1. Creating “Hello World” Application.

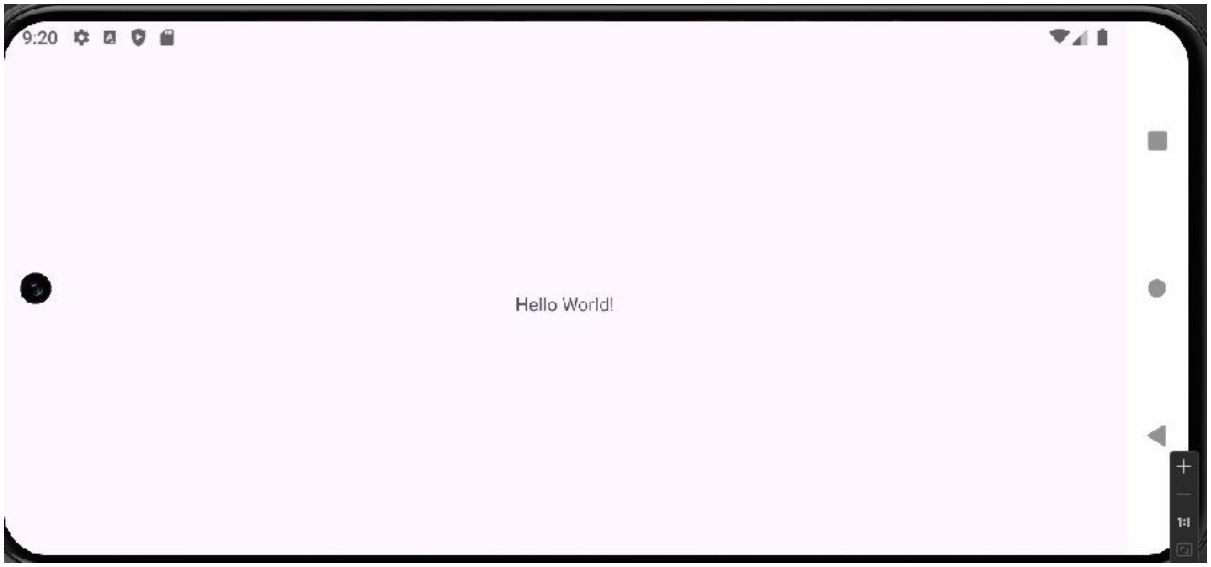
activity_main.xml :

```
<?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:id="@+id/main"
    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>
```

MainActivity.Java :

```
package com.example.myapplication;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

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

    }
}
```

OUTPUT



2. Creating an Application that displays message based on the screen orientation.

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">
    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp"
        android:layout_marginTop="112dp"
        android:onClick="onClick"
        android:text="Launch next activity"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.612"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText1"
        app:layout_constraintVertical_bias="0.613" />
    <TextView
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="124dp"
        android:ems="10"
        android:textSize="22dp"
        android:text="This activity is portrait orientation"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.502"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.Java :

```
package com.example.myapplication;

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


import androidx.activity.EdgeToEdge;
```

```
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

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

    }
    public void onClick(View v) {
        Intent intent = new Intent(MainActivity.this,NextActivity.class);
        startActivity(intent);
    }
}
```

AndroidManifest.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.MyApplication"
        tools:targetApi="31">
        <activity
            android:name=".NextActivity"
            android:exported="false" android:screenOrientation="landscape"
            />
        <activity
            android:name=".MainActivity"
            android:exported="true"
            android:screenOrientation="portrait">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER"
                    />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_next.xml :

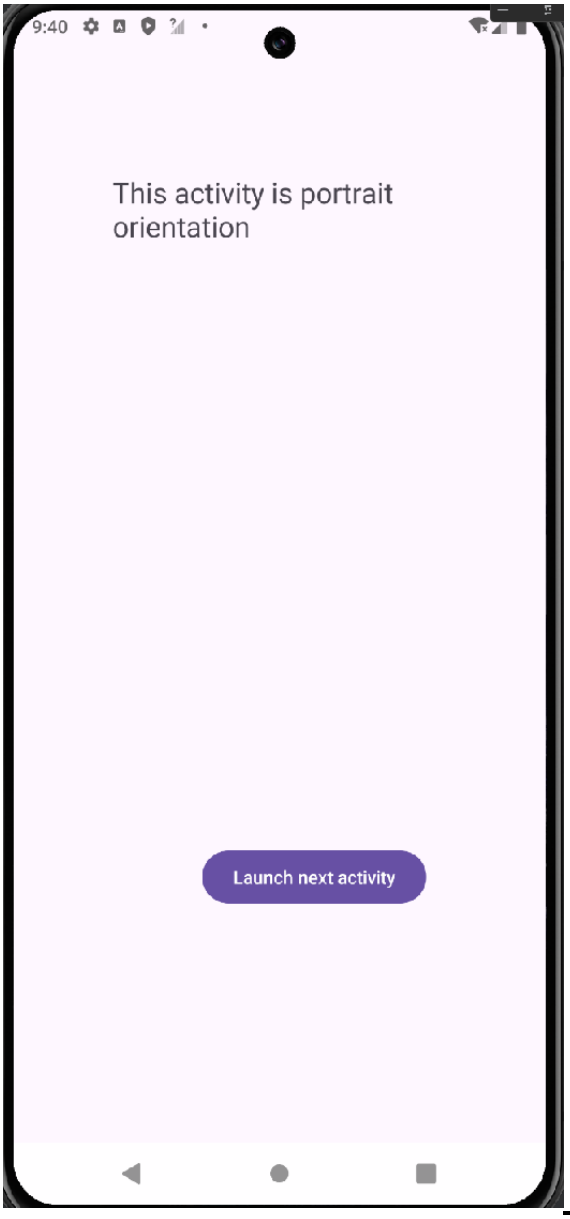
```
 <?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
```

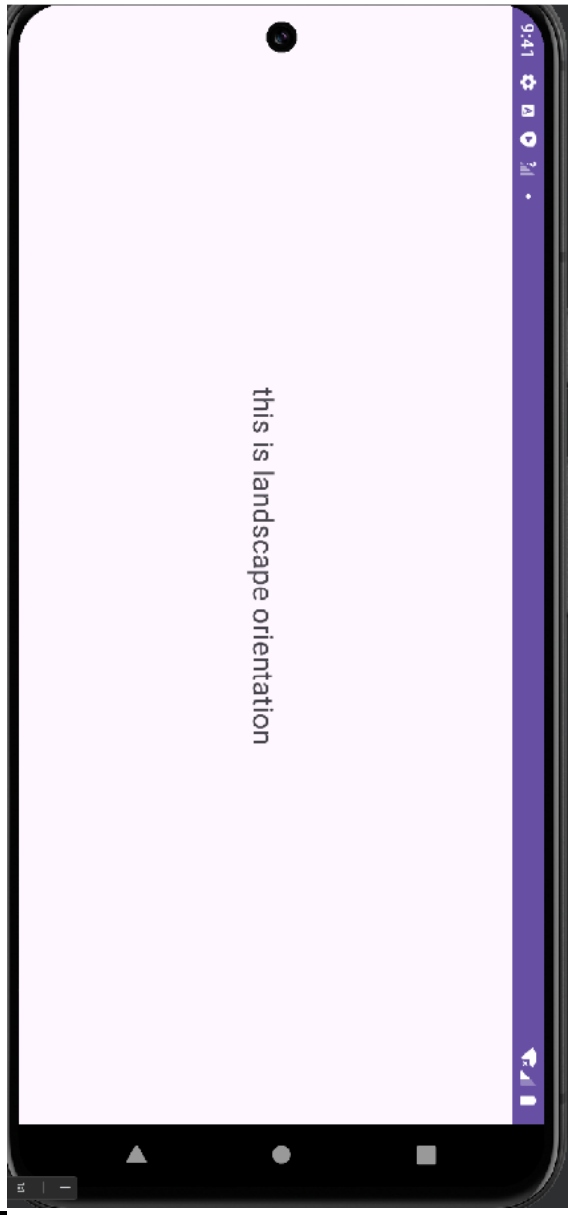
```
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".NextActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="180dp"
        android:text="this is landscape orientation"
        android:textSize="22dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.502"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

NextActivity.java :

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class NextActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_next);
    }
}
```

