

1. SIMPLE CALCULATOR (Buttons)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<TextView
android:id="@+id/textView"
android:layout_width="329dp"
android:layout_height="107dp"
android:gravity="center"
android:text="Simple Calculator"
android:textSize="36sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.068" />

<EditText
android:id="@+id/t1"
android:layout_width="255dp"
android:layout_height="69dp"
android:ems="10"
android:inputType="textPersonName"
android:hint="Enter num 1"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.371"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.265" />

<EditText
android:id="@+id/t2"
android:layout_width="254dp"
android:layout_height="68dp"
android:ems="10"
android:inputType="textPersonName"
android:hint="Enter num 2"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.375"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.422" />

<Button
android:id="@+id/addbtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="ADD"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.235"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.596" />

<Button
android:id="@+id/subbtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="SUB"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
```

```

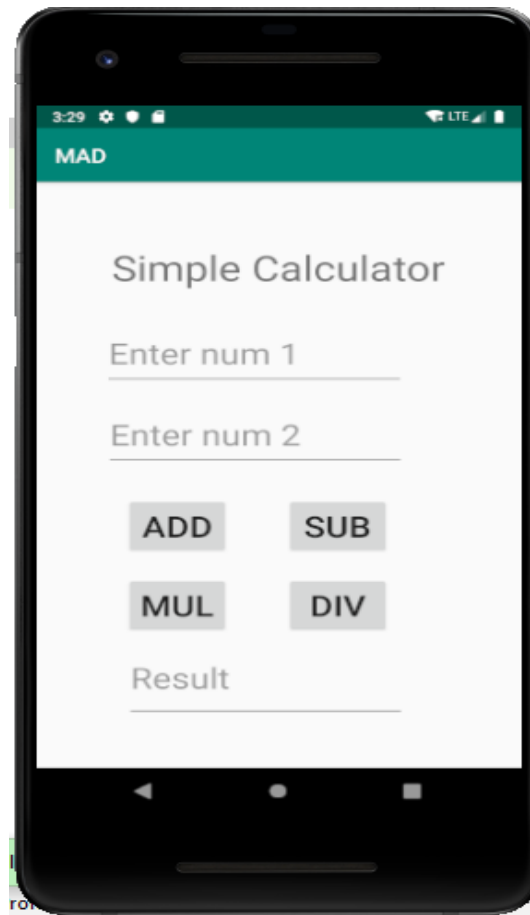
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.656"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.596" />

<Button
android:id="@+id/mulbtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="MUL"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.235"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.746" />

<Button
android:id="@+id/divbtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="DIV"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.656"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.746" />

<EditText
android:id="@+id/res"
android:layout_width="237dp"
android:layout_height="85dp"
android:ems="10"
android:inputType="textPersonName"
android:hint="Result"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.439"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.903" />
</androidx.constraintlayout.widget.ConstraintLayout>

```



```
package com.example.mad;
```

```
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;
```

```
public class MainActivity extends AppCompatActivity  
{ EditText t1,t2,res;  
  Button addbtn,subbtn,mulbtn,divbtn;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState)  
{ super.onCreate(savedInstanceState);  
  setContentView(R.layout.activity_main);
```

```
t1 = (EditText) findViewById(R.id.t1);  
t2 = (EditText) findViewById(R.id.t2);  
res = (EditText) findViewById(R.id.res);  
addbtn = (Button) findViewById(R.id.addbtn);  
subbtn = (Button) findViewById(R.id.subbtn);  
mulbtn = (Button) findViewById(R.id.mulbtn);  
divbtn = (Button) findViewById(R.id.divbtn);
```

```
addbtn.setOnClickListener(new View.OnClickListener()
    { @Override
public void onClick(View v) {
    String v1 = t1.getText().toString();
    String v2 = t2.getText().toString();
int a = Integer.parseInt(v1);
int b = Integer.parseInt(v2);
int c = a + b;
res.setText("Result =" + c); }
});
```

```
subbtn.setOnClickListener(new View.OnClickListener()
    { @Override
public void onClick(View v) {
    String v1 = t1.getText().toString();
    String v2 = t2.getText().toString();
int a = Integer.parseInt(v1);
int b = Integer.parseInt(v2);
int c = a - b;
res.setText("Result =" + c); }
});
```

