Program 1

Create an application to design a Visiting Card. The Visiting card should have a company logo at the top right corner. The company name should be displayed in Capital letters, aligned to the center. Information like the name of the employee, job title, phone number, address, email, fax and the website address are to be displayed.

1. Create a New Android Project with Empty Activity.
2. Open activity_main.xml file from res layout folder.
3. Set all constraints to Constraint Layout and Text View.
4. Use View background property to draw the line
5. Add Image to drawable folder and reference the image in the layout using @drawable/<image_name>
6. Use android:layout_gravity/android:gravity properties to center the components.

Following is the content of the modified res/layout/activity_main.xml.

XML Code: activity_main.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/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="319dp"

        android:text="NCET"
        android:textAppearance="@style/TextAppearance.AppCompat.Body1"
        android:textSize="22sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.055" />
```

```
<ImageView

    android:id="@+id/imageView3"
    android:layout_width="170dp"
    android:layout_height="39dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="1.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.044"
    app:srcCompat="@drawable/ncet" />

<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="RACHANA"
    android:textAppearance="@style/TextAppearance.AppCompat.Body1"
    android:textSize="22sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.555"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.221" />

<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:fontFamily="sans-serif"
    android:text="Assistant Professor"
    android:textAppearance="@style/TextAppearance.AppCompat.Body2"
    android:textSize="22sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.583"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.316" />

<TextView
    android:id="@+id/textView6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="rachana@google.com"
```

```
    android:textAppearance="@style/TextAppearance.AppCompat.Body2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.575"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.456" />

  <TextView

    android:id="@+id/textView7"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="9998888888"
    android:textAppearance="@style/TextAppearance.AppCompat.Body2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.543"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.383" />

  <TextView

    android:id="@+id/textView8"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"

    android:includeFontPadding="true"
    android:text="Devanahalli, Bangalore"
    android:textAppearance="@style/TextAppearance.AppCompat.Body2"
    android:textSize="16sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.591"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.52" />


</androidx.constraintlayout.widget.ConstraintLayout>
```

JAVA Code: MainActivity.java

```
package com.example.program1;

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);
    }
}
```

OUTPUT

Program 2:

Develop an application using controls like Button and TextView, on click of Button display "Welcome to NCET" and on Click of Button 2 display "Welcome to CSE". Handle the two buttons in an Activity to demonstrate event handling using both Java and XML.

1. Create a New Android Project with EmptyActivity.
2. Open activity_main.xml file from res layout folder, check/add Constraint Layout as the root view.
3. Create Layout using Drag and Drop frame work.
4. OpenMainActivty.javafile,Overrideon Create() method and bring activity_main.xmlfile on screen using setContentView() and bring the view references using findViewById() method.
5. Add Listeners to Button ClickEvent:
6. Create a class which implements OnClickListenerinterface.
7. Override onClick() method of OnClickListenerInterface.
8. Register the button for click event by calling setOnClickListener() method of View class and pass the object of the class that implemented OnClickListenerInterface.
9. Create onClick attribute in XML and implement the method in Java.

XML Code: Activity_Main.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/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Event Handling"
        android:textColor="#FF5722"
        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="0.082" />
```

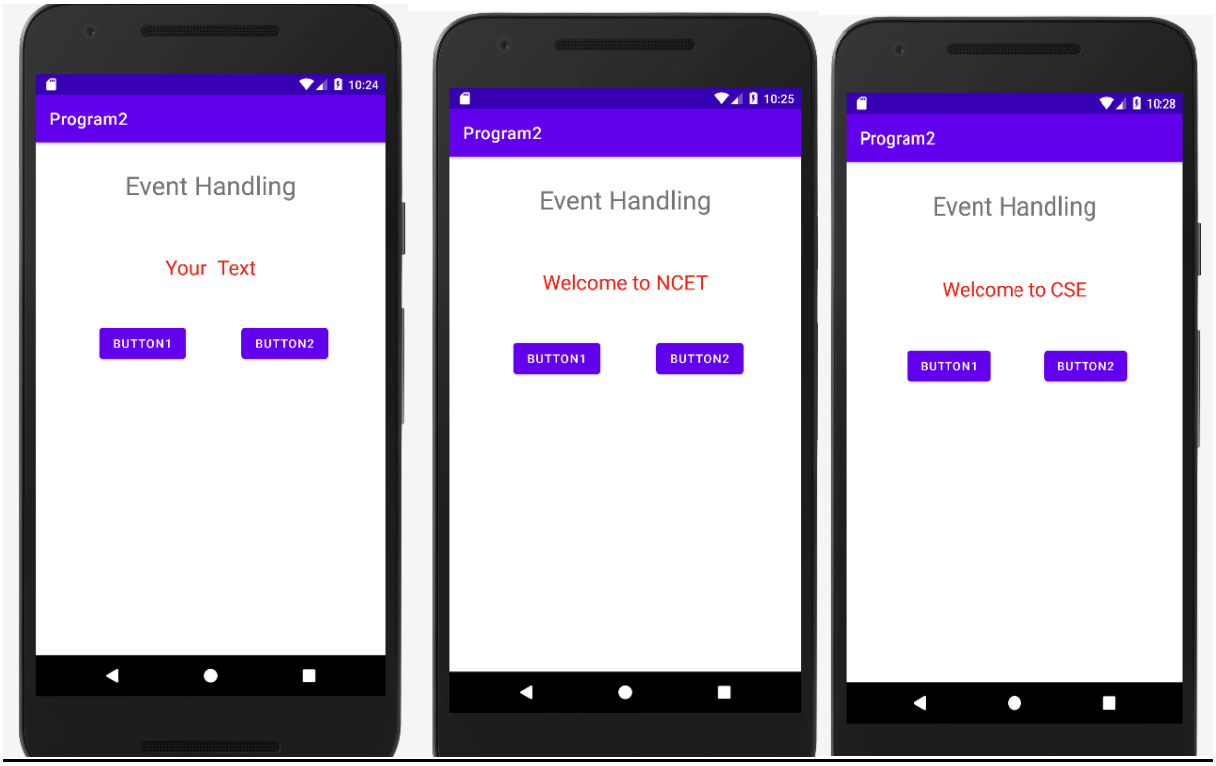
```
    <TextView
        android:id="@+id/t1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Your Text"
        android:textSize="30sp"
        android:textColor="#3F51B5"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.526"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.221" />

    <Button
        android:id="@+id/b1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.138"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.421" />

    <Button
        android:id="@+id/b2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button2"
        android:onClick="dosomething"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.87"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.421" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code: MainActivity.java