OUTPUT


9:40
This activity is portrait orientation
Launch next activity


9:41
this is landscape orientation

3. Create an application to develop Login window using UI controls.

activity_main.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:orientation="vertical"
    android:padding="16dp">
    <TextView android:id="@+id/tvTitle"
        android:layout width="wrap content"
        android:layout_height="wrap_content"
        android:textSize="24sp"
        android:text="Login Form"
        android:layout_gravity="center"/>
    <TextView android:id="@+id/tvUserName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="20sp"
        android:text="User Name" />
    <EditText
        android:id="@+id/etUsername"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Username"
        android:inputType="text"
        android:padding="8dp"
        android:layout_marginTop="16dp"
        android:layout_marginBottom="30dp"/>
    <TextView android:id="@+id/tvPassword"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="20sp"
        android:text="Password" />
    <EditText
        android:id="@+id/etPassword"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Password"
        android:inputType="textPassword"
        android:padding="8dp"
        android:layout_marginTop="16dp"
        android:layout_marginBottom="30dp"/>
    <Button
        android:id="@+id/btnLogin"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Login"
        android:textSize="18sp"
```

```
        android:layout_marginTop="16dp"/>
</LinearLayout>
```

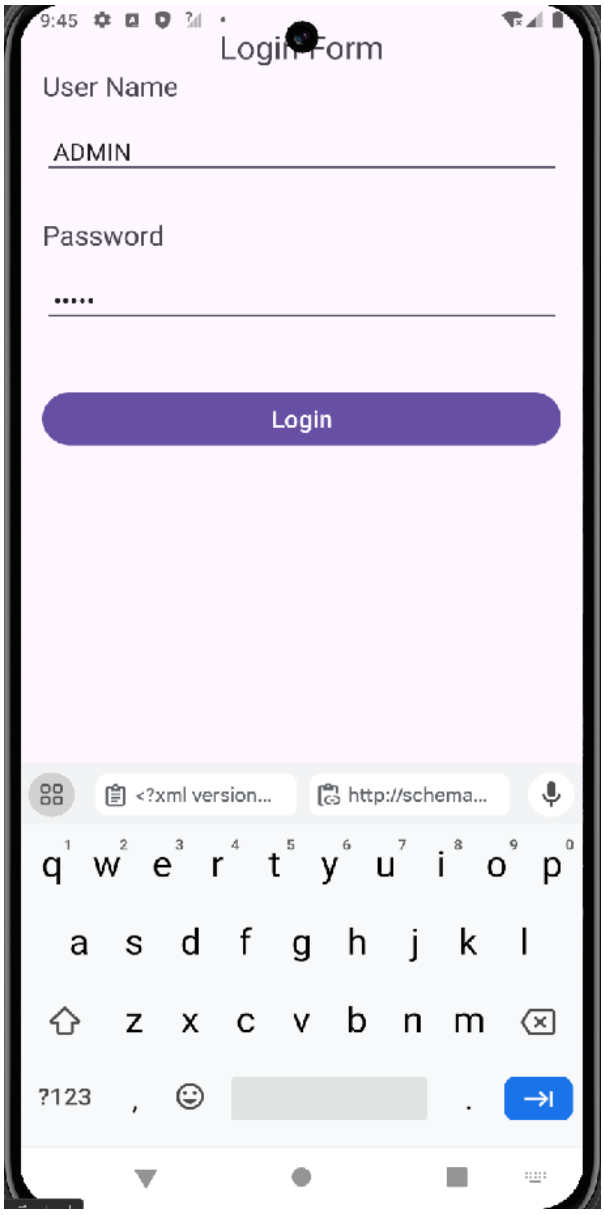
MainActivity.Java :

```
package com.example.myapplication;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

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

    }
}
```

AndroidManifest.xml :

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

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.MyApplication"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

OUTPUT


9:45
Login Form
User Name
ADMIN
Password
.....
Login
<?xml version...
http://schema...
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123

4. Create an application to implement new activity using explicit intent and implicit intent.

activity_main.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    android:padding="16dp"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/explicit_intent_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Open Second Activity"
        android:layout_centerInParent="true"/>

    <Button
        android:id="@+id/implicit_intent_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Open Website"
        android:layout_below="@id/explicit_intent_btn"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>

</RelativeLayout>
```

MainActivity.Java :

```
package com.example.myapplication;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        Button explicitIntentBtn = findViewById(R.id.explicit_intent_btn);
        explicitIntentBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Explicit Intent
                Intent intent = new Intent(MainActivity.this,
SecondActivity.class);
                startActivity(intent);
            }
```

```
        });

        Button implicitIntentBtn = findViewById(R.id.implicit_intent_btn);
        implicitIntentBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Implicit Intent
                Intent intent = new Intent(Intent.ACTION_VIEW,
Uri.parse("https://www.example.com"));
                startActivity(intent);
            }
        });
    }
}
```

activity_second.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    android:padding="16dp"
    tools:context=".SecondActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Second Activity"
        android:textSize="24sp"
        android:layout_centerInParent="true"/>

</RelativeLayout>
```

SecondActivity.Java :

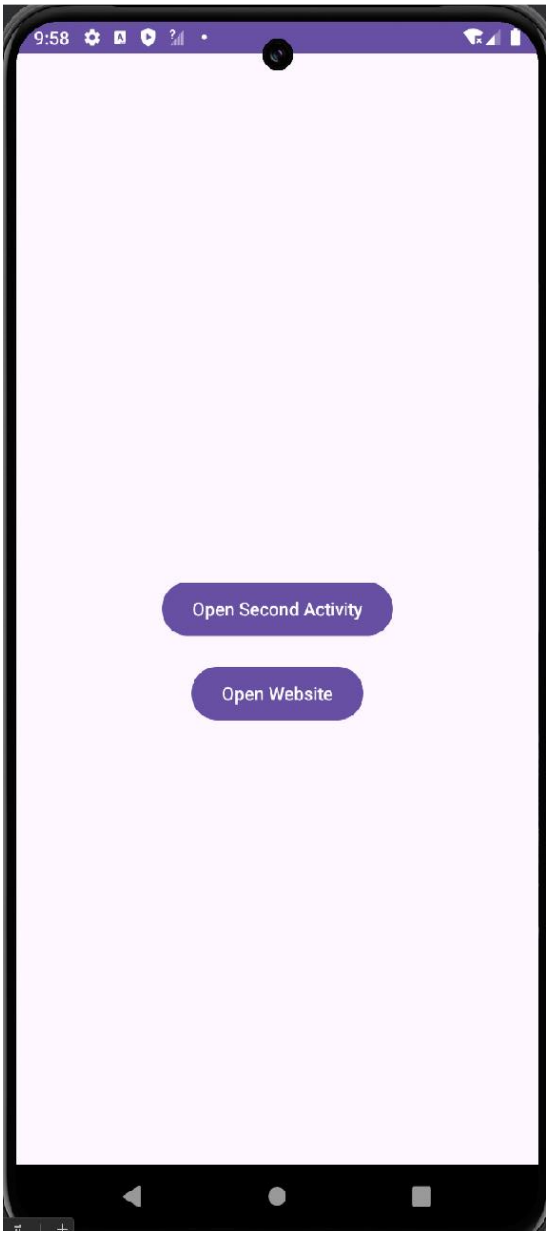
```
package com.example.myapplication;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