```
mulbtn.setOnClickListener(new View.OnClickListener()
    { @Override
public void onClick(View v) {
    String v1 = t1.getText().toString();
    String v2 = t2.getText().toString();
int a = Integer.parseInt(v1);
int b = Integer.parseInt(v2);
int c = a * b;
res.setText("Result =" + c); }
});
```

```
divbtn.setOnClickListener(new View.OnClickListener()
    { @Override
public void onClick(View v) {
    String v1 = t1.getText().toString();
    String v2 = t2.getText().toString();
int a = Integer.parseInt(v1);
int b = Integer.parseInt(v2);
int c = a / b;
res.setText("Result =" + c); }
});
```

```
}
}
```

2. Business Application

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/t1"
        android:layout_width="329dp"
        android:layout_height="107dp"
        android:gravity="center"
        android:text="BOOK HUB"
        android:textSize="36sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.068" />

    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="253dp"
        android:layout_height="188dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.436"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.331"
        app:srcCompat="@drawable/a" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="195dp"
        android:layout_height="104dp"
        android:text="DESCRIPTION: -----"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.134"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.649" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="174dp"
        android:layout_height="66dp"
        android:text="CONTACT NO:- 123456789"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.797"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.79" />

    <TextView
        android:id="@+id/t2"
        android:layout_width="282dp"
        android:layout_height="52dp"
        android:text="Check website ....."
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```

app:layout_constraintHorizontal_bias="0.751"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.895" />

</androidx.constraintlayout.widget.ConstraintLayout>

```



```

package com.example.user.mad;

```

```

import android.content.Intent;
import android.net.Uri;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.*;

public class MainActivity extends AppCompatActivity
{
    TextView t1;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_hello_world);

        t1=(TextView)findViewById(R.id.t1);

        tv1.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v) {

```

```

String url="https://www.bookhub.com";
        Intent i=new Intent(Intent.ACTION_VIEW,Uri.parse(url));
        startActivity(i);
    }
});
}
}

```

3. UNIT CONVERTER (Radio Buttons)

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="329dp"
        android:layout_height="107dp"
        android:gravity="center"
        android:text="UNIT CONVERTER"
        android:textColor="#0A0A0A"
        android:textSize="36sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.621"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.076" />

    <EditText
        android:id="@+id/t1"
        android:layout_width="292dp"
        android:layout_height="56dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Enter value"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.588"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.254" />

    <EditText
        android:id="@+id/res"
        android:layout_width="280dp"
        android:layout_height="60dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Result"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.608"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.36" />

```

```

<RadioGroup
    android:id="@+id/radioGroup"
    android:layout_width="295dp"
    android:layout_height="299dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.603"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.773">

    <RadioButton
        android:id="@+id/r1"
        android:layout_width="match_parent"
        android:layout_height="83dp"
        android:text="cm to m"
        android:textSize="30sp" />

    <RadioButton
        android:id="@+id/r2"
        android:layout_width="match_parent"
        android:layout_height="74dp"
        android:text="m to cm"
        android:textSize="30sp" />

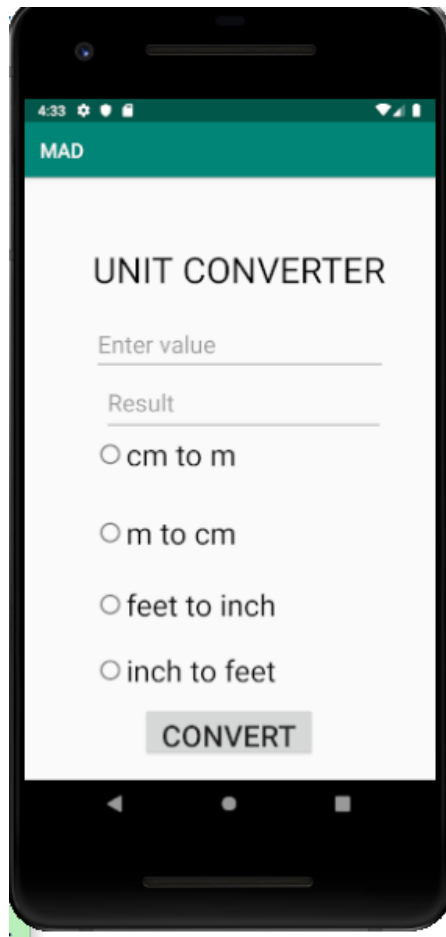
    <RadioButton
        android:id="@+id/r3"
        android:layout_width="match_parent"
        android:layout_height="70dp"
        android:text="feet to inch"
        android:textSize="30sp" />

