Program 1:

```
package com.example.labpgm1;

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);

 }
}
```

Program 2:

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

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

 EditText e1,e2;

 TextView tv;

 @Override

 protected void onCreate(Bundle savedInstanceState) {
```

```java
super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

e1 =(EditText)findViewById(R.id.editText1);

e2 = (EditText)findViewById(R.id.editText2);

tv= (TextView)findViewById(R.id.textView2);

}

public void add(View v)

{

int a1=Integer.parseInt(e1.getText().toString());

int a2= Integer.parseInt(e2.getText().toString());

int result=a1+a2;

tv.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;

tv.setText(""+result);

}

public void mul(View v)

{

int a1=Integer.parseInt(e1.getText().toString());

int a2= Integer.parseInt(e2.getText().toString());
```

```java
int result=a1*a2;

tv.setText(""+result);

}

public void div(View v)

{

int a1=Integer.parseInt(e1.getText().toString());

int a2= Integer.parseInt(e2.getText().toString());

int result=a1/a2;

tv.setText(""+result);

}

}
```

Program 4:

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

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.graphics.BitmapFactory;

import android.app.WallpaperManager;

import java.io.IOException;

import java.util.Random;

import java.util.Timer;

import java.util.TimerTask;

public class MainActivity extends AppCompatActivity
```

```java
{
Button b1;

boolean running;

int[] ls = new int[]{R.drawable.i1, R.drawable.i2,

R.drawable.i3,R.drawable.i4};

public void start(View v)

{

if (!running) {

new Timer().schedule(new Mytimer(), 0, 3000);

running = true;

}

}

@Override

protected void onCreate(Bundle savedInstanceState)

{

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

b1 = (Button) findViewById(R.id.button);

}
private class Mytimer extends TimerTask

{

@Override

public void run()

{
```

```
try
{
WallpaperManager wp =
WallpaperManager.getInstance(getBaseContext());
Random random = new Random();
wp.setBitmap(BitmapFactory.decodeResource(getResources(),
ls[random.nextInt(4)]));
}
catch (IOException e)
{
}
}
}
}
```

Program 5:

```
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 {
TextView txtCounter;
```

```java
Button btn_start,btn_stop; int count=0;

Handler customHandler=new Handler();

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

txtCounter= (TextView)findViewById(R.id.textView);

btn_start =(Button)findViewById(R.id.button);

btn_stop=(Button)findViewById(R.id.button2);

btn_start.setOnClickListener(new View.OnClickListener()

{

@Override

public void onClick(View v)

{ customHandler.postDelayed(updateTimerThread,0);

}

});

btn_stop.setOnClickListener(new View.OnClickListener()

{ @Override

public void onClick(View v)

{ customHandler.removeCallbacks(updateTimerThread);

}

}

);

}
```

```java
private final Runnable updateTimerThread =new Runnable()
{@Override
public void run()
{ txtCounter.setText(""+count);
customHandler.postDelayed(this,1000); count++;
}
};
}
```

Program 7:

```java
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 {
 EditText t;
 Button b;
 TextToSpeech ts;
 @Override
 protected void onCreate(Bundle savedInstanceState)
 {
```

```java
super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

t = findViewById(R.id.editTextText);

b = findViewById(R.id.button);

ts = new TextToSpeech(getApplicationContext(), new

TextToSpeech.OnInitListener()

{

@Override

public void onInit(int i)

{

if(i!=TextToSpeech.ERROR)

{

ts.setLanguage(Locale.UK);

}

}

});

b.setOnClickListener(new View.OnClickListener()

{

@Override

public void onClick(View v)

{

ts.speak(t.getText().toString(),TextToSpeech.QUEUE_FLUSH,null);

}

});
```

```
    }
}


```

Program 8:

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

import android.content.Intent;

import android.net.Uri;

import android.os.Bundle;

import android.provider.ContactsContract;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

public class MainActivity extends AppCompatActivity

{

EditText number;

Button clear, call, save;

@Override

protected void onCreate(Bundle savedInstanceState)

{

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

number = findViewById((R.id.input));

call = findViewById(R.id.callbtn);

save = findViewById(R.id.savebtn);
```

```java
clear = findViewById(R.id.clearbtn);

clear.setOnClickListener(new View.OnClickListener()

{

@Override

public void onClick(View v)

{

number.setText("");

}

});

call.setOnClickListener(new View.OnClickListener()

{

@Override

public void onClick(View v) {

String phno = number.getText().toString();

Intent intent = new Intent(Intent.ACTION_DIAL);

intent.setData(Uri.parse("tel:" + phno));

startActivity(intent);

}

});

save.setOnClickListener(new View.OnClickListener()

{

@Override

public void onClick(View v) {

String phno = number.getText().toString();
```

```java
 Intent intent = new Intent(Intent.ACTION_INSERT);

intent.setType(ContactsContract.Contacts.CONTENT_TYPE);

intent.putExtra(ContactsContract.Intents.Insert.PHONE, phno);

startActivity(intent);

 }

 });

 }

 public void inputNumber(View V)

 {

 Button btn=(Button) V;

 String dig=btn.getText().toString();

 String phnbr=number.getText().toString();

 number.setText(phnbr +dig);

 }

 }
```