```
package com.example.aProgram2;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
```

```
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements View.OnClickListener
{
   TextView tv;
   Button bt;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      tv=(TextView) findViewById(R.id.t1);
      bt=(Button) findViewById(R.id.b1);
      bt.setOnClickListener(this);

   }

   @Override
   public void onClick(View view) {
      tv.setText("Welcome to NCET");
   }

   public void dosomething(View view) {
      tv.setText("Welcome to CSE");
   }
}
```

OUTPUT


10:24
Program2
Event Handling
Your Text
BUTTON1
BUTTON2
10:25
Program2
Event Handling
Welcome to NCET
BUTTON1
BUTTON2
10:28
Program2
Event Handling
Welcome to CSE
BUTTON1
BUTTON2

Program 3:

Create an application to demonstrate all Activity life cycle callback methods. Display Toast message When each method invokes.

1. Create a New Android Project with Empty Activity.
2. Override all Activity life cycle methods.
   onCreate(), onStart(), onResume(), onPause(), onStop, onRestart(), onDestroy()
3. Invoke Toast. makeText method to display Toast.
4. Use android:layout_gravity/android:gravity properties to center the components.

XML Code: activity_main.xml

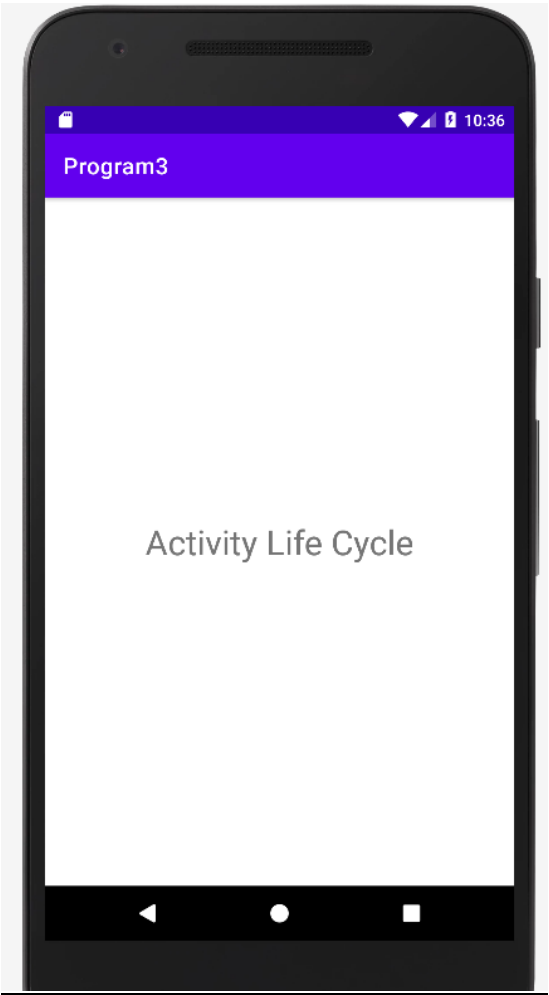
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
     xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Java code:MainActivity.java