    <RadioButton
        android:id="@+id/r4"
        android:layout_width="match_parent"
        android:layout_height="62dp"
        android:text="inch to feet"
        android:textSize="30sp" />
</RadioGroup>

<Button
    android:id="@+id/btn"
    android:layout_width="173dp"
    android:layout_height="52dp"
    android:text="CONVERT"
    android:textSize="30sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.959" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

```
package com.example.mad;
```

```
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.RadioButton;  
import android.widget.Toast;
```

```
public class MainActivity extends AppCompatActivity  
{ EditText t1,res;  
  RadioButton r1,r2,r3,r4;  
  Button btn;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState)  
{ super.onCreate(savedInstanceState);  
  setContentView(R.layout.activity_main);
```

```
t1=(EditText)findViewById(R.id.t1);  
res=(EditText)findViewById(R.id.res);  
r1=(RadioButton)findViewById(R.id.r1);
```

```

r2=(RadioButton)findViewById(R.id.r2);
r3=(RadioButton)findViewById(R.id.r3);
r4=(RadioButton)findViewById(R.id.r4);
btn=(Button)findViewById(R.id.btn);

btn.setOnClickListener(new View.OnClickListener()
    { @Override
public void onClick(View v)
    { String a=t1.getText().toString();
float aa=Float.parseFloat(a);
float c;
if(r1.isChecked())
    { c=aa/100;
res.setText("Result="+c);
    }
else if(r2.isChecked())
    { c=aa*100;
res.setText("Result="+c);
    }
else if(r3.isChecked())
    { c=aa*12;
res.setText("Result="+c);
    }
else if(r4.isChecked())
    { c=aa/12;
res.setText("Result="+c);
    }
else {
        Toast.makeText(MainActivity.this, "Choose any one radio button",
        Toast.LENGTH_SHORT).show();
    }
    }
    });
    }
}

```

4. CURRENCY CONVERTER (Spinner)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="421dp"
        android:layout_height="106dp"
        android:gravity="center"
        android:text="CURRENCY CONVERTER"
        android:textColor="#0A0A0A"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.078" />

    <EditText
        android:id="@+id/t1"
        android:layout_width="292dp"
        android:layout_height="56dp"
        android:ems="10"
        android:hint="Enter value"
        android:inputType="textPersonName"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.588"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.28" />

    <EditText
        android:id="@+id/res"
        android:layout_width="280dp"
        android:layout_height="60dp"
        android:ems="10"
        android:hint="Result"
        android:inputType="textPersonName"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.625"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.396" />

    <Button
        android:id="@+id/btn"
        android:layout_width="173dp"
        android:layout_height="52dp"
        android:text="CONVERT"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.777" />

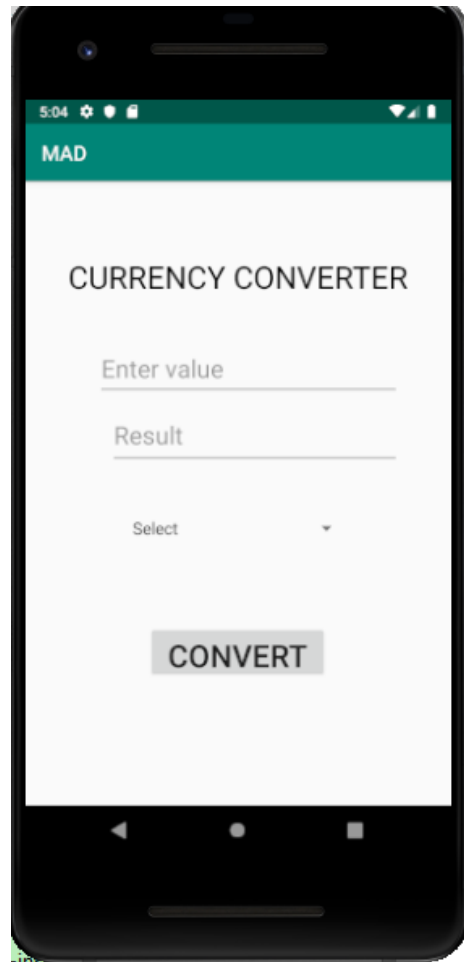
    <Spinner
        android:id="@+id/s1"
        android:layout_width="219dp"
        android:layout_height="102dp"
        android:entries="@array/app_name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent">
```