public class SecondActivity extends AppCompatActivity {

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

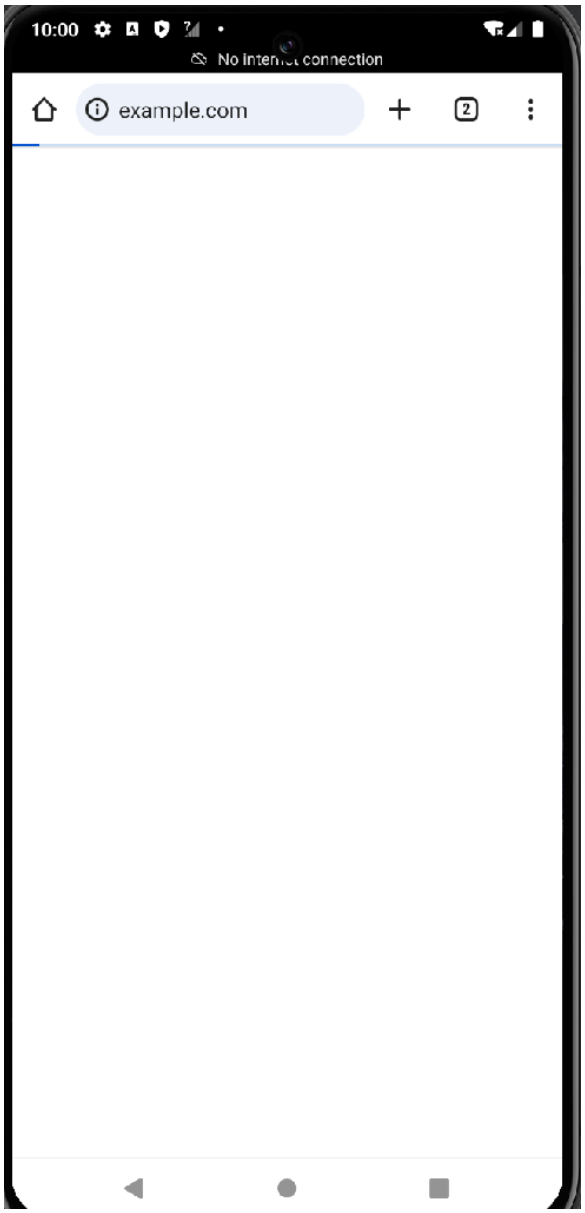
androidManifest.xml :

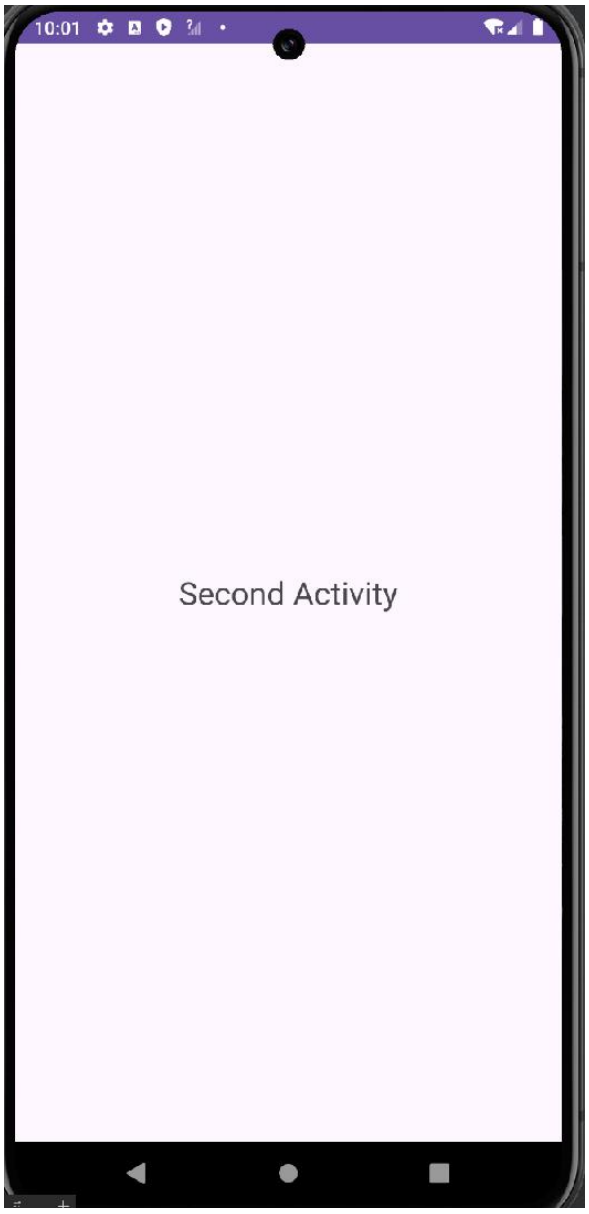
```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    package="com.example.myapplication">

    <application
```

```
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.MyApplication">
        <activity
            android:name=".MainActivity"
            android:exported="true"
            tools:ignore="MissingClass">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

OUTPUT






10:01
Second Activity

5. Create an Application that displays custom designed Opening Screen.

activity_main.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/idRLContainer"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/idTVHeading"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:layout_margin="20dp"
        android:gravity="center"
        android:padding="10dp"
        android:text="Background Drawable in Android"
        android:textAlignment="center"
        android:textColor="@color/white"
        android:textSize="20sp"
        android:textStyle="bold" />
</RelativeLayout>
```

back_drawable.xml :