```
package com.example.aProgram3;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override
```

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

    @Override
    protected void onStart() {
        super.onStart();
        Toast.makeText(this, "onstart", Toast.LENGTH_LONG).show();
    }

    @Override
    protected void onResume() {
        super.onResume();
        Toast.makeText(this, "onresume", Toast.LENGTH_LONG).show();
    }

    @Override
    protected void onPause() {
        super.onPause();
        Toast.makeText(this, "onpause", Toast.LENGTH_LONG).show();
    }

    @Override
    protected void onStop() {
        super.onStop();
        Toast.makeText(this, "onstop", Toast.LENGTH_LONG).show();
    }

    @Override
    protected void onRestart() {
        super.onRestart();
        Toast.makeText(this, "onrestart", Toast.LENGTH_LONG).show();
    }

    @Override
    protected void onDestroy() {
        super.onDestroy();
        Toast.makeText(this, "ondestroy", Toast.LENGTH_LONG).show();
    }
}
```

OUTPUT



Program 4:

Develop an android application with an Activity and accept data from the user in first Activity. On click of a Next button in first Activity transfer the data from first Activity to second Activity.

XML code: activity_main.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/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Explicit Intent"
        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="0.139" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="dosomething"
        android:text="Next"
        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="0.499" />

    <EditText
        android:id="@+id/edit"
        android:layout_width="380dp"
        android:layout_height="45dp"
        android:ems="10"
        android:hint="Enter your name"
```

```
    android:inputType="textPersonName"
    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="0.291" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Java code: MainActivity.java

```
package com.example.a6aexplicitintent;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
  EditText e;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      e=(EditText) findViewById(R.id.edit);
   }

   public void dosomething(View view) {
      Intent i1=new Intent(this,Second.class);
      i1.putExtra("user",e.getText().toString());
      startActivity(i1);
   }
}
```

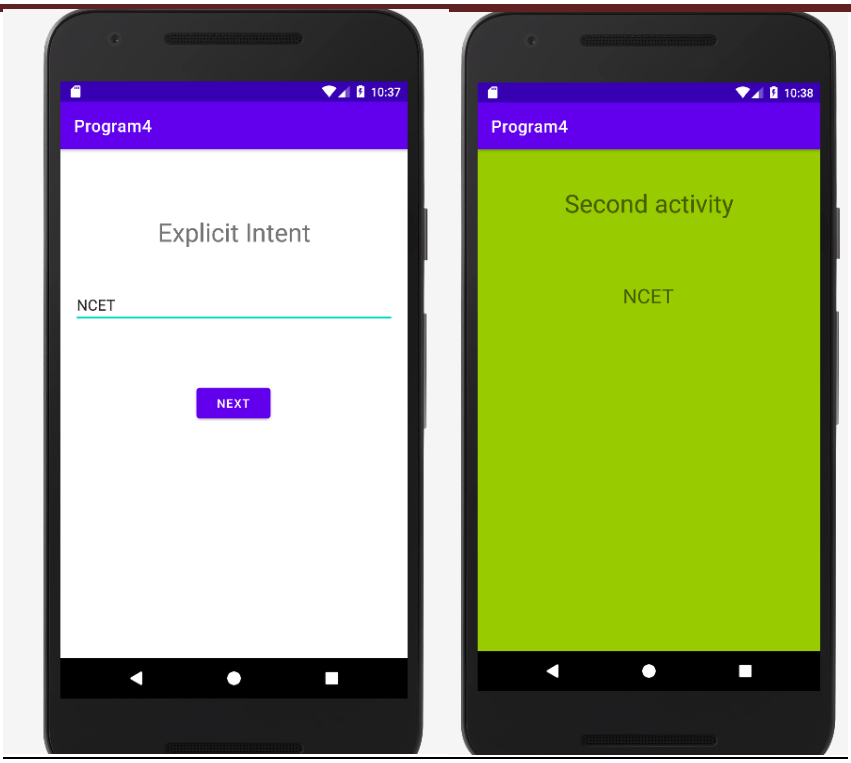
Second Activity XML code: activity_second.xml

```
<?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"
   android:background="#99cc00"
   tools:context=".Second">

   <TextView
      android:id="@+id/textView"
      android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:text="Second activity"
        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="0.079" />

    <TextView
        android:id="@+id/result"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="24sp"
        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="0.28" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Second Activity Java code: Second.java

