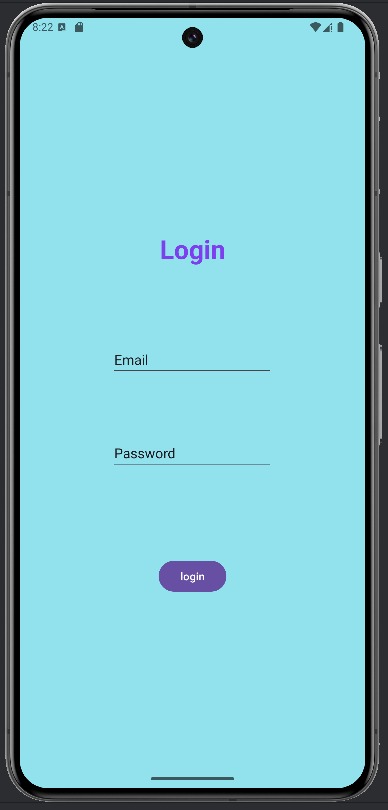
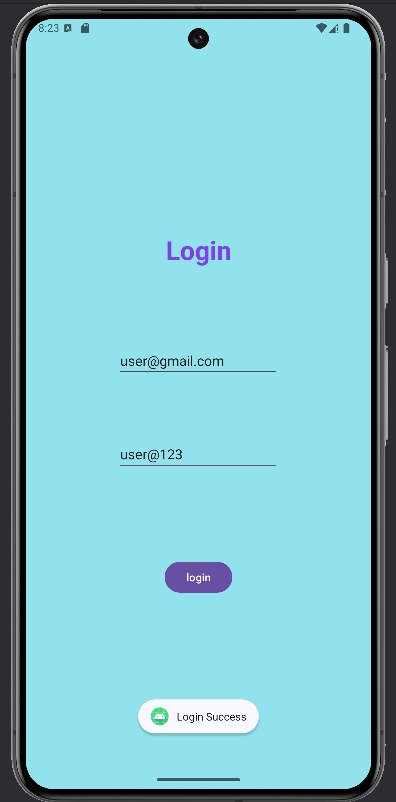
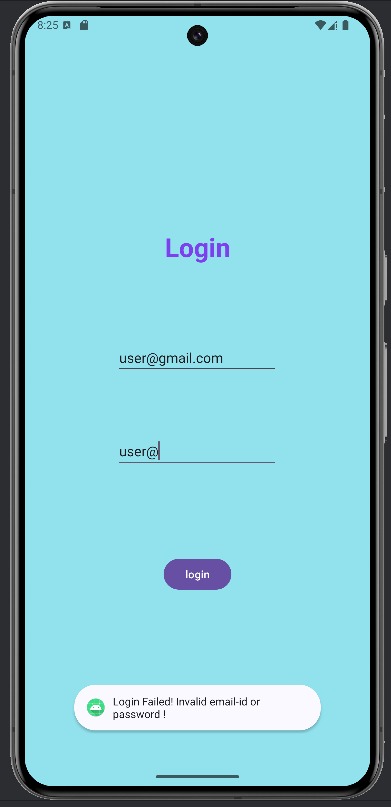
**OUTPUT**

****

**Aim : - Design a Login Form with username and password using LinearLayout and toast valid credentials.**

**1.** **LOGIN FORM**

**SOURCE 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:id="@+id/main"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:background="#91E2ED"

tools:context=".MainActivity">

<TextView

android:id="@+id/text"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:foregroundGravity="center"

android:gravity="center"

android:text="Login"

android:textColor="#7E3FEF"

android:textSize="34sp"

android:textStyle="bold"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.279" />

<EditText

android:id="@+id/email"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="text"

android:text="Email"

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="0.438" />

<EditText

android:id="@+id/password"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="text"

android:text="Password"

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="0.572" />

<Button

android:id="@+id/login"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="login"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.749" />

</androidx.constraintlayout.widget.ConstraintLayout>

**MainActvity.Java**

package com.example.newlogin;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

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 {

EditText email,password;

Button login;

String useremail,userpassword;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

EdgeToEdge.enable(this);

setContentView(R.layout.activity\_main);

email = findViewById(R.id.email);

password = findViewById(R.id.password);

login = findViewById(R.id.login);

login.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

useremail = email.getText().toString();

userpassword = password.getText().toString();

if (useremail.equals("user@gmail.com") && userpassword.equals("user@123"))

{

Toast.makeText(MainActivity.this, "Login Success", Toast.LENGTH\_SHORT).show();

}

else

{

Toast.makeText(MainActivity.this, "Login Failed! Invalid email-id or password !", Toast.LENGTH\_SHORT).show();