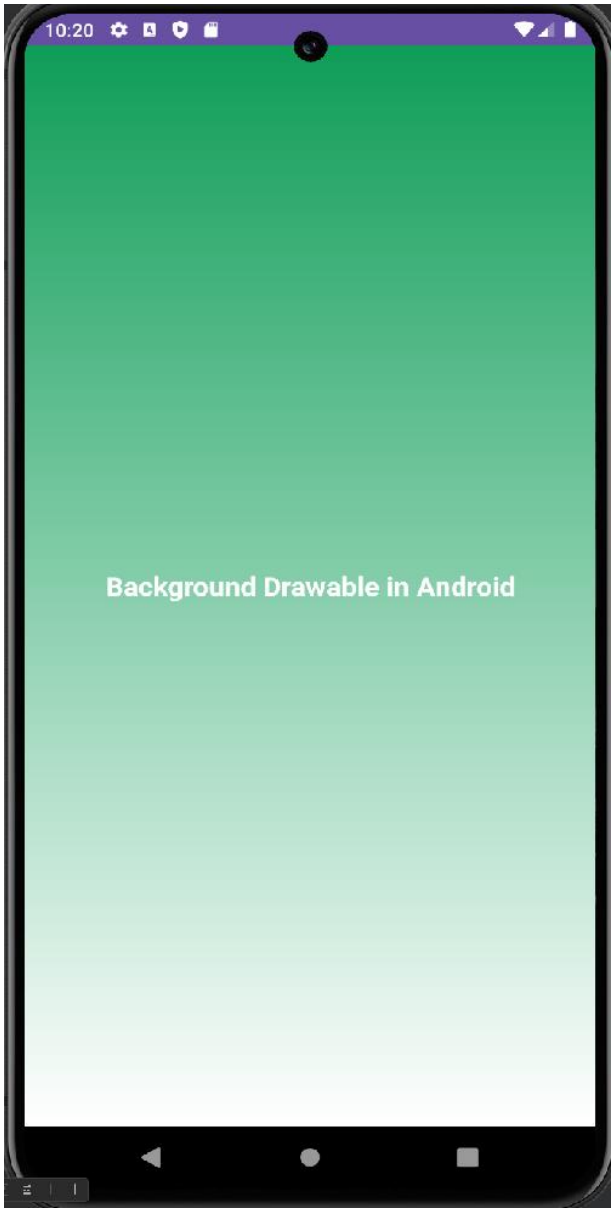
```
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <!--on below line we are adding gradient and
    specifying start and end color with angle-->
    <gradient
        android:angle="270"
        android:endColor="@color/white"
        android:startColor="#0F9D58" />
</shape>
```

MainActivity.Java :

```
package com.example.myapplication;

import android.os.Bundle;
import android.widget.RelativeLayout;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    // on the below line we are creating a variable.
    private RelativeLayout containerRL;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        // on below line we are initializing variables with ids.
```

```
        containerRL = findViewById(R.id.idRLContainer);
        // on below line we are setting background for
        // our relative layout on below line.

containerRL.setBackground(getResources().getDrawable(R.drawable.back_drawab
le));
    }
}
```

OUTPUT



6. Create an UI with all views.

activity_main.xml :

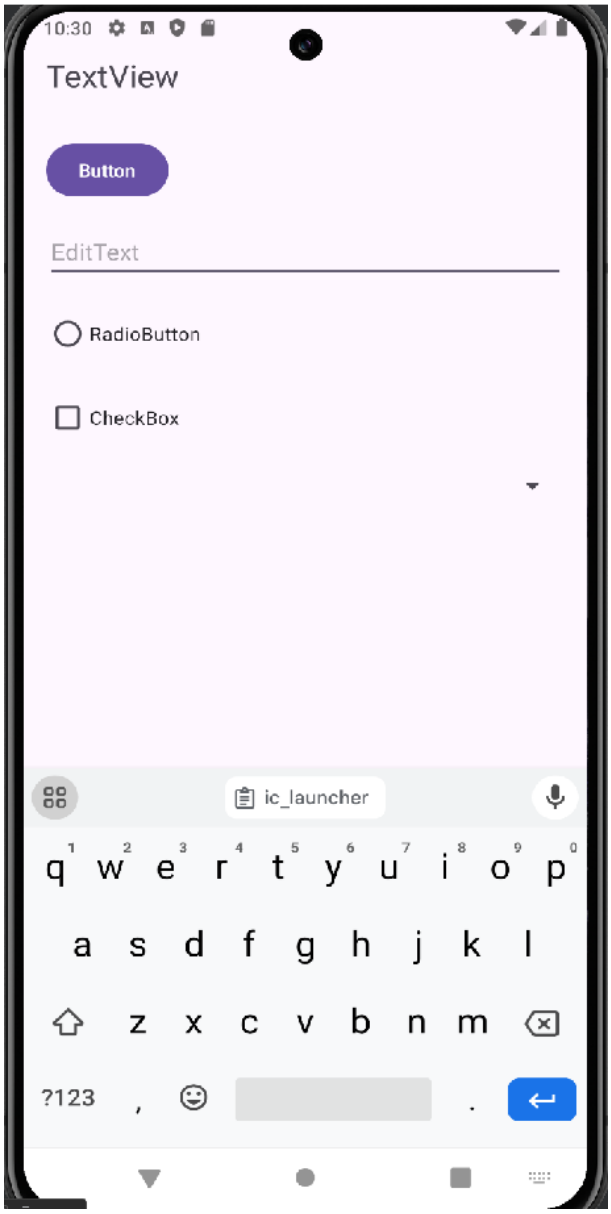
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">

    <!-- TextView -->
    <TextView
        android:id="@+id/text_view"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        android:textSize="24sp"
        android:layout_marginTop="16dp"/>

    <!-- ImageView -->
    <ImageView
        android:id="@+id/image_view"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@drawable/ic_launcher"
        android:layout_below="@id/text_view"
        android:layout_marginTop="16dp"/>

    <!-- Button -->
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button"
        android:layout_below="@id/image_view"
        android:layout marginTop="16dp"/>

    <!-- EditText -->
    <EditText
        android:id="@+id/edit_text"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="EditText"
        android:layout_below="@id/button"
        android:layout_marginTop="16dp"/>

    <!-- RadioButton -->
    <RadioButton
        android:id="@+id/radio_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="RadioButton"
        android:layout_below="@id/edit_text"
        android:layout_marginTop="16dp"/>

    <!-- CheckBox -->
    <CheckBox
```

```
        android:id="@+id/check_box"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="CheckBox"
        android:layout_below="@id/radio_button"
        android:layout_marginTop="16dp"/>

    <!-- Spinner -->
    <Spinner
        android:id="@+id/spinner"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/check_box"
        android:layout_marginTop="16dp"/>

</RelativeLayout>
```

MainActivity.Java :

```
package com.example.myapplication;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

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

    }
}
```

OUTPUT


10:30
TextView
Button
EditText
RadioButton
CheckBox
ic_launcher
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123

7. Create menu in Application

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:id="@+id/main"
    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>
```

MainActivity.Java :

```
package com.example.myapplication;

import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

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

    }
    @Override
    public boolean onCreateOptionsMenu( Menu menu)
    {
        MenuInflater inflater = getMenuInflater();
        inflater.inflate(R.menu.menu, menu);
        return true;
```

```
    }
    @Override
    public boolean onOptionsItemSelected(MenuItem item)
    {
        int itemid=item.getItemId();
        if(itemid==R.id.hello) {
            Toast.makeText(MainActivity.this, "hello",
Toast.LENGTH_SHORT).show();
            return true;
        }
        else if (itemid==R.id.logout) {
            logout();
            return true;
        }
        else
                return super.onOptionsItemSelected(item);

        }

   public void logout()
   {
       Toast.makeText(this, "bye",Toast.LENGTH_SHORT).show();

}
}
```

menu.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/hello"
        android:title="Say Hello" />
    <item
        android:id="@+id/logout"
        android:title="logout" />


</menu>
```

Night\themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Base.Theme.MyApplication"
parent="Theme.AppCompat.DayNight">
        <!-- Customize your dark theme here. -->
        <!-- <item name="colorPrimary">@color/my_dark_primary</item> -->
    </style>
</resources>
```

Values/themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Base.Theme.MyApplication"
parent="Theme.AppCompat.DayNight">
        <!-- Customize your light theme here. -->
        <!-- <item name="colorPrimary">@color/my_light_primary</item> -->
    </style>
```