```
package com.example.a6aexplicitintent;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.TextView;

public class Second extends AppCompatActivity {
   TextView t;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        t=(TextView) findViewById(R.id.result);
       Bundle b1= getIntent().getExtras();
       String s1=b1.getString("user");
       t.setText(s1);
    }
}
```


10:37
Program4
Explicit Intent
NCET
NEXT
10:38
Program4
Second activity
NCET

Program 5:

Create an android application with Activity has three buttons. On click of Buton 1 open the web browser application, on click of Button 2 open the call application and on click of Button 3 open the map application.

XML Code: activity_main.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="Implicit Intent"
        android:textColor="#EC1010"
        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="0.116" />

    <Button
        android:id="@+id/b1"
        android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:onClick="openweb"
    android:text="open web"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.454"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.235" />

<Button
    android:id="@+id/b2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="opendial"
    android:text="open call"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.462"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.38" />

<Button
    android:id="@+id/b3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="openmap"
    android:text="open map"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```

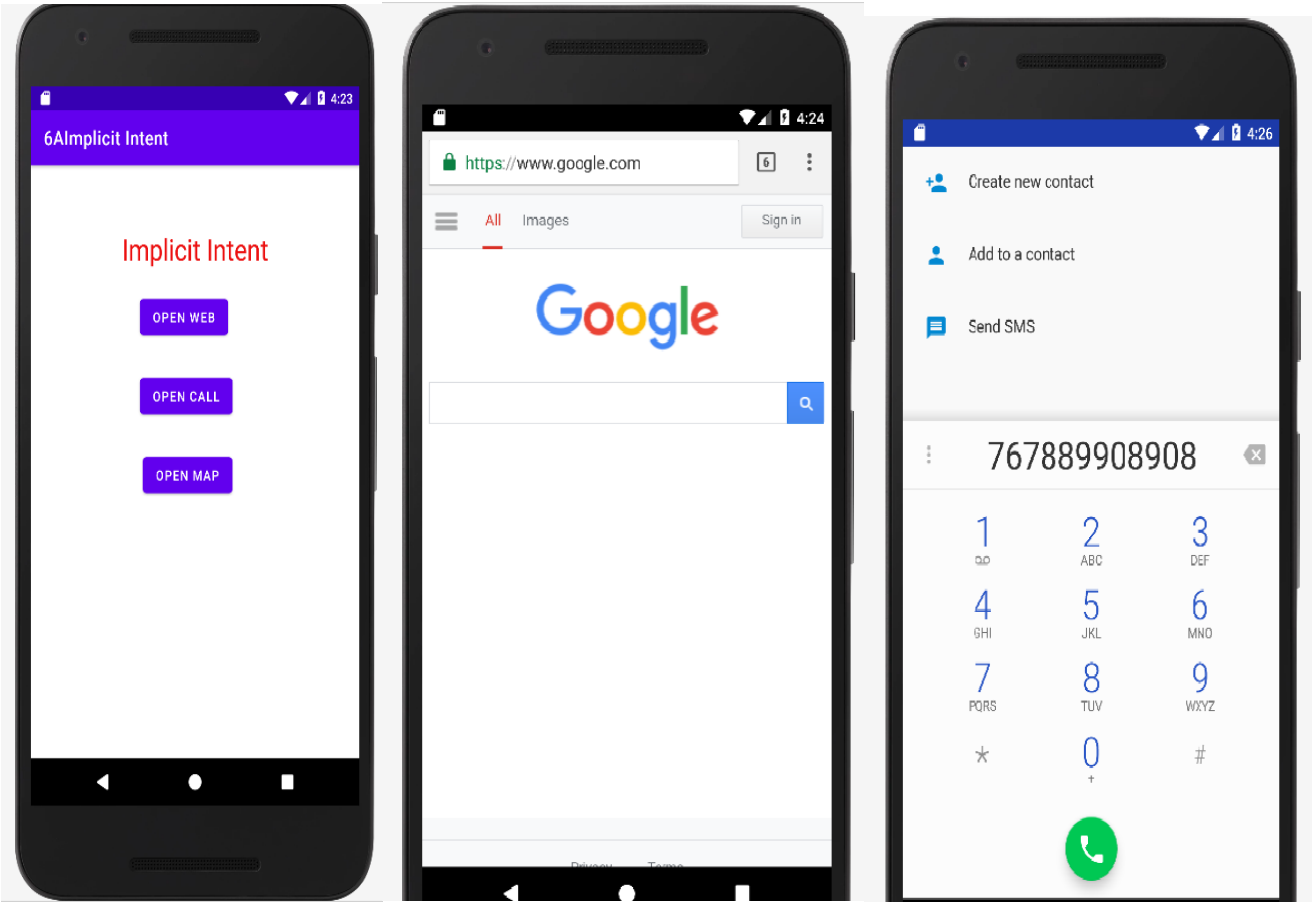
```
    app:layout_constraintHorizontal_bias="0.469"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.525" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Java code: MainActivity.java

```
package com.example.a6aimplicitintent;
import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

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

   public void openweb(View view) {
            Intent i1=new Intent(Intent.ACTION_VIEW, Uri.parse("http://www.google.com"));
             startActivity(i1);
 }
   public void opendial(View view) {
          Intent i2=new Intent(Intent.ACTION_VIEW,Uri.parse("tel:767889908908"));
             startActivity(i2);}
```

```
    public void openmap(View view) {
        Intent i3=new Intent(Intent.ACTION_VIEW,Uri.parse("geo:20.593,78.9629"));
        startActivity(i3);
    }
}
```

Output



Program 6:

Develop an android application to Create a login Activity. It asks "username" and "password" from user. If username and password are valid, it displays Welcome message using new activity.

