```
start stop counter:
package com.example.counter;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.os.Handler;
import android.os.Looper;
import android.os.Message;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity implements View.OnClickListener {
  Button buttonstart, buttonstop;
  TextView counterValue;
  public int counter=0;
  public boolean running=false;
  @SuppressLint("MissingInflatedId")
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    buttonstart=(Button)findViewById(R.id.start);
    buttonstart.setOnClickListener(this);
    buttonstop=(Button)findViewById(R.id.stop);
    buttonstop.setOnClickListener(this);
```

```
counterValue=(TextView)findViewById(R.id.Value);
}
@Override
public void onClick(View v) {
  if(v.equals(buttonstart)){
    counterStart();
  }
  else if(v.equals(buttonstop)){
    counterStop();
  }
}
private void counterStop() {
  this.running=false;
  buttonstart.setEnabled(true);
  buttonstop.setEnabled(false);
}
private void counterStart() {
  counter=0;
  running=true;
  System.out.println("strated->"+Thread.currentThread().getName());
  new MyCounter().start();
  buttonstart.setEnabled(false);
  buttonstop.setEnabled(true);
}
Handler handler = new Handler(Looper.getMainLooper())
```

```
{
    public void handleMessage(@NonNull Message mes){
      counterValue.setText(String.valueOf(mes.what));
    }
  };
  class MyCounter extends Thread{
    public void run()
    {
      System.out.println("My counter->"+Thread.currentThread().getName());
      while(running){
        counter++;
        handler.sendEmptyMessage(counter);
        try {
          Thread.sleep(1000);
        }catch (Exception e){}
      }
    }
  }
}
text to speech:
xml:
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
```

```
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">
```

## <EditText

```
android:id="@+id/editTextTextMultiLine"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentTop="true"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginTop="108dp"
android:layout_marginEnd="105dp"
android:layout_marginBottom="443dp"
android:ems="10"
android:gravity="start|top"
android:inputType="textMultiLine"
android:lines="4"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

## <Button

```
android:id="@+id/button"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_alignParentEnd="true"

android:layout_alignParentBottom="true"
```

```
android:layout_marginTop="87dp"
    android:layout_marginEnd="162dp"
    android:layout_marginBottom="303dp"
    android:text="Button"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextMultiLine" />
</RelativeLayout>
java:
package com.example.texttospeech;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.speech.tts.TextToSpeech;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import java.util.Locale;
public class MainActivity extends AppCompatActivity {
  TextToSpeech tts;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    EditText e1= findViewById(R.id.editTextTextMultiLine);
```

```
Button b1=findViewById(R.id.button);
    b1.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        tts= new TextToSpeech(getApplicationContext(), new TextToSpeech.OnInitListener() {
          @Override
          public void onInit(int i) {
             if(i==TextToSpeech.SUCCESS){
               tts.setLanguage(Locale.US);
               tts.setSpeechRate(1.0f);
               tts.speak(e1.getText().toString(),TextToSpeech.QUEUE_ADD,null);
             }
          }
        });
      }
    });
 }
calculator:
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=".MainActivity">
<TextView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_alignParentEnd="true"
  android:layout_alignParentBottom="true"
  android:layout_marginEnd="179dp"
  android:layout_marginBottom="652dp"
  android:text="SimpleCalci"
  android:textSize="24sp"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintLeft_toLeftOf="parent"
  app:layout_constraintRight_toRightOf="parent"
  app:layout_constraintTop_toTopOf="parent" />
<EditText
  android:id="@+id/editText1"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_alignParentEnd="true"
  android:layout_alignParentBottom="true"
  android:layout_marginEnd="138dp"
  android:layout_marginBottom="540dp"
  android:ems="10"
  android:hint="Enter Number-1"
  android:inputType="textPersonName"
  android:text=""/>
<EditText
  android:id="@+id/editText2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
```