```
    <style name="Theme.MyApplication" parent="Base.Theme.MyApplication" />
</resources>
```

OUTPUT

8. Read/write the Local Data.

activity_main.xml :

```
<LinearLayout 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"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/editText1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Username"/>

    <EditText
        android:id="@+id/editText2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Password"/>

    <Button
        android:id="@+id/buttonDisplay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Display USERNAME and PASSWORD"/>

    <TextView
        android:id="@+id/textViewDisplay1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:textSize="18sp"
        android:textStyle="bold"
        android:textColor="@android:color/black"/>
    <TextView
        android:id="@+id/textViewDisplay2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:textSize="18sp"
        android:textStyle="bold"
        android:textColor="@android:color/black"/>
</LinearLayout>
```

MainActivity.Java :

```java
package com.example.testdisplay;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    EditText editText1, editText2;
    Button buttonDisplay;
    TextView textViewDisplay1, textViewDisplay2;

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

        editText1 = findViewById(R.id.editText1);
        editText2 = findViewById(R.id.editText2);
        buttonDisplay = findViewById(R.id.buttonDisplay);
        textViewDisplay1 = findViewById(R.id.textViewDisplay1);
        textViewDisplay2 = findViewById(R.id.textViewDisplay2);

        buttonDisplay.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Get text from EditText
                String inputText1 = editText1.getText().toString();
                String inputText2 = editText2.getText().toString();

                // Display text in TextView
                textViewDisplay1.setText(inputText1);
                textViewDisplay2.setText(inputText2);
            }
        });
    }
}
```

OUTPUT


12:30
febin
febin123
Display USERNAME and PASSWORD
febin
febin123

9. Create/Read/Write data with Database.

colors.xml

```
<color name="colorAccent">#FF6200EE</color>
<color name="colorPrimary">#FF3700B3</color>
<color name="colorPrimaryDark">#FF3700B3</color>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    tools:context=".MainActivity">
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:gravity="center">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Course Registation"
            android:textColor="@color/colorAccent"
            android:textSize="30dp"
            />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Course"
            />
        <EditText
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:id="@+id/course"
            android:textAlignment="center"
            />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <TextView
            android:layout_width="wrap_content"
```

```
            android:layout_height="wrap_content"
            android:text="Fee"
            />
        <EditText
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:id="@+id/fee"
            android:textAlignment="center"
            />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:id="@+id/bt1"
            android:text="Ok"
            android:background="@color/colorPrimary"
            />
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:id="@+id/bt2"
            android:text="View"
            android:background="@color/colorAccent"
            />
    </LinearLayout>
</LinearLayout>
```

MainActivity.Java :

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
import android.content.Intent;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteStatement;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    EditText ed1,ed2,ed3;
    Button b1,b2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ed1 = findViewById(R.id.name);
        ed2 = findViewById(R.id.course);
        ed3 = findViewById(R.id.fee);
        b1 = findViewById(R.id.bt1);
```

```
        b2 = findViewById(R.id.bt2);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v)
            {
                Intent i = new
                        Intent(getApplicationContext(),ViewActivity.class);
                startActivity(i);
            }
        });
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                insert();
            }
        });
    }
    public void insert()
    {
        try
        {
            String name = ed1.getText().toString();
            String course = ed2.getText().toString();
            String fee = ed3.getText().toString();
            SQLiteDatabase db = openOrCreateDatabase("SliteDb",
                    Context.MODE_PRIVATE,null);
            db.execSQL("CREATE TABLE IF NOT EXISTS records(id INTEGER
                    PRIMARY KEY AUTOINCREMENT,name VARCHAR,course
VARCHAR,fee VARCHAR)");
            String sql = "insert into records(name,course,fee)values('" +
                    name + "','" + course + "','" + fee + "')";
            SQLiteStatement statement = db.compileStatement(sql);
            statement.execute();
            Toast.makeText(this,"Record addded",Toast.LENGTH_LONG).show();
            ed1.setText("");
            ed2.setText("");
            ed3.setText("");
            ed1.requestFocus();
        }
        catch (Exception ex)
        {
            Toast.makeText(this,"Record Fail",Toast.LENGTH_LONG).show();
        }
    }
}
```

student.class:

```
public class Student {
    String id;
    String name;
    String course;
    String fee;
    String titles;
}
```

activity_view :

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".ViewActivity"
    android:orientation="vertical">
    <ListView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/lst1"
        />
</LinearLayout>
```

ViewActivity.java

package com.example.myapplication;

```
import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import java.util.ArrayList;
public class ViewActivity extends AppCompatActivity {
    ListView lst1;
    ArrayList<String> titles = new ArrayList<String>();
    ArrayAdapter arrayAdapter;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_view);
        SQLiteDatabase db = openOrCreateDatabase("SliteDb",
                Context.MODE_PRIVATE,null);
        lst1 = findViewById(R.id.lst1);
        final Cursor c = db.rawQuery("select * from records",null);
        int id = c.getColumnIndex("id");
        int name = c.getColumnIndex("name");
        int course = c.getColumnIndex("course");
        int fee = c.getColumnIndex("fee");
        titles.clear();
        arrayAdapter = new ArrayAdapter(this,

androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,titles);
        lst1.setAdapter(arrayAdapter);
        final ArrayList<Student> stud = new ArrayList<Student>();
        if(c.moveToFirst())
        {
            do{
                Student stu = new Student();
                stu.id = c.getString(id);
                stu.name = c.getString(name);
                stu.course = c.getString(course);
```

```
                stu.fee = c.getString(fee);
                stud.add(stu);
                titles.add(c.getString(id) + " \t " + c.getString(name) + "
                        \t " + c.getString(course) + " \t " +
c.getString(fee) );
            } while(c.moveToNext());
            arrayAdapter.notifyDataSetChanged();
            lst1.invalidateViews();
        }
        lst1.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
                    position, long id) {
                String aa = titles.get(position).toString();
                Student stu = stud.get(position);
                Intent i = new
                        Intent(getApplicationContext(),EditActivity.class);
                i.putExtra("id",stu.id);
                i.putExtra("name",stu.name);
                i.putExtra("course",stu.course);
                i.putExtra("fee",stu.fee);
                startActivity(i);
            }
        });
    }
}
```

activity_edit.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".EditActivity"
    android:orientation="vertical">
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:gravity="center">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Course Registation"
            android:textColor="@color/colorAccent"
            android:textSize="30dp"
            />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="ID"
            />
```

```
        <EditText
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:id="@+id/id"
            android:textAlignment="center"
            />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Name"
            />
        <EditText
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:id="@+id/name"
            android:textAlignment="center"
            />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Course"
            />
        <EditText
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:id="@+id/course"
            android:textAlignment="center"
            />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Fee"
            />
        <EditText
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
```

```
            android:ems="10"
            android:id="@+id/fee"
            android:textAlignment="center"
            />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:id="@+id/bt1"
            android:text="Edit"
            android:background="@color/colorPrimary"
            />
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:id="@+id/bt2"
            android:text="Delete"
            android:background="@color/colorAccent"
            />
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:id="@+id/bt3"
            android:text="Back"
            android:background="@color/colorPrimaryDark"
            />
    </LinearLayout>
</LinearLayout>
```