XML Code:activity_main.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">

    <EditText
        android:id="@+id/etName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:autofillHints=""
        android:ems="10"
        android:hint="USER NAME"
        android:inputType="textPersonName"
        app:layout_constraintTop_toBottomOf="@id/etName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.326" />
    <EditText
        android:id="@+id/etPassword"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:autofillHints=""
        android:ems="10"
        android:hint="PASSWORD"
        android:inputType="numberPassword"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toBottomOf="@+id/etName"
    app:layout_constraintVertical_bias="0.064" />

<Button
    android:onClick="Login"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="SIGN IN"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/etPassword"
    app:layout_constraintVertical_bias="0.098" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java code: MainActivity.java

```
package com.example.loginform;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
   EditText uname,password;

   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      uname= (EditText) findViewById(R.id.etName) ;
      password=(EditText) findViewById(R.id.etPassword);

   }
   public void Login(View view) {
      if(uname.getText().toString().equals("Admin")&&password.getText().toString().equals("1234"))
      {
         Intent i=new Intent(this,Second.class);
         startActivity(i);
         Toast.makeText(this, " Login Successful", Toast.LENGTH_SHORT).show();

      }
      else
```

```
        {
            Toast.makeText(this, "Login Failure", Toast.LENGTH_SHORT).show();
        }

    }
}
```

Second.java

```
package com.example.loginform;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

public class Second  extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.show);
    }
}
```

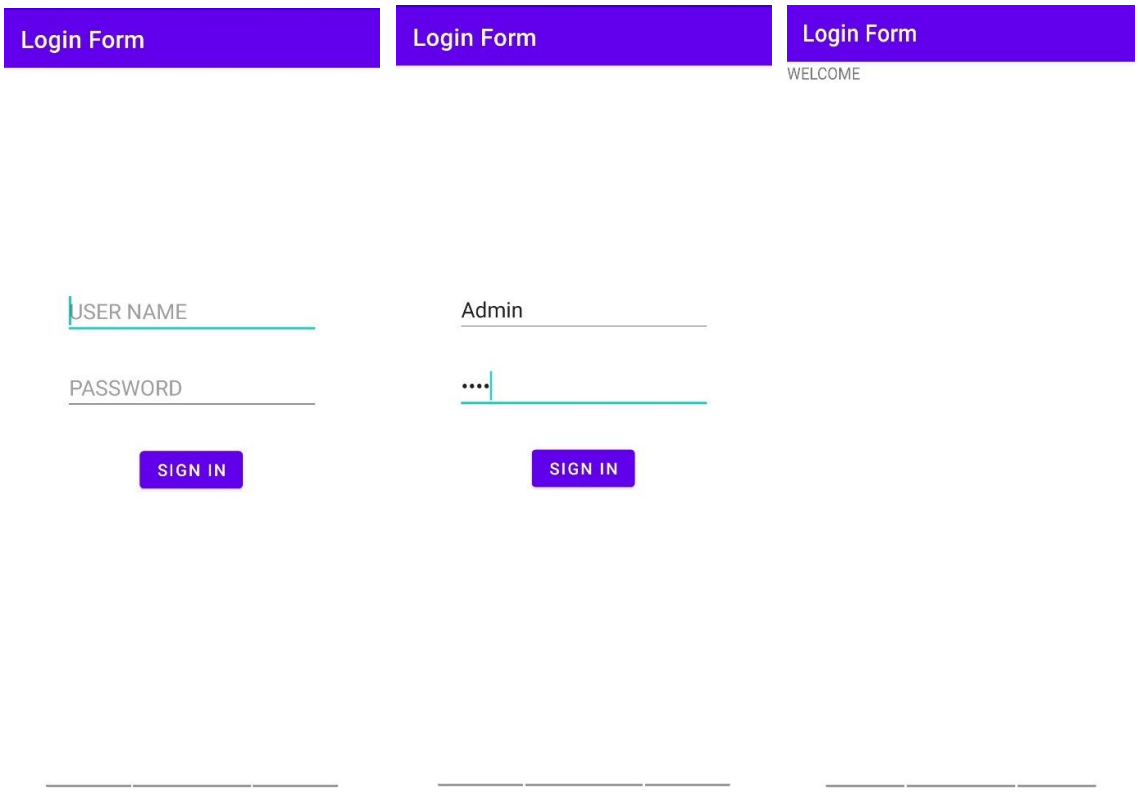
activity_Second.xml

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="WELCOME"
        tools:layout_editor_absoluteX="146dp"
        tools:layout_editor_absoluteY="196dp"
        tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Note*

Create activity.xml and mainactivity.java file then go to Project java folder→ Right click→new->Activity→Empty activity→ give file name as second.java and activity_Second.xml

OUTPUT


Login Form
Login Form
Login Form
WELCOME
USER NAME
PASSWORD
SIGN IN
Admin
SIGN IN

Program 7:

Develop an android application to design a Simple Calculator application has two edit texts and four buttons. When you enter two numbers and click a button, the application performs the calculation for that button and displays the result.