```

app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.567" />

</androidx.constraintlayout.widget.ConstraintLayout>

```



```

package com.example.mad;

```

```

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.Spinner;
import android.widget.Toast;

```

```

public class MainActivity extends AppCompatActivity
{
    EditText t1,res;
    Spinner s1;
    Button btn;

```

```

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

```

```

t1=(EditText)findViewById(R.id.t1);
res=(EditText)findViewById(R.id.res);
s1=(Spinner)findViewById(R.id.s1);
btn=(Button)findViewById(R.id.btn);

btn.setOnClickListener(new View.OnClickListener()
    { @Override
public void onClick(View v)
    { String v1=t1.getText().toString();
int a=Integer.parseInt(v1);
int x=s1.getSelectedItemPosition();
double num1=0;
if(x==1)
        { num1=a/71.99;
res.setText("Result="+num1);
        }

else if(x==2)
        { num1=a*71.99;
res.setText("Result="+num1);
        }

else if(x==3)
        { num1=a/0.68;
res.setText("Result="+num1);
        }

else if(x==4)
        { num1=a*0.68;
res.setText("Result="+num1);
        }

else
{ Toast.makeText(MainActivity.this, "Choose any", Toast.LENGTH_SHORT).show(); }

    }
});
}
}

```

res->values->string.xml

```

<resources>
<string name="app_name"> MAD </string>
<string-array name="app_name">
<item>Select</item>

```

```

<item>Rupee to Dollor</item>
<item>Dollor to Rupee</item>
<item>Rupee to Yen</item>
<item>yen to Rupee</item>
</string-array>
</resources>

```

5. TOURIST SPOT (Implicit Intents)

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="188dp"
        android:layout_height="55dp"
        android:gravity="center"
        android:text="INDIA"
        android:textColor="#0A0A0A"
        android:textSize="30sp"
        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="0.023" />

    <ImageView
        android:id="@+id/ig1"
        android:layout_width="166dp"

```

```

    android:layout_height="110dp"
    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="0.186"
    app:srcCompat="@drawable/ig1" />

<ImageView
    android:id="@+id/ig3"
    android:layout_width="167dp"
    android:layout_height="98dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.495"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.434"
    app:srcCompat="@drawable/ig2" />

<ImageView
    android:id="@+id/ig4"
    android:layout_width="179dp"
    android:layout_height="123dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.525"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.713"
    app:srcCompat="@drawable/ig3" />

</androidx.constraintlayout.widget.ConstraintLayout>

```



```
package com.example.mad;
```

```

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.Toast;

```

```
import androidx.appcompat.app.AppCompatActivity;
```

```

public class MainActivity extends AppCompatActivity
{
    ImageView ig1,ig2,ig3;
    @Override

```

```

    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

```

```

    ig1=(ImageView) findViewById(R.id.ig1);
    ig2=(ImageView) findViewById(R.id.ig2);
    ig3=(ImageView) findViewById(R.id.ig3);

```

```

    ig1.setOnClickListener(new View.OnClickListener()
    {
        @Override
        public void onClick(View v) {
            Toast.makeText(MainActivity.this, "Agra UP", Toast.LENGTH_SHORT).show();
        }
    });

