout_height="wrap_content"
    android:layout_below="@+id/text1"
    android:layout_marginStart="20dp"
    android:layout_marginTop="43dp"
    android:layout_marginBottom="20dp"
    android:text="Enter Height in Meter"
    android:textColor="@color/black"
    android:textSize="20dp" />

<EditText
    android:textAlignment="center"
    android:id="@+id/height"
    android:layout_width="140dp"
    android:layout_height="48dp"
    android:layout_below="@+id/weight"
    android:layout_alignParentEnd="true"
    android:layout_marginTop="18dp"
    android:layout_marginEnd="26dp"
    android:background="@drawable/textborder"
    android:inputType="numberDecimal" />

<Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```



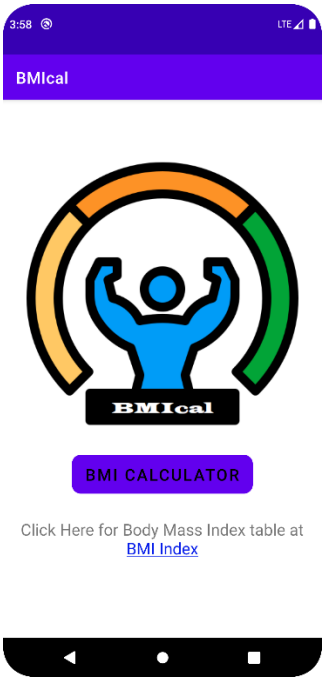

```
<Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/height"
    android:layout_alignParentEnd="true"
    android:layout_marginTop="36dp"
    android:layout_marginEnd="160dp"
    android:background="@drawable/textborder"
    android:text="Submit" />

<TextView
    android:id="@+id/textresult"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button1"
    android:layout_marginTop="50dp"
    android:hint="Result"
    android:textAlignment="center"
    android:textColor="@color/black"
    android:textSize="30dp" />

<TextView
    android:id="@+id/healthtip"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/textresult"
    android:layout_alignParentRight="true"
```

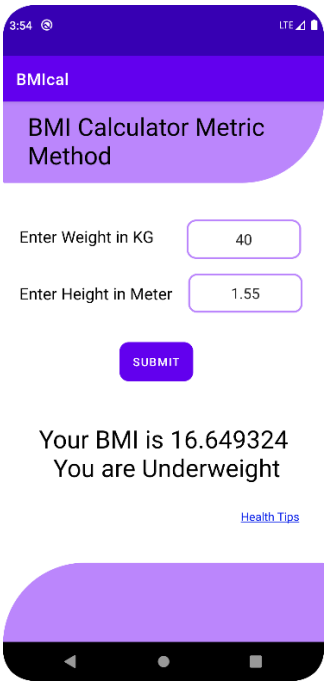


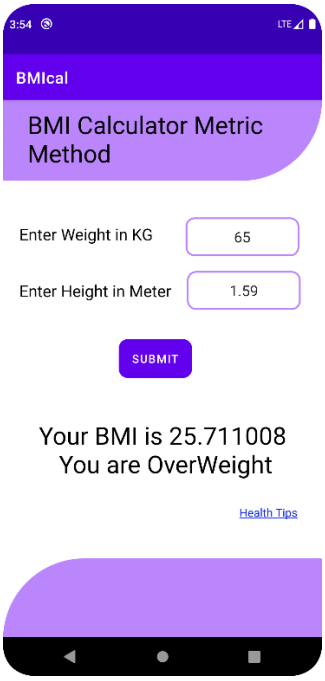

```
    android:textSize="30dp" />

<TextView
    android:id="@+id/healthtip"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/textresult"
    android:layout_alignParentRight="true"
    android:layout_marginTop="30dp"
    android:layout_marginRight="30dp"
    android:text="@string/hyperlink2"
    android:textColor="@color/purple_700" />

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="100dp"
    android:layout_alignParentBottom="true"
    android:layout_marginTop="475dp"
    android:layout_marginBottom="-3dp"
    android:background="@drawable/boderbg">

</LinearLayout>

</RelativeLayout>
```