XML Code: activity_main.xml

```
<?xmlversion="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"
       android:orientation="horizontal"
       tools:context=".MainActivity">


          <EditText
             android:id="@+id/firstNo"
             android:layout_width="wrap_content"
             android:layout_height="wrap_content"
             android:layout_marginLeft="30dp"
             android:layout_marginTop="100dp"
             android:gravity="center"
             android:inputType="number"
             android:backgroundTint="#FFBF00"
             android:ems="7"
             android:hint="EnterFirstNo"
             android:minHeight="48dp"/>

          <EditText
             android:id="@+id/secondtNo"
             android:layout_width="wrap_content"
             android:layout_height="wrap_content"
             android:layout_marginLeft="20dp"
             android:layout_marginTop="100dp"
             android:backgroundTint="#FFBF00"
             android:ems="7"
             android:inputType="number"
             android:gravity="center"
             android:hint="EnterSecondNo"
             android:minHeight="48dp"/>


       <TextView
          android:id="@+id/output"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
```

```
        android:layout_marginTop="36dp"
        android:gravity="center"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/linearLayout"/>


        <Button
            android:onClick="add"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="+"
            android:textColor="@color/black"
            android:backgroundTint="#FFBF00"
            android:gravity="center"
            android:textSize="25dp"
            android:layout_marginLeft="10dp"
          android:layout_marginTop="10dp"/>

        <Button
            android:onClick="sub"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textColor="@color/black"
            android:text="-"
            android:backgroundTint="#FFBF00"
            android:gravity="center"
            android:textSize="25dp"
            android:layout_marginLeft="10dp
         android:layout_marginTop="10dp"/>


<Button
            android:onClick="mul"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textColor="@color/black"
            android:text="*"
            android:gravity="center"
            android:textSize="25dp"
            android:backgroundTint="#FFBF00"
            android:layout_marginLeft="10dp"
          android:layout_marginTop="10dp"/>

        <Button
            android:onClick="div"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
```

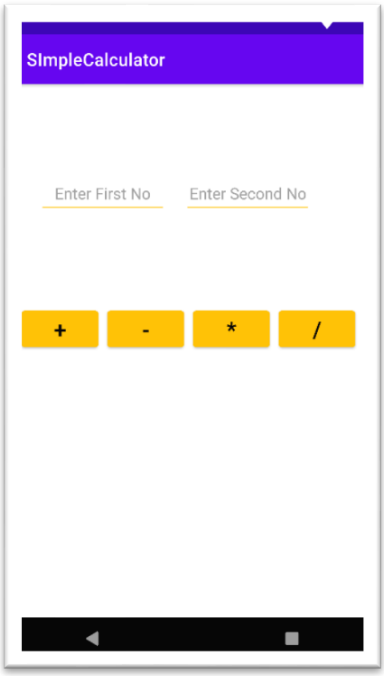
```
            android:text="/"
            android:gravity="center"
            android:backgroundTint="#FFBF00"
            android:textColor="@color/black"
            android:layout_marginLeft="10dp"
            android:textSize="25dp
            android:layout_marginTop="10dp"/>

    </androidx.constraintlayout.widget.ConstraintLayout>
```