```

```

        String url="https://en.wikipedia.org/agra";
        Intent i1=new Intent(Intent.ACTION_VIEW, Uri.parse(url));
        startActivity(i1);
    }
});

ig2.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v) {
        Toast.makeText(MainActivity.this,"Gateway of India", Toast.LENGTH_SHORT).show();
        String url="https://en.wikipedia.org/wiki/gateway_of_india";
        Intent i2=new Intent(Intent.ACTION_VIEW, Uri.parse(url));
        startActivity(i2);
    }
});

ig3.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v) {
        Toast.makeText(MainActivity.this, "charminar", Toast.LENGTH_SHORT).show();
        String url=" https://en.wikipedia.org/wiki/charminar";
        Intent i3=new Intent(Intent.ACTION_VIEW, Uri.parse(url));
        startActivity(i3);
    }
});
}
}

```

6. Music in Background

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/btnStart"
        android:layout_width="351dp"
        android:layout_height="76dp"
        android:text="Start Service"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.65"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.337" />

    <Button
        android:id="@+id/btnStop"
        android:layout_width="333dp"
        android:layout_height="86dp"
        android:text="Stop Service"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.615"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.572" />
</androidx.constraintlayout.widget.ConstraintLayout>

```




```
package com.example.mad;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;
import com.example.mad.MediaService;
import com.example.mad.R;

public class MainActivity extends AppCompatActivity implements View.OnClickListener
{
    private Button bStart;
    private Button bStop;

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

        bStart = (Button) findViewById(R.id.btnStart);
        bStop = (Button) findViewById(R.id.btnStop);

        bStart.setOnClickListener(this);
        bStop.setOnClickListener(this);
    }

    @Override
    public void onClick(View view)
    {
        if (view == bStart)
        {
            startService(new Intent(this, MediaService.class));
        }

        else if (view == bStop)
        {
            stopService(new Intent(this, MediaService.class));
        }
    }
}
```

Create a new Empty Activity – MediaService

```
package com.example.mad;

import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.provider.Settings;
import androidx.annotation.Nullable;

public class MediaService extends Service
{
    private MediaPlayer player;
    @Nullable
    @Override
    public IBinder onBind(Intent intent)
    { return null; }

    @Override
    public int onStartCommand(Intent intent, int flags, int startId)
    { //getting systems default ringtone
        player = MediaPlayer.create(this, Settings.System.DEFAULT_RINGTONE_URI);
        // player = MediaPlayer.create(this,R.raw.song3);
        player.setLooping(true);
        //staring the player
        player.start();
        //start sticky means service will be explicitly started and stopped
        return START_STICKY;
    }

    @Override
    public void onDestroy()
    { super.onDestroy();
        //stopping the player when service is destroyed
        player.stop();
    }

}
```

in Manifest folder

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.mad">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MediaService"></activity>
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <service android:name=".MediaService" />
    </application>

</manifest>
```

Note : Everything will come automatically, except `<service android:name=".MediaService" />`

Check and Add this line

7. Expense Manager (Files)

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<TextView
android:id="@+id/textView"
android:layout_width="316dp"
android:layout_height="70dp"
android:text="Expense Manager"
android:textSize="36sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.494"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.054" />

<TextView
android:id="@+id/textView2"
android:layout_width="142dp"
android:layout_height="63dp"
android:text="Category"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.107"
```

```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.232" />

<TextView
android:id="@+id/textView3"
android:layout_width="142dp"
android:layout_height="58dp"
android:text="price"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.107"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.395" />

<EditText
android:id="@+id/et_cat"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.919"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.24" />

<EditText
android:id="@+id/et_price"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.919"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.387" />

<Button
android:layout_width="162dp"
android:layout_height="93dp"
android:text="SAVE"
android:onClick="save"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.116"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.572" />

<Button
android:id="@+id/button2"
android:layout_width="166dp"
android:layout_height="91dp"
android:text="LOAD"
android:onClick="load"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.934"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.57" />

<TextView
android:id="@+id/tv_output"
android:layout_width="186dp"
android:layout_height="79dp"
android:hint="RESULT"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"