}

}

});

ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {

Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());

v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);

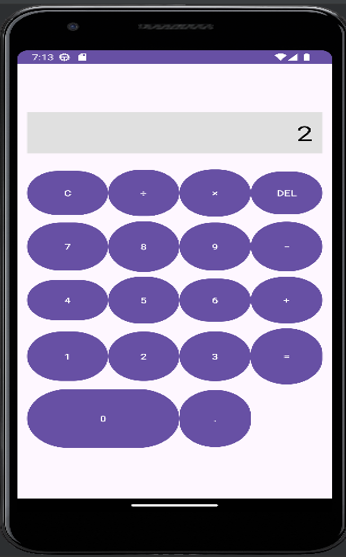
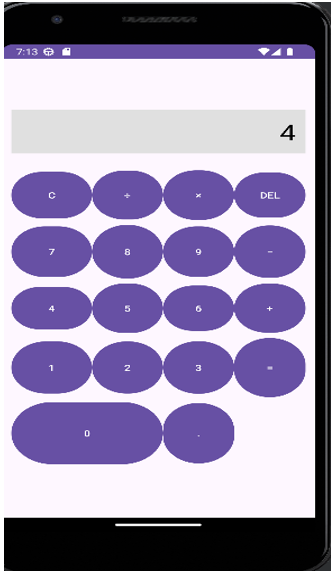
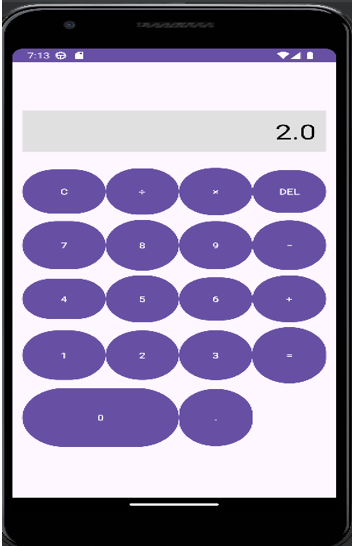
return insets;

});

}

}

**OUTPUT**



**Aim : Implementing basic arithmetic operations of a simple calculator**

**2.** **SIMPLE CALCULATOR**

**SOURCE CODE**

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="12dp"

android:gravity="center">

<!-- Display area for the calculator -->

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:background="#E0E0E0"

android:padding="12dp"

android:gravity="end">

<TextView

android:id="@+id/display"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="0"

android:textSize="36sp"

android:textColor="#000000" />

</LinearLayout>

<!-- Button layout using GridLayout -->

<GridLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginTop="24dp"

android:columnCount="4"

android:rowCount="5"

android:orientation="horizontal">

<!-- First row: Clear, Divide, Multiply, Delete -->

<Button

android:id="@+id/btn\_clear"

android:layout\_width="0dp"

android:layout\_height="85dp"

android:layout\_columnWeight="1"

android:text="C" />

<Button

android:id="@+id/btn\_divide"

android:layout\_width="0dp"

android:layout\_height="89dp"

android:layout\_columnWeight="1"

android:text="÷" />

<Button

android:id="@+id/btn\_multiply"

android:layout\_width="0dp"

android:layout\_height="90dp"

android:layout\_columnWeight="1"

android:text="×" />

<Button

android:id="@+id/btn\_delete"

android:layout\_width="0dp"

android:layout\_height="83dp"

android:layout\_columnWeight="1"

android:text="DEL" />

<!-- Second row: 7, 8, 9, Subtract -->

<Button

android:id="@+id/btn\_7"

android:layout\_width="0dp"

android:layout\_height="92dp"

android:layout\_columnWeight="1"

android:text="7" />

<Button

android:id="@+id/btn\_8"

android:layout\_width="0dp"

android:layout\_height="97dp"

android:layout\_columnWeight="1"

android:text="8" />

<Button

android:id="@+id/btn\_9"

android:layout\_width="0dp"

android:layout\_height="92dp"

android:layout\_columnWeight="1"

android:text="9" />

<Button

android:id="@+id/btn\_subtract"

android:layout\_width="0dp"

android:layout\_height="95dp"

android:layout\_columnWeight="1"

android:text="−" />

<!-- Third row: 4, 5, 6, Add -->

<Button

android:id="@+id/btn\_4"

android:layout\_width="12dp"

android:layout\_height="78dp"

android:layout\_columnWeight="1"

android:text="4" />

<Button

android:id="@+id/btn\_5"

android:layout\_width="0dp"

android:layout\_height="90dp"

android:layout\_columnWeight="1"

android:text="5" />

<Button

android:id="@+id/btn\_6"