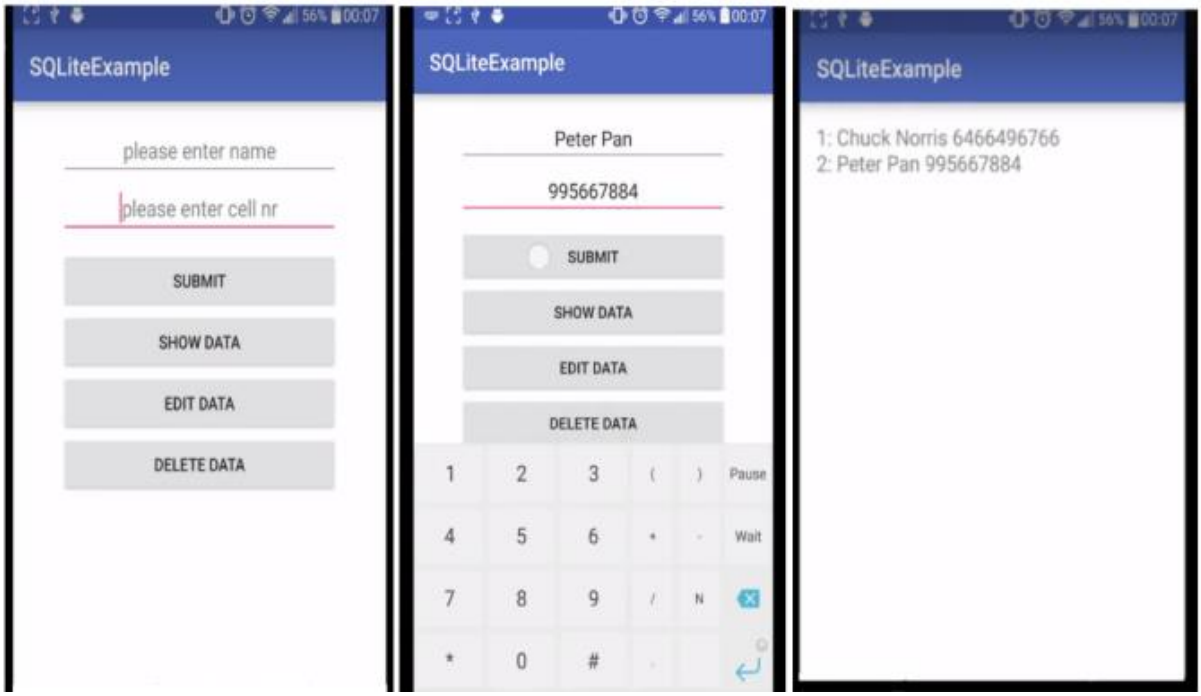
EditActivity.java

```
package com.example.ninthprogram;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
import android.content.Intent;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteStatement;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class EditActivity extends AppCompatActivity {
    EditText ed1,ed2,ed3,ed4;
    Button b1,b2,b3;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_edit);
        ed1 = findViewById(R.id.name);
        ed2 = findViewById(R.id.course);
        ed3 = findViewById(R.id.fee);
        ed4 = findViewById(R.id.id);
```

```
        b1 = findViewById(R.id.bt1);
        b2 = findViewById(R.id.bt2);
        b3 = findViewById(R.id.bt3);
        Intent i = getIntent();
        String t1 = i.getStringExtra("id").toString();
        String t2 = i.getStringExtra("name").toString();
        String t3 = i.getStringExtra("course").toString();
        String t4 = i.getStringExtra("fee").toString();
        ed4.setText(t1);
        ed1.setText(t2);
        ed2.setText(t3);
        ed3.setText(t4);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try
                {
                    String id = ed4.getText().toString();
                    SQLiteDatabase db =

openOrCreateDatabase("SliteDb",Context.MODE_PRIVATE,null);
                    String sql = "delete from records where id = " + id +
"";
                    SQLiteStatement statement = db.compileStatement(sql);
                    statement.execute();
                    Toast.makeText(EditActivity.this,"Record
                            Deleted",Toast.LENGTH_LONG).show();
                            ed1.setText("");
                    ed2.setText("");
                    ed3.setText("");
                    ed1.requestFocus();
                }
                catch (Exception ex)
                {
                    Toast.makeText(EditActivity.this,"Record
Fail",Toast.LENGTH_LONG).show();
                }
            }
        });
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i = new
                        Intent(getApplicationContext(),ViewActivity.class);
                startActivity(i);
            }
        });
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try {
                    String name = ed1.getText().toString();
                    String course = ed2.getText().toString();
                    String fee = ed3.getText().toString();
                    String id = ed4.getText().toString();
                    SQLiteDatabase db = openOrCreateDatabase("SliteDb",
                            Context.MODE_PRIVATE, null);
                    String sql = "update records set name = '" + name +
"',course='" +
                            course + "',fee='" + fee + "' where id= " + id
+ "";
```

```
                    SQLiteStatement statement = db.compileStatement(sql);
                    statement.execute();
                    Toast.makeText(EditActivity.this, "Record Updateddd",
                            Toast.LENGTH_LONG).show();
                    ed1.setText("");
                    ed2.setText("");
                    ed3.setText("");
                    ed1.requestFocus();
                } catch (Exception ex) {
                    Toast.makeText(EditActivity.this, "Record Fail",
                            Toast.LENGTH_LONG).show();
                }
            }
        });
    }
}
```

OUTPUT



v

10. Create an Application to send SMS and Receive SMS.

AndroidManifest.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-feature
        android:name="android.hardware.telephony"
        android:required="false" />
    <uses-permission android:name="android.permission.SEND_SMS"/>
    <uses-permission android:name="android.permission.RECEIVE_SMS"/>
    <uses-permission android:name="android.permission.READ_SMS"/>
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.MyApplication"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER"
                    />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    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"
    android:background="@color/white"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/editTextPhoneNumber"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter phone number"
        android:layout_margin="16dp"/>
    <EditText
        android:id="@+id/editTextMessage"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter message"
        android:layout_below="@id/editTextPhoneNumber"
        android:layout_margin="16dp"/>
```