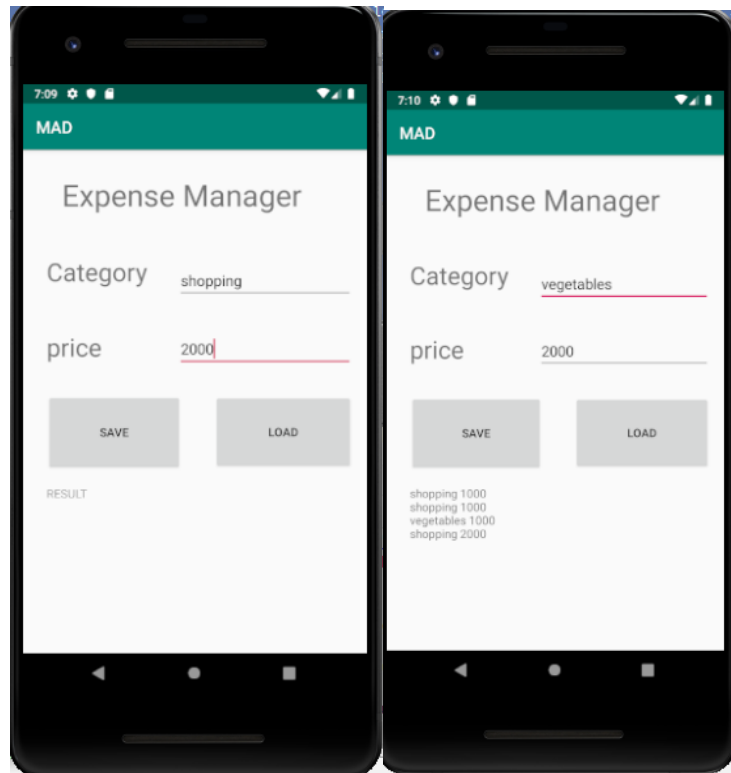
```

```

app:layout_constraintHorizontal_bias="0.128"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.766" />

</androidx.constraintlayout.widget.ConstraintLayout>

```



```

package com.example.mad;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import java.io.BufferedReader;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.InputStreamReader;

public class MainActivity extends AppCompatActivity
{
    String s1, s2;
    EditText et1, et2;
    TextView tv1;

    @Override

    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        et1=(EditText) findViewById(R.id.et_cat);
        et2=(EditText) findViewById(R.id.et_price);
        tv1=(TextView) findViewById(R.id.tv_output);
    }

    public void save (View view)
    {
        s1 = et1.getText().toString();
        s2 = s1+ " "+et2.getText().toString()+"\n";

        try
        { FileOutputStream fos = openFileOutput("file1.txt", MODE_APPEND);
          fos.write(s2.getBytes());
        }
        catch (FileNotFoundException e)

```

```

        { e.printStackTrace(); }

    catch (Exception e)
    { e.printStackTrace(); }
}

public void load (View v)
{
    try
    {
        FileInputStream fis = openFileInput("file1.txt");
        InputStreamReader isr = new InputStreamReader(fis);
        BufferedReader br = new BufferedReader(isr);
        StringBuilder sb = new StringBuilder();
        String text;
        while ((text=br.readLine())!= null)
        {
            sb.append(text);
            sb.append("\n");
        }

        tv1.setText (sb.toString());
    }
    catch (FileNotFoundException e)
    { e.printStackTrace(); }

    catch (Exception e)
    { e.printStackTrace(); }
}
}

```

NOTE: here onclick of button is registered in XML Code

8. Health Monitoring (Database)

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="316dp"
        android:layout_height="70dp"
        android:text="Health Monitor"
        android:textSize="36sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.494"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.083" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="142dp"
        android:layout_height="63dp"
        android:text="Name"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.107"

```

```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.232" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="142dp"
    android:layout_height="58dp"
    android:text="Age"
    android:textSize="30sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.107"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.343" />

<EditText
    android:id="@+id/et_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.919"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.24" />

<EditText
    android:id="@+id/et_age"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.964"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.355" />

<TextView
    android:id="@+id/textView5"
    android:layout_width="134dp"
    android:layout_height="41dp"
    android:text="HB Level"
    android:textSize="30sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.104"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.444" />

<TextView
    android:id="@+id/textView6"
    android:layout_width="128dp"
    android:layout_height="86dp"
    android:text="Blood Sugar"
    android:textSize="30sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.109"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.561" />

<EditText
    android:id="@+id/et_hb"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"