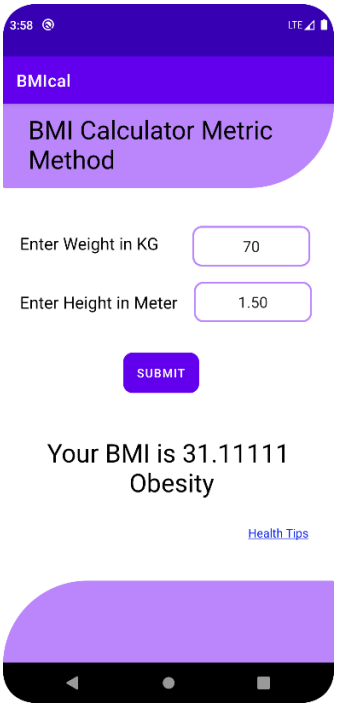


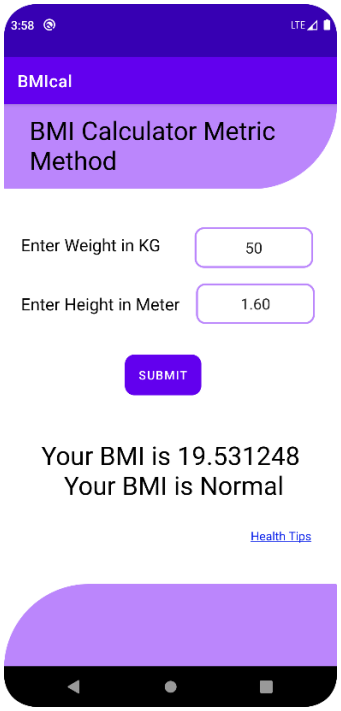
Output Screenshots:











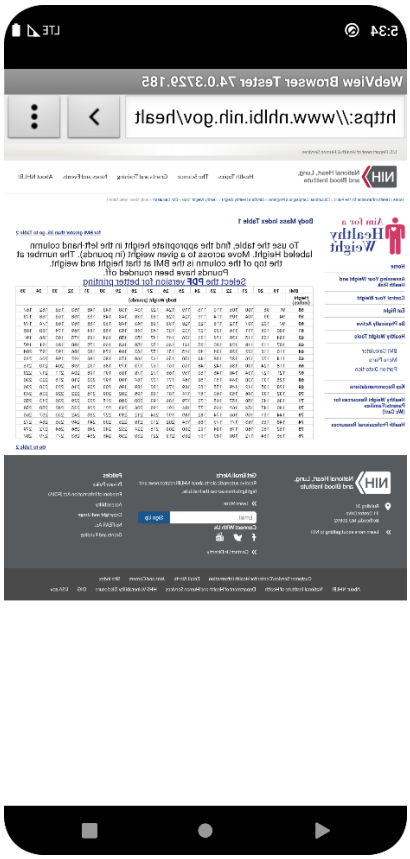
4.Hyperlinks of BMI Index and Health Tips

MainActivity.java | activity_main.xml | activity_home.xml | strings.xml | bmilogo.png

Edit translations for all locales in the translations editor.

```
<resources>
    <string name="app_name">BMIcal</string>
    <string name="hyperlink">Click Here for Body Mass Index table at\n<a href="https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi_tbl.htm">
        BMI Index
    </a>
    </string>
    <string name="hyperlink2">
        <a href="https://www.trendymami.com/8-healthy-life-hacks-for-busy-people/?keyword=healthy%20tips&amp;utm_source=bing&amp;
        utm_medium=cpc&amp;utm_campaign=India%20Traffic&amp;utm_term=healthy%20tips&amp;
        utm_content=Healthy%20Life%20Hacks%20for%20Busy%20People%20%E2%80%93%208%20Tips%20for%20a%20Healthier%20Lifestyle">
            Health Tips
        </a>
    </string>
</resources>
```

resources



References

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- www.nhlbi.nih.gov
- www.healthline.com