```
android:layout_alignParentEnd="true"
  android:layout_alignParentBottom="true"
  android:layout_marginEnd="135dp"
  android:hint="Enter Number-2"
  android:layout_marginBottom="469dp"
  android:ems="10"
  android:inputType="textPersonName"
  android:text=""/>
<TextView
  android:id="@+id/textView1"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_alignParentEnd="true"
  android:layout_alignParentBottom="true"
  android:layout_marginEnd="233dp"
  android:layout_marginBottom="374dp"
  android:text="0"
  android:textSize="30sp" />
<Button
  android:id="@+id/button"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_alignParentEnd="true"
  android:layout_alignParentBottom="true"
  android:layout_marginEnd="103dp"
  android:onClick="div"
  android:layout_marginBottom="208dp"
  android:text="DIV" />
<Button
  android:id="@+id/button2"
  android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="291dp"
    android:onClick="mul"
    android:layout_marginBottom="208dp"
    android:text="MUL" />
  <Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="101dp"
    android:layout_marginBottom="324dp"
    android:onClick="sub"
    android:text="SUB" />
  <Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="293dp"
    android:layout_marginBottom="322dp"
    android:onClick="add"
    android:text="ADD" />
</RelativeLayout>
java:
package com.example.calculator;
```

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
  EditText e1, e2;
  TextView tv1;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    e1 = findViewById(R.id.editText1);
    e2 = findViewById(R.id.editText2);
    tv1 = findViewById(R.id.textView1);
  }
  public void add(View V){
    int a1 = Integer.parseInt(e1.getText().toString());
    int a2 = Integer.parseInt(e2.getText().toString());
    int result = a1+a2;
    tv1.setText(""+result);
  }
  public void sub(View V){
    int a1 = Integer.parseInt(e1.getText().toString());
    int a2 = Integer.parseInt(e2.getText().toString());
    int result = a1-a2;
    tv1.setText(""+result);
  }
  public void mul(View V){
    int a1 = Integer.parseInt(e1.getText().toString());
    int a2 = Integer.parseInt(e2.getText().toString());
```

```
int result = a1*a2;
    tv1.setText(""+result);
  }
  public void div(View V){
    float a1 = Integer.parseInt(e1.getText().toString());
    float a2 = Integer.parseInt(e2.getText().toString());
    float result = a1/a2;
    tv1.setText(""+result);
  }
}
id card:
xml:
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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="wrap_content"
    android:layout_height="wrap_content"
    android:text="DR A V BALIGA PU COLLEGE OF ARTS AND SCIENCE"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.493"
```

```
app:layout_constraintStart_toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent"
  app:layout_constraintVertical_bias="0.299" />
<TextView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING"
  android:textSize="12sp"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent"
  app:layout_constraintStart_toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent"
  app:layout_constraintVertical_bias="0.344" />
<ImageView
  android:id="@+id/imageView"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_marginStart="112dp"
  android:layout_marginTop="48dp"
  app:layout_constraintStart_toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent"
  app:srcCompat="@drawable/android_studio_img"/>
<TextView
  android:id="@+id/textView2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_marginEnd="108dp"
  android:layout_marginBottom="220dp"
```

```
android:text="NAME: AMRUTA SHINGANKULI"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent" />
<TextView
  android:id="@+id/textView2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_marginEnd="196dp"
  android:layout_marginBottom="140dp"
  android:text="SEMESTER: 5TH"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent" />
<TextView
  android:id="@+id/textView2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_marginEnd="188dp"
  android:layout_marginBottom="100dp"
  android:text="USN: 4SF21Cl007"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent" />
<TextView
  android:id="@+id/textView2"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_marginEnd="172dp"
  android:layout_marginBottom="180dp"
  android:text="PHONE: 9071312336"
```

```
app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent" />
  <View
    android:id="@+id/divider"
    android:layout_width="409dp"
    android:layout_height="10dp"
    android:layout_marginBottom="436dp"
    android:background="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    tools:layout_editor_absoluteX="1dp" />
  <ImageView
    android:id="@+id/imageView4"
    android:layout_width="158dp"
    android:layout_height="130dp"
    android:layout_marginEnd="156dp"
    android:layout_marginBottom="288dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:srcCompat="@drawable/android_studio_img3"/>
</androidx.constraintlayout.widget.ConstraintLayout>
java:
package com.example.student_id_card;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
```

```
public class MainActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
  }
}
counter:
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=".MainActivity">
  <TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="116dp"
    android:layout_marginBottom="605dp"
    android:text="Counter Application"
    android:textAlignment="center"
```

```
android:textColor="#1432DC"
  android:textSize="20sp"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent"
  app:layout_constraintHorizontal_bias="0.459"
  app:layout_constraintStart_toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent"
  app:layout_constraintVertical_bias="0.146" />
<TextView
  android:id="@+id/Value"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_marginStart="156dp"
  android:layout_marginTop="288dp"
  android:text="counter value"
  android:textAlignment="center"
  app:layout_constraintStart_toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent" />
<Button
  android:id="@+id/start"
  android:layout_width="107dp"
  android:layout_height="60dp"
  android:layout_alignParentEnd="true"
  android:layout_alignParentBottom="true"
  android:layout_marginTop="192dp"
  android:layout_marginEnd="144dp"
  android:layout_marginBottom="479dp"
  android:text="start"
  android:textAlignment="center"
```

```
app:layout_constraintTop_toTopOf="parent"
    tools:ignore="MissingConstraints"
    tools:layout_editor_absoluteX="156dp" />
  <Button
    android:id="@+id/stop"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="156dp"
    android:layout_marginTop="348dp"
    android:text="stop"
    android:textAlignment="center"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</RelativeLayout>
java:
package com.example.counter;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
  Button start, stop;
  TextView value;
  int i=1;
  Handler customHandler=new Handler();
  @Override
```