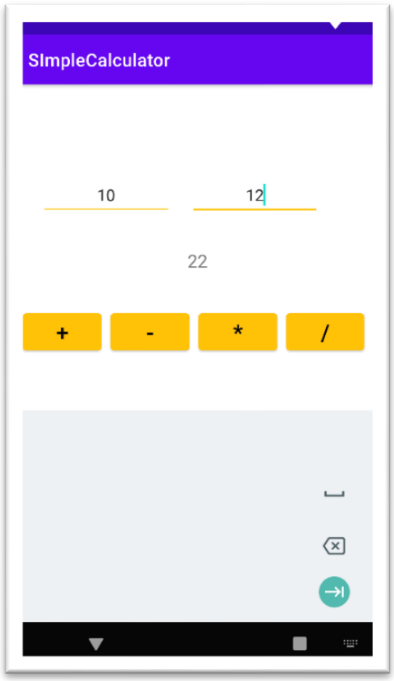
Java Code:Mainactivity.java

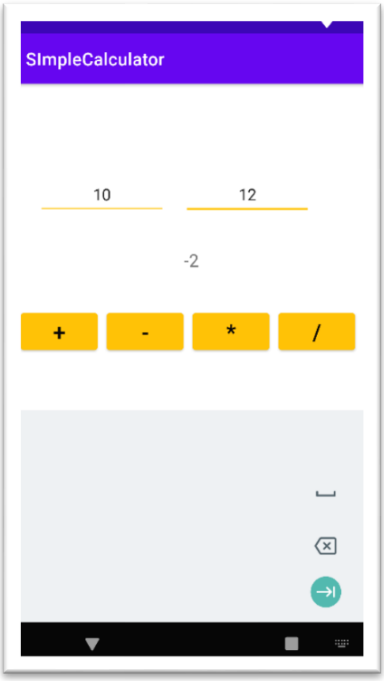
```
package com.example.simplecalculator;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity
{
   int number1, number2;
   TextView output;
   EditText no1,no2;
   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
       no1 = (EditText) findViewById(R.id.firstNo);
       no2 = (EditText) findViewById(R.id.secondtNo);
       output =(TextView) findViewById(R.id.output);
   }

   public void add(View view)
   {
      number1 = Integer.parseInt(no1.getText().toString());
      number2 = Integer.parseInt(no2.getText().toString());
      output.setText(String.valueOf(number1+number2));
   }
   public void sub(View view)
   {
      number1 = Integer.parseInt(no1.getText().toString());
      number2 = Integer.parseInt(no2.getText().toString());
      output.setText(String.valueOf(number1-number2));
    }
   public void mul(View view)
   {
      number1 = Integer.parseInt(no1.getText().toString());
      number2 = Integer.parseInt(no2.getText().toString());
      output.setText(String.valueOf(number1*number2));
   }
```

```
  public void div(View view)
  {
     number1 = Integer.parseInt(no1.getText().toString());
     number2 = Integer.parseInt(no2.getText().toString());
     output.setText(String.valueOf(number1/number2));
  }
}
```

OUTPUT


SImpleCalculator
Enter First No
Enter Second No
+
-
*
/


SImpleCalculator
10
12
22
+
-
*
/


SImpleCalculator
10
12
-2
+
-
*
/

Program 8:

Develop a simple application with one EditText so that the user can write some text in it. Create a button called "Convert Text to Speech" that converts the user input text into voice.

XML Code:activitymain.xml

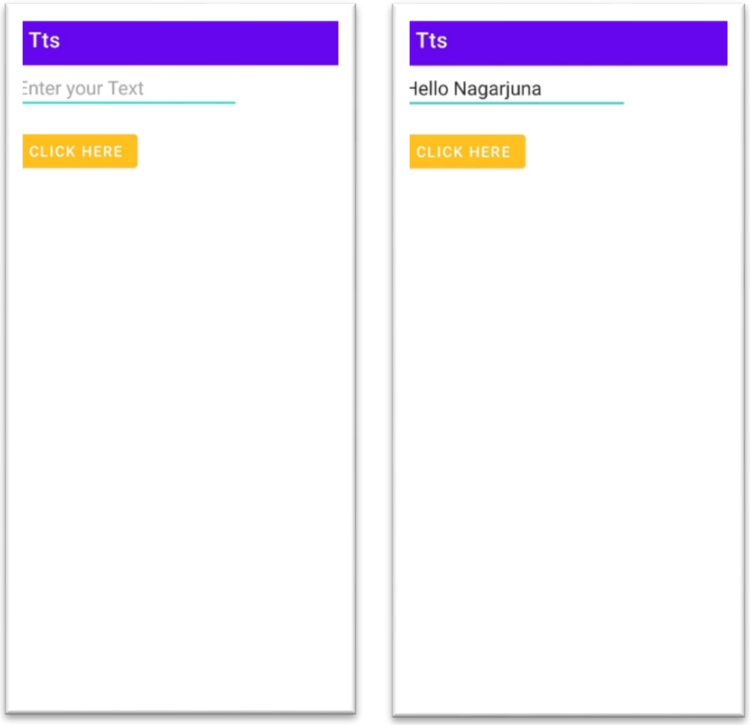
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
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

    <EditText
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="100dp"
        android:ems="10"
        android:hint="Enter your Text"
        android:minHeight="48dp"
        tools:ignore="MissingConstraints" />

    <Button
        android:onClick="voice"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="Click Here"
        android:backgroundTint="#FFBE1A"
        app:layout_constraintTop_toBottomOf="@id/text"
        tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:Mainactivity.java

```
package com.example.tts;
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;

public class MainActivity extends AppCompatActivity
```

```
{

    EditText textData;
    TextToSpeech tts;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public void voice(View view)
    {
        textData = (EditText) findViewById(R.id.text);
        tts = new TextToSpeech(getApplicationContext(), new TextToSpeech.OnInitListener()
        {
            @Override
            public void onInit(int i)
            {
                if (i == TextToSpeech.SUCCESS)
                {
                    tts.speak(textData.getText().toString(), TextToSpeech.QUEUE_ADD, null, null);
                }
            }

        });
    }
}
```

OUTPUT



VIVA QUESTIONS

1. What is Android?
It is an open-sourced operating system that is used primarily on mobile devices, such as cell phones and tablets. It is a Linux kernel-based system that's been equipped with rich components that allows developers to create and run apps that can perform both basic and advanced functions.</p>

2. What Is the Google Android SDK?
The Google Android SDK is a tool set that developers need in order to write apps on Android enabled devices. It contains a graphical interface that emulates an Android driven handheld environment, allowing them to test and debug their codes.