```

```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.919"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.441" />

<EditText
    android:id="@+id/et_sugar"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.919"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.571" />

<Button
    android:layout_width="142dp"
    android:layout_height="53dp"
    android:onClick="insert"
    android:text="INSERT"
    android:textSize="18sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.064"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.68" />

<Button
    android:id="@+id/button2"
    android:layout_width="152dp"
    android:layout_height="50dp"
    android:onClick="report"
    android:text="REPORT"
    android:textSize="18sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.877"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.678" />

<TextView
    android:id="@+id/tv_report"
    android:layout_width="304dp"
    android:layout_height="138dp"
    android:hint="RESULT"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.439"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.919" />
</androidx.constraintlayout.widget.ConstraintLayout>

```




```
package com.example.mad;

import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity
{
    DatabaseHelper db;
    EditText name;
    EditText age;
    EditText hb;
    EditText sugar;
    TextView tv;

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

        db = new DatabaseHelper(this);
        name = (EditText) findViewById(R.id.et_name);
        age = (EditText) findViewById(R.id.et_age);
        hb = (EditText) findViewById(R.id.et_hb);
        sugar = (EditText) findViewById(R.id.et_sugar);
        tv= (TextView) findViewById(R.id.tv_report);
    }

    public void insert (View view)
    {
        boolean status = db.insert(name.getText().toString(),
            Integer.parseInt(age.getText().toString()),
            Integer.parseInt(hb.getText().toString()),
            Integer.parseInt(sugar.getText().toString()));
    }

    public void report(View view)
    {
        Cursor c = db.select();
        if (c.getCount() ==0)
            return;
        StringBuffer buf = new StringBuffer();
        while (c.moveToNext())
        {
            buf.append ("Name: "+c.getString(1));
            buf.append (" Age: "+c.getString(2));
            buf.append (" Hemoglobin: "+c.getString(3));
            buf.append (" Sugar: "+c.getString(4));
            buf.append("\n");
        }
    }
}
```

```

    }
    tv.setText(buf);
}
/*public void cleartext (View view)
{
    name.setText("");
    age.setText("");
    hb.setText("");
    sugar.setText("");
}*/
}

```

Create new empty activity – DatabaseHelper

```

package com.example.mad;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class DatabaseHelper extends SQLiteOpenHelper
{
    DatabaseHelper (Context context)
    {
        super(context, "Health.db", null, 1);
    }

    @Override
    public void onCreate (SQLiteDatabase sqLiteDatabase)
    {
        sqLiteDatabase.execSQL("CREATE TABLE LAB ( PATID integer PRIMARY KEY AUTOINCREMENT, PANAME TEXT, AGE INTEGER, HM INTEGER, SUGAR INTEGER );");
    }

    @Override
    public void onUpgrade (SQLiteDatabase sqLiteDatabase, int i, int i1)
    {
        sqLiteDatabase.execSQL("DROP TABLE IF EXISTS LAB ");
        onCreate(sqLiteDatabase);
    }

    public boolean insert (String name, int age, int hb, int sug)
    {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues cv = new ContentValues();
        cv.put("PANAME", name);
        cv.put("AGE", age);
        cv.put("HM", hb);
        cv.put("SUGAR", sug);
        long status = db.insert("LAB", null, cv);
        if (status == -1)
            return false;
        else
            return true;
    }

    public Cursor select()
    {
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor cr = db.rawQuery("SELECT * FROM LAB", null);
        return cr;
    }
}

```

9. SMS

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="93dp"
        android:layout_height="55dp"
        android:text="SMS"
        android:textSize="36sp"

```

```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.494"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.083" />

<EditText
android:id="@+id/msg"
android:layout_width="345dp"
android:layout_height="59dp"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.712"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.633" />

<Button
android:id="@+id/send"
android:layout_width="284dp"
android:layout_height="112dp"
android:onClick="report"
android:text="Send Message"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.496"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.862" />