android:layout\_width="0dp"

android:layout\_height="83dp"

android:layout\_columnWeight="1"

android:text="6" />

<Button

android:id="@+id/btn\_add"

android:layout\_width="0dp"

android:layout\_height="89dp"

android:layout\_columnWeight="1"

android:text="+" />

<!-- Fourth row: 1, 2, 3, Equals -->

<Button

android:id="@+id/btn\_1"

android:layout\_width="0dp"

android:layout\_height="94dp"

android:layout\_columnWeight="1"

android:text="1" />

<Button

android:id="@+id/btn\_2"

android:layout\_width="0dp"

android:layout\_height="94dp"

android:layout\_columnWeight="1"

android:text="2" />

<Button

android:id="@+id/btn\_3"

android:layout\_width="0dp"

android:layout\_height="95dp"

android:layout\_columnWeight="1"

android:text="3" />

<Button

android:id="@+id/btn\_equals"

android:layout\_width="0dp"

android:layout\_height="106dp"

android:layout\_columnWeight="1"

android:text="=" />

<!-- Fifth row: 0, Dot -->

<Button

android:id="@+id/btn\_0"

android:layout\_width="0dp"

android:layout\_height="111dp"

android:layout\_columnSpan="2"

android:layout\_columnWeight="2"

android:text="0" />

<Button

android:id="@+id/btn\_dot"

android:layout\_width="0dp"

android:layout\_height="108dp"

android:layout\_columnWeight="1"

android:text="." />

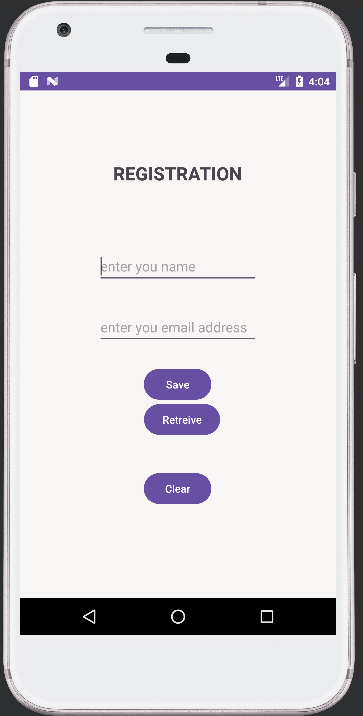
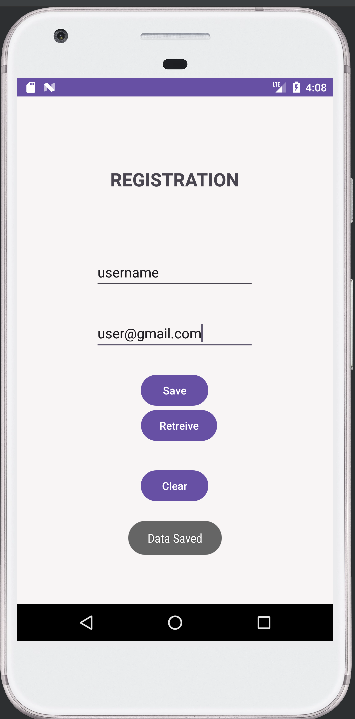
</GridLayout>