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    start=findViewById(R.id.start);
    stop=findViewById(R.id.stop);
    value=findViewById(R.id.Value);
    start.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        customHandler.postDelayed(updateTimerThread,0);
      }
    });
    stop.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        customHandler.removeCallbacks(updateTimerThread);
      }
    });
  }
  private final Runnable updateTimerThread=new Runnable() {
    @Override
    public void run() {
      value.setText(""+i);
      customHandler.postDelayed(this,1000);
      j++;
    }
  };
}
```

visiting card:

```
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=".MainActivity">
  <TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="contact: 907xxxxxxx"
    android:textSize="16sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout constraintHorizontal bias="0.157"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout constraintVertical bias="0.647" />
  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="owner name: Amruta Shingankuli"
    android:textSize="16sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.236"
```

```
app:layout_constraintStart_toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent"
  app:layout_constraintVertical_bias="0.564" />
<TextView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="address: padukeri post hegde, kumta"
  android:textSize="16sp"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent"
  app:layout_constraintHorizontal_bias="0.236"
  app:layout_constraintStart_toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent"
  app:layout_constraintVertical_bias="0.728" />
<TextView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="your pet's happy space"
  android:textSize="24sp"
  app:layout_constraintBottom_toBottomOf="parent"
  app:layout_constraintEnd_toEndOf="parent"
  app:layout_constraintHorizontal_bias="0.486"
  app:layout_constraintStart_toStartOf="parent"
  app:layout_constraintTop_toTopOf="parent"
  app:layout_constraintVertical_bias="0.825" />
<TextView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
```

```
android:text="Pet In"
  android:textSize="48sp"
  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="0.445" />
<ImageView
  android:id="@+id/imageView"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  app:layout_constraintEnd_toEndOf="parent"
  app:srcCompat="@drawable/logo"
  tools:layout_editor_absoluteY="1dp" />
<View
  android:id="@+id/view"
  android:layout_width="413dp"
  android:layout_height="732dp"
  android:background="#34D86868"
  tools:layout_editor_absoluteX="1dp"
  tools:layout_editor_absoluteY="2dp" />
<View
  android:id="@+id/view2"
  android:layout_width="414dp"
  android:layout_height="280dp"
  android:backgroundTint="#8BBBD1"
  tools:layout_editor_absoluteX="-3dp"
```

```
tools:layout_editor_absoluteY="91dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
java:
package com.example.visitingcard;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
  }
}
wallpaper:
java:
package com.example.wallpaper;
import android.annotation.SuppressLint;
import android.app.WallpaperManager;
import android.graphics.Bitmap;
import android.graphics.drawable.BitmapDrawable;
import android.graphics.drawable.Drawable;
import android.os.Bundle;
```

```
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;
import java.io.IOException;
import java.util.Timer;
import java.util.TimerTask;
public class MainActivity extends AppCompatActivity {
  Button changewallpaper;
  Timer mytimer;
  Drawable drawable;
  WallpaperManager wpm;
  int prev=1;
  @Override
  protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    mytimer = new Timer();
    wpm = WallpaperManager.getInstance(this);
    changewallpaper = findViewById(R.id.button); changewallpaper.setOnClickListener(view ->
        setWallpaper());
  }
  private void setWallpaper() {
    mytimer.schedule(new TimerTask() {
      @SuppressLint("UseCompatLoadingForDrawables")
      @Override
      public void run() {
        if(prev==1) {
          drawable = getResources().getDrawable(R.drawable.android_studio_wp_img1);
          prev = 2;
        }
        else if(prev==2) {
          drawable = getResources().getDrawable(R.drawable.android_studio_wp_img2);
          prev=3;
```

```
}
        else if(prev==3) {
          drawable = getResources().getDrawable(R.drawable.android_studio_wp_img3);
          prev=4;
        }
        else if(prev==4) {
          drawable = getResources().getDrawable(R.drawable.android_studio_wp_img5);
          prev=1;
        }
        Bitmap wallpaper = ((BitmapDrawable)drawable).getBitmap();
        try {
          wpm.setBitmap(wallpaper);
        } catch (IOException e) {
          e.printStackTrace();
        }
      }
    },0,30000); } }
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=".MainActivity">
  <TextView
    android:layout_width="178dp"
```

```
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="123dp"
android:layout_marginBottom="420dp"
android:text="wallpaper changer"
android:textSize="20sp"
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="0.215" />
```

## <Button

```
android:id="@+id/button"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_alignParentEnd="true"

android:layout_alignParentBottom="true"

android:layout_marginEnd="129dp"

android:layout_marginBottom="341dp"

android:text="changewallpaper"/>
```

</RelativeLayout>