3. How many key components are there in Android Architecture
Android Architecture is made up of 4 key components:

4. Describe the Android Framework.
The Android Framework is an important aspect of the Android Architecture. Here you can find all the classes and methods that developers would need in order to write applications on the Android environment.

5. What is AAPT?
AAPT is short for Android Asset Packaging Tool. This tool provides developers with the ability to deal with zip-compatible archives, which includes creating, extracting as well as viewing its contents.

6. What is the importance of having an emulator within the Android environment?
The emulator lets developers "play" around an interface that acts as if it were an actual mobile device. They can write and test codes, and even debug. Emulators are a safe place for testing codes especially if it is in the early design phase.

7. What is the use of an activity Creator?
An activity Creator is the first step towards the creation of a new Android project. It is made up of a shell script that will be used to create new file system structure necessary for writing codes within the Android IDE.

8. Describe Activities.
Activities are what you refer to as the window to a user interface. Just as you create windows in order to display output or to ask for an input in the form of dialog boxes, activities play the same role, though it may not always be in the form of a user interface.

9. What are Intents?
Intents displays notification messages to the user from within the Android enabled device. It can be used to alert the user of a particular state that occurred. Users can be made to respond to intents.

10. Differentiate Activities from Services.
Activities can be closed, or terminated anytime the user wishes. On the other hand, services are designed to run behind the scenes, and can act independently. Most services.

11. What items are important in every Android project?
These are the essential items that are present each time an Android project is created:
Android Manifest.xml
build.xml
bin/
src/
res/
assets/

12. What is the importance of XML-based layouts?
The use of XML-based layouts provides a consistent and somewhat standard means of setting GUI definition format. In common practice, layout details are placed in XML files while other items are placed in source files.

13. What are containers?
Containers, as the name itself implies, holds objects and widgets together, depending on which specific items are needed and in what particular arrangement that is wanted. Containers may hold labels, fields, buttons, or even child containers, as examples.

14. What is Orientation?
Orientation, which can be set using set Orientation(), dictates if the Linear Layout is represented as a row or as a column. Values are set as either HORIZONTAL or VERTICAL.

15. What is the importance of Android in the mobile market?
Developers can write and register apps that will specifically run under the Android environment. This means that every mobile device that is Android enabled will be able to support and run these apps. With the growing popularity of Android mobile devices, developers can take advantage of this trend by creating and uploading their apps on the Android Market for distribution to anyone who wants to download it.

16. What do you think are some disadvantages of Android?
Given that Android is an open-source platform, and the fact that different Android operating systems have been released on different mobile devices, there's no clear cut policy to how applications can adapt with various OS versions and upgrades.
–One app that runs on this particular version of Android OS may or may not run on another version.
–Another disadvantage is that since mobile devices such as phones and tabs come in different sizes and forms, it poses a challenge for developers to create apps that can adjust correctly to the right screen size and other varying features and specs.

17. What is adb?
Adb is short for "Android Debug Bridge". It allows developers the power to execute remote shell commands. Its basic function is to allow and control communication towards and from the emulator port.

18. What are the four essential states of an activity?
Active – if the activity is at the foreground

Paused – if the activity is at the background and still visible
Stopped – if the activity is not visible and therefore is hidden or obscured by another activity Destroyed – when the activity process is killed or completed terminated

19. What is ANR?
ANR is short for Application Not Responding. This is actually a dialog that appears to the user whenever an application have been unresponsive for a long period of time.

20. Which elements can occur only once and must be present?
Among the different elements, the and elements must be present and can occur only once. The rest are optional, and can occur as many times as needed.

21. How are escape characters used as attribute?
Escape characters are preceded by double backslashes. For example, a newline character is created using

22. What is the importance of settings permissions in app development?
Permissions allow certain restrictions to be imposed primarily to protect data and code. Without these, codes could be compromised, resulting to defects in functionality.

23. What is the function of an intent filter?
Because every component needs to indicate which intents they can respond to, intent filters are used to filter out intents that these components are willing to receive. One or more intent filters are possible, depending on the services and activities that is going to make use of it

24. **Enumerate the three key loops when monitoring an activity?**
Entire lifetime – activity happens between on Create and on Destroy Visible lifetime – activity happens between on Start and on Stop Foreground lifetime – activity happens between on Resume and on Pause

25. When is the on Stop(. method invoked?
A call to on Stop method happens when an activity is no longer visible to the user, either because another activity has taken over or if in front of that activity.

26. Is there a case wherein other qualifiers in multiple resources take precedence over locale?
Yes, there are actually instances wherein some qualifiers can take precedence over locale. There are two known exceptions, which are the MCC (mobile country code. and MNC (mobile network code. Qualifiers).

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