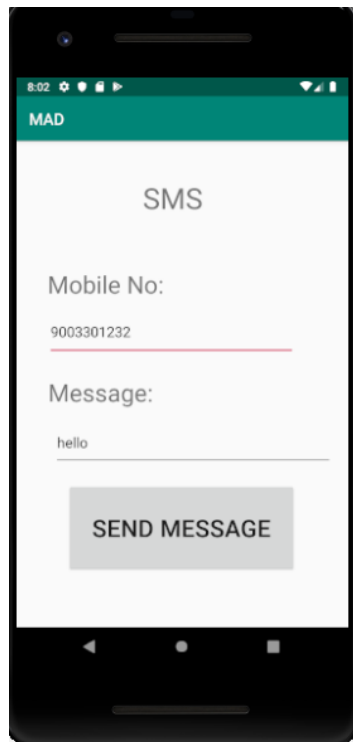
<TextView
android:id="@+id/textView7"
android:layout_width="159dp"
android:layout_height="43dp"
android:text="Mobile No:"
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.156"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.28" />

<TextView
android:id="@+id/textView8"
android:layout_width="147dp"
android:layout_height="49dp"
android:text="Message: "
android:textSize="30sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.152"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.526" />

<EditText
android:id="@+id/mb"
android:layout_width="307dp"
android:layout_height="61dp"
android:ems="10"
android:inputType="phone"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.375"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.38" />

</androidx.constraintlayout.widget.ConstraintLayout>

```



```
package com.example.mad;

import android.Manifest;
import android.app.Activity;
import android.app.PendingIntent;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.content.IntentFilter;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

public class MainActivity extends AppCompatActivity
{
    EditText etPhone, etMessage;
    Button btnSendSMS;
    PendingIntent sentPI, deliveredPI;

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

        etPhone = (EditText) findViewById(R.id.mb);
        etMessage = (EditText) findViewById(R.id.msg);
        btnSendSMS = (Button) findViewById(R.id.send);

        btnSendSMS.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v)
            {
                String message = etMessage.getText().toString();
                String telNr = etPhone.getText().toString();

                if(telNr.length()==10)
                {
                    if (ContextCompat.checkSelfPermission(MainActivity.this,
                        Manifest.permission.SEND_SMS) != PackageManager.PERMISSION_GRANTED)
                    {
                        ActivityCompat.requestPermissions(MainActivity.this, new
                            String[]{Manifest.permission.SEND_SMS}, 1);
                        Toast.makeText(getApplicationContext(), "SMS not sent!",
                            Toast.LENGTH_SHORT).show();
                    }
                }
            }
        });
    }
}
```

```

    }

else {
    SmsManager sms = SmsManager.getDefault();
    sms.sendTextMessage(telNr, null, message, sentPI, deliveredPI);
    Toast.makeText(getApplicationContext(), "SMS sent successfully!",
        Toast.LENGTH_SHORT).show();
    }

}

else
{
    Toast.makeText(getApplicationContext(), "SMS not sent !", Toast.LENGTH_SHORT).show();
    Toast.makeText(getApplicationContext(), "Enter 10 digit number !",
        Toast.LENGTH_SHORT).show();
    }
}

});
}
}
}

```

In manifest

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.mad">

    <uses-permission android:name="android.permission.SEND_SMS" />

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>

```

Note: everything will be there automatically, check permission and add

```
<uses-permission android:name="android.permission.SEND_SMS"/>
```

10. Map

Step 1:- create a Google Map Activity (file -> new project -> google map activity)

Step 2:- in google_map_api.xml, click on first link

(https://console.developers.google.com/flows/enableapi?apiid=maps_android_backend&keyType=CLIENT_SIDE_ANDROID&r=E2:B7:D0:A1:8B:ED:EE:80:77:F8:A5:BC:13:B8:26:71:AD:D5:D9:DB%3Bcom.example.mymap)

Or copy paste in browser

Step 3:- click on continue -> create API key -> copy the api key created

Step 4:- paste the key in google_map_api.xml

```
get-key
```

```
google_maps_key"
```

```
<string translatable="false">YOUR_KEY_HERE</string>
```

Step 5:- Google, New Horizon College Latitude and Longitude

Step 6:- paste the latitude and longitude in MapsActivity.java

```
// Add a marker in Sydney and move the camera
LatLng sydney = new LatLng( 12.933453, 77.691381);
mMap.addMarker(new MarkerOptions().position(sydney).title
mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney));
```

Step 7:- save, build and run