```
    <Button
        android:id="@+id/buttonSend"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send"
        android:layout_below="@id/editTextMessage"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="16dp"
        android:onClick="sendMessage"
        tools:ignore="UsingOnClickInXml" />
    <TextView
        android:id="@+id/textViewReceivedMessages"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/buttonSend"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:layout_marginBottom="16dp"
        android:textColor="@color/black" />
</RelativeLayout>
```

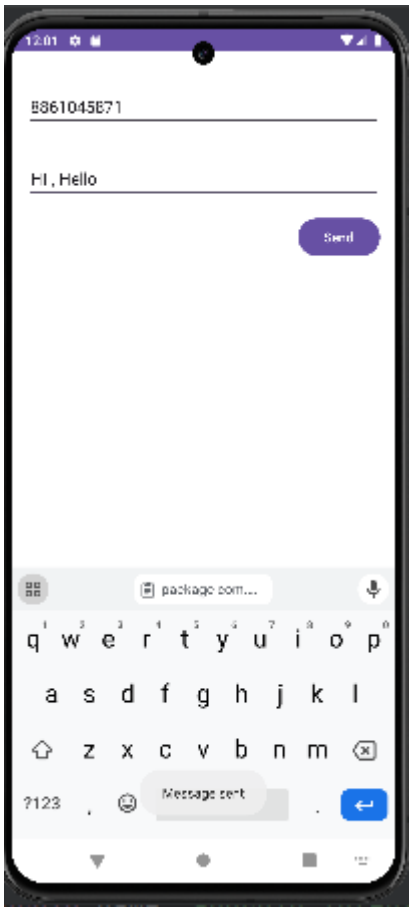
MainActivity.Java :

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
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.telephony.SmsMessage;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import android.Manifest;
public class MainActivity extends AppCompatActivity {
    private static final int SMS_PERMISSION_CODE = 101;
    private EditText editTextPhoneNumber;
    private EditText editTextMessage;
    private TextView textViewReceivedMessages;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editTextPhoneNumber = findViewById(R.id.editTextPhoneNumber);
        editTextMessage = findViewById(R.id.editTextMessage);
        textViewReceivedMessages =
                findViewById(R.id.textViewReceivedMessages);
        // Request SMS permissions if not granted
        if (!checkSMSPermission()) {
            requestSMSPermission();
        }
        // Register SMS receiver
```

```
        IntentFilter intentFilter = new IntentFilter();
        intentFilter.addAction("android.provider.Telephony.SMS_RECEIVED");
        registerReceiver(smsReceiver, intentFilter);
    }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        unregisterReceiver(smsReceiver);
    }
    // Button click listener for sending SMS
    public void sendMessage(View view) {
        String phoneNumber =
                editTextPhoneNumber.getText().toString().trim();
        String message = editTextMessage.getText().toString();
        if (phoneNumber.isEmpty()) {
            Toast.makeText(this, "Please enter a valid phone number",
                    Toast.LENGTH_SHORT).show();
            return;
        }
        try {
            SmsManager smsManager = SmsManager.getDefault();
            smsManager.sendTextMessage(phoneNumber, null, message, null,
null);
            Toast.makeText(this, "Message sent",
Toast.LENGTH_SHORT).show();
        } catch (IllegalArgumentException e) {
            Toast.makeText(this, "Invalid phone number format",
                    Toast.LENGTH_SHORT).show();
        } catch (Exception e) {
            Toast.makeText(this, "Failed to send message",
                    Toast.LENGTH_SHORT).show();
            e.printStackTrace();
        }
    }
// Check if SMS permission is granted
private boolean checkSMSPermission() {
    return ContextCompat.checkSelfPermission(this,
            Manifest.permission.SEND_SMS) ==
PackageManager.PERMISSION_GRANTED;
}
    // Request SMS permission
    private void requestSMSPermission() {
        ActivityCompat.requestPermissions(this, new
                String[]{Manifest.permission.SEND_SMS},
SMS_PERMISSION_CODE);
    }
    // SMS receiver
    private final BroadcastReceiver smsReceiver = new BroadcastReceiver() {
        @Override
        public void onReceive(Context context, Intent intent) {
            Bundle bundle = intent.getExtras();
            if (bundle != null) {
                Object[] pdus = (Object[]) bundle.get("pdus");
                if (pdus != null) {
                    for (Object pdu : pdus) {
                        SmsMessage smsMessage =
SmsMessage.createFromPdu((byte[]) pdu);
                        String senderPhoneNumber =
smsMessage.getDisplayOriginatingAddress();
                        String messageBody = smsMessage.getMessageBody();
                        textViewReceivedMessages.append("From: " +
```

```
                                senderPhoneNumber + "\n");
                        textViewReceivedMessages.append("Message: " +
                                messageBody + "\n\n");
                    }
                }
            }
        }
    };
}
```

OUTPUT



11. Create an Application to send an E-mail

activity_main.xml :

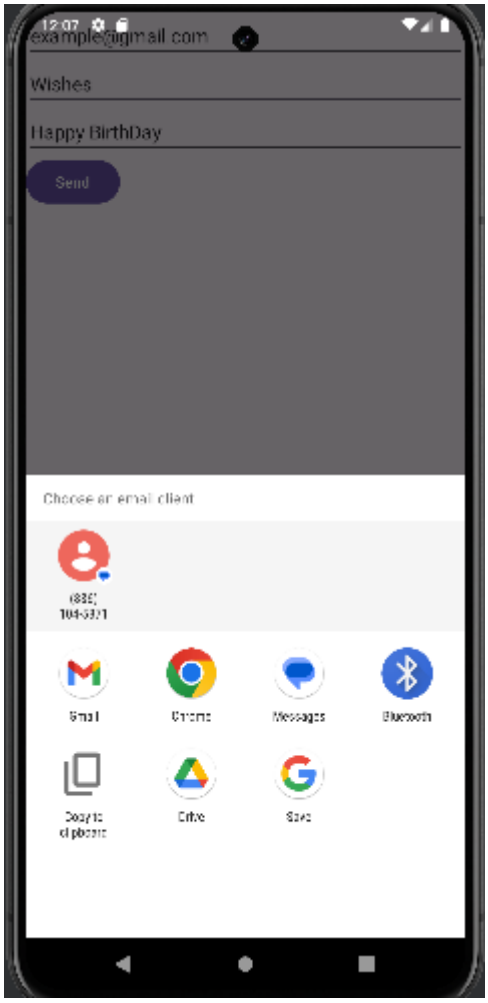
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/editTextTo"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="To"/>
    <EditText
        android:id="@+id/editTextSubject"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextTo"
        android:hint="Subject"/>
    <EditText
        android:id="@+id/editTextMessage"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextSubject"
        android:hint="Message"/>
    <Button
        android:id="@+id/buttonSend"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextMessage"
        android:text="Send"/>
</RelativeLayout>
```

MainActivity.Java :

```
package com.example.myapplication;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    EditText editTextTo, editTextSubject, editTextMessage;
    Button buttonSend;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
```

```
        setContentView(R.layout.activity_main);
        editTextTo = findViewById(R.id.editTextTo);
        editTextSubject = findViewById(R.id.editTextSubject);
        editTextMessage = findViewById(R.id.editTextMessage);
        buttonSend = findViewById(R.id.buttonSend);
        buttonSend.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                sendEmail();
            }
        });
    }
    @SuppressLint("QueryPermissionsNeeded")
    private void sendEmail() {
        String to = editTextTo.getText().toString().trim();
        String subject = editTextSubject.getText().toString().trim();
        String message = editTextMessage.getText().toString().trim();
        Intent intent = new Intent(Intent.ACTION_SEND);
        intent.setType("text/plain");
        intent.putExtra(Intent.EXTRA_EMAIL, new String[]{to});
        intent.putExtra(Intent.EXTRA_SUBJECT, subject);
        intent.putExtra(Intent.EXTRA_TEXT, message);
        if (intent.resolveActivity(getPackageManager()) != null) {
            startActivity(Intent.createChooser(intent, "Choose an email
client"));
        }
    }
}
```

OUTPUT


example@gmail.com
Wishes
Happy BirthDay
Send
Choose an email client
Gmail
Chrome
Messages
Bluetooth
Drive

12. Display Map based on the Current Location.

activity_main.xml :

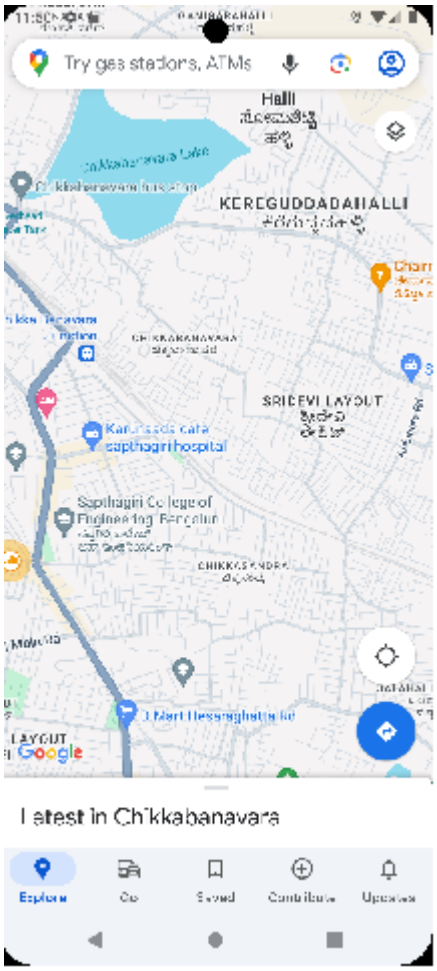
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"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

    <Button
        android:id="@+id/btn_showMap"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Show Map"
        android:onClick="onClickShowMap"/>

</LinearLayout>
```