</LinearLayout>

**MainActivity.Java**

package com.example.simplecalculator;import android.os.Bundle;import android.view.View;import android.widget.Button;import android.widget.TextView;import androidx.appcompat.app.AppCompatActivity;public class MainActivity extends AppCompatActivity { private TextView display; private StringBuilder input; // To store the user input private double valueOne = Double.NaN; // First operand private double valueTwo; // Second operand private char currentAction; // To store the current operator @Override protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main); display = findViewById(R.id.display); input = new StringBuilder(); // Set listeners for number buttons (0-9 and dot) setNumberButtonListeners(); // Set listeners for operation buttons setOperationButtonListeners(); // Set listener for the equals button findViewById(R.id.btn\_equals).setOnClickListener(new View.OnClickListener() { @Override public void onClick(View v) { if (!Double.isNaN(valueOne)) { try { valueTwo = Double.parseDouble(input.toString()); performCalculation(); display.setText(String.valueOf(valueOne)); input.setLength(0); // Reset the input } catch (NumberFormatException e) { display.setText("Error"); } } } }); // Set listener for the clear button findViewById(R.id.btn\_clear).setOnClickListener(new View.OnClickListener() { @Override public void onClick(View v) { input.setLength(0); valueOne = Double.NaN; valueTwo = Double.NaN; display.setText("0"); } }); // Set listener for the delete button findViewById(R.id.btn\_delete).setOnClickListener(new View.OnClickListener() { @Override public void onClick(View v) { if (input.length() > 0) { input.deleteCharAt(input.length() - 1); display.setText(input.toString()); } } }); } private void setNumberButtonListeners() { View.OnClickListener listener = new View.OnClickListener() { @Override public void onClick(View v) { Button button = (Button) v; input.append(button.getText().toString()); display.setText(input.toString()); } }; findViewById(R.id.btn\_0).setOnClickListener(listener); findViewById(R.id.btn\_1).setOnClickListener(listener); findViewById(R.id.btn\_2).setOnClickListener(listener); findViewById(R.id.btn\_3).setOnClickListener(listener); findViewById(R.id.btn\_4).setOnClickListener(listener); findViewById(R.id.btn\_5).setOnClickListener(listener); findViewById(R.id.btn\_6).setOnClickListener(listener); findViewById(R.id.btn\_7).setOnClickListener(listener); findViewById(R.id.btn\_8).setOnClickListener(listener); findViewById(R.id.btn\_9).setOnClickListener(listener); findViewById(R.id.btn\_dot).setOnClickListener(listener); } private void setOperationButtonListeners() { findViewById(R.id.btn\_add).setOnClickListener(new OperationClickListener('+')); findViewById(R.id.btn\_subtract).setOnClickListener(new OperationClickListener('-')); findViewById(R.id.btn\_multiply).setOnClickListener(new OperationClickListener('\*')); findViewById(R.id.btn\_divide).setOnClickListener(new OperationClickListener('/')); } private class OperationClickListener implements View.OnClickListener { private char operation; public OperationClickListener(char operation) { this.operation = operation; } @Override public void onClick(View v) { if (input.length() > 0) { try { valueOne = Double.parseDouble(input.toString()); currentAction = operation; input.setLength(0); // Clear the input for the next number } catch (NumberFormatException e) { display.setText("Error"); } } } } private void performCalculation() { switch (currentAction) { case '+': valueOne = valueOne + valueTwo; break; case '-': valueOne = valueOne - valueTwo; break; case '\*': valueOne = valueOne \* valueTwo; break; case '/': if (valueTwo != 0) { valueOne = valueOne / valueTwo; } else { display.setText("Error"); // Handle division by zero valueOne = Double.NaN; } break; } }}

**OUTPUT**

****

**Aim : Design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences.**

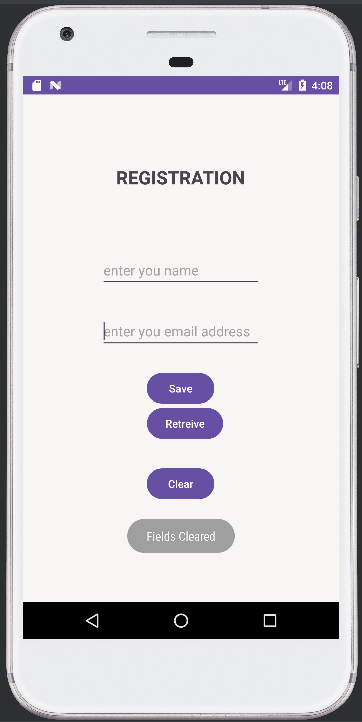
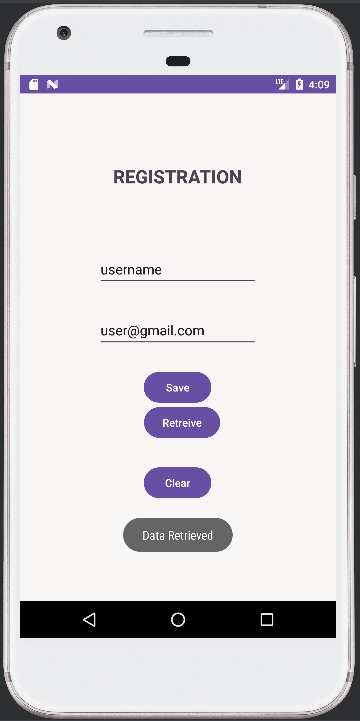
**3. INTENTS AND SHAREDPREFERENCES**

**SOURCE 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:id="@+id/main" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:background="#F8F5F5" tools:context=".MainActivity"> <TextView android:id="@+id/textView" android:layout\_width="402dp" android:layout\_height="119dp" android:gravity="center" android:text="REGISTRATION" android:textSize="24sp" android:textStyle="bold" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.444" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.089" /> <EditText android:id="@+id/et" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:ems="10" android:hint="enter you name" android:inputType="text" android:text="" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.497" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toBottomOf="@+id/textView" app:layout\_constraintVertical\_bias="0.087" />

**OUTPUT**