MainActivity.Java :

```
package com.example.myapplication;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import android.app.Activity;
import android.content.Intent;
import android.net.Uri;
import android.view.View;


public class MainActivity extends Activity{

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

    }



    public void onClickShowMap(View view)
    {
        Intent i=new
Intent(android.content.Intent.ACTION_VIEW,Uri.parse("geo:13.0707984,77.5106
61"));
        startActivity(i);
        i.setPackage("com.google.android.apps.maps");
```

```
        }
}
```

OUTPUT


Try gas stations, ATMs
KEREGUDDADAHALLI
SRIDEVI LAYOUT
Sapthagiri hospital
Sapthagiri College of Engineering, Bengaluru
Latest in Chikkabanavara
Explore
Go
Saved
Contribute
Updates

13. Create a sample Application with login module(check username and password) On successful login change Textview “Login Successful”. On login fail alert using Toast “Login fail”.

activity_main.xml :

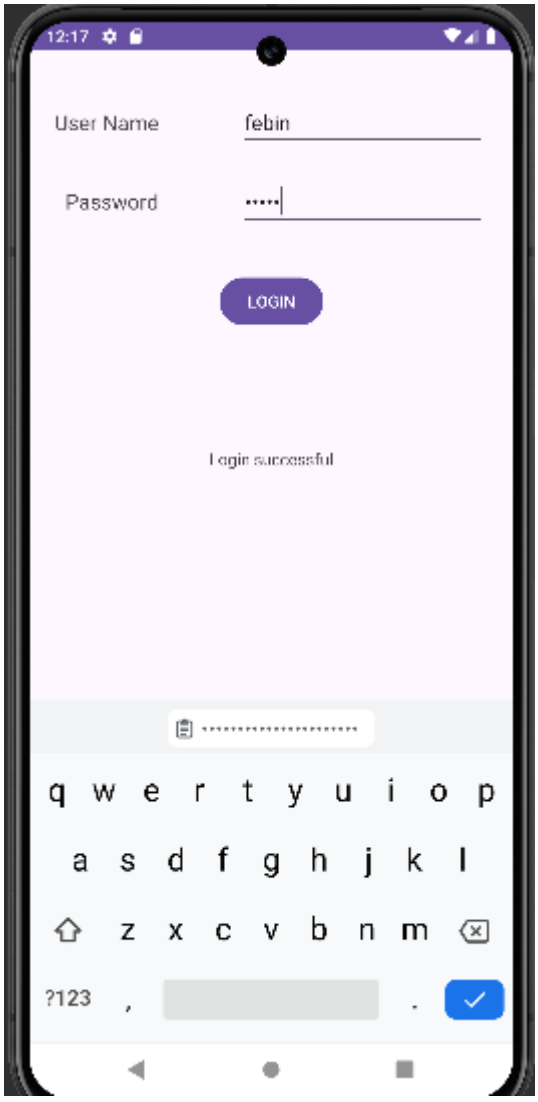
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    >
    <TextView
        android:id="@+id/tvName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout marginStart="21dp"
        android:layout_marginTop="49dp"
        android:text="User Name"
        android:textSize="18sp" />
    <EditText
        android:id="@+id/etUsername"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/tvName"
        android:layout_alignBottom="@+id/tvName"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="23dp"
        android:ems="10"
        android:inputType="textPersonName" />
    <TextView
        android:id="@+id/tvPass"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignEnd="@+id/tvName"
        android:layout_below="@+id/etUsername"
        android:layout_marginTop="32dp"
        android:text="Password"
        android:textSize="18sp" />
    <EditText
        android:id="@+id/etPassword"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/tvPass"
        android:layout_alignBottom="@+id/tvPass"
        android:layout_alignStart="@+id/etUsername"
        android:ems="10"
        android:inputType="textPassword" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/etPassword"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="38dp"
        android:text="LOGIN"
```

```
        />
    <TextView
        android:id="@+id/tvLoginStatus"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/button"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="100sp"
        />
</RelativeLayout>
```

MainActivity.Java :

```
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;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    EditText etUsername, etPassword;
    Button btnStatus;
    TextView tvLoginStatus;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        etUsername = (EditText) findViewById(R.id.etUsername);
        etPassword = (EditText) findViewById(R.id.etPassword);
        btnStatus = (Button) findViewById(R.id.button);
        tvLoginStatus = (TextView) findViewById(R.id.tvLoginStatus);
        btnStatus.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                check();
            }
        });
    }
    public void check(){
        if(etUsername.getText().toString().equals("tonystark") &&
                etPassword.getText().toString().equals("loveyou3000")){
            tvLoginStatus.setText("Login successful");
        }else{
            Toast.makeText(this, "Login fail", Toast.LENGTH_LONG).show();
        }
    }
}
```

OUTPUT


12:17
User Name
febin
Password
LOGIN
Login successful
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123

14. Learn to Deploy Android Application.

1. Prepare Your Development Environment:

Install Android Studio: This is the official Integrated Development Environment (IDE) for Android development.

Set up SDKs and Tools: Ensure you have the Android SDK (Software Development Kit) and necessary tools installed via Android Studio.

2. Develop Your Android Application:

Create a New Project: Use Android Studio to create a new Android project or open an existing one.

Write Your Code: Develop your application using Java or Kotlin (officially supported languages for Android development).

3. Test Your Application:

Emulator: Use the Android Emulator in Android Studio to test your application on virtual devices with different Android versions and screen sizes.

Physical Device: Test your application on a physical Android device to ensure compatibility and performance.

4. Prepare Your Application for Deployment:

Set Build Configurations: Configure your build types (debug, release) and build flavors if necessary.

Optimize and Clean Code: Ensure your code is optimized, and unnecessary dependencies are removed.

5. Generate a Signed APK:

Create a Keystore: Generate or obtain a keystore file to sign your application. This file is crucial for updating your app later.

Build Signed APK: Use Android Studio to generate a signed APK (Android Package) using the keystore you created.

6. Deploy to Google Play Store (or other distribution platforms):

Create Developer Account: Sign up for a Google Play Developer account if you plan to distribute your app through Google Play.

Prepare Store Listing: Write descriptions, upload screenshots, and set pricing and distribution options.

Upload APK: Upload your signed APK to Google Play Console.

Release Your App: Follow the steps on Google Play Console to release your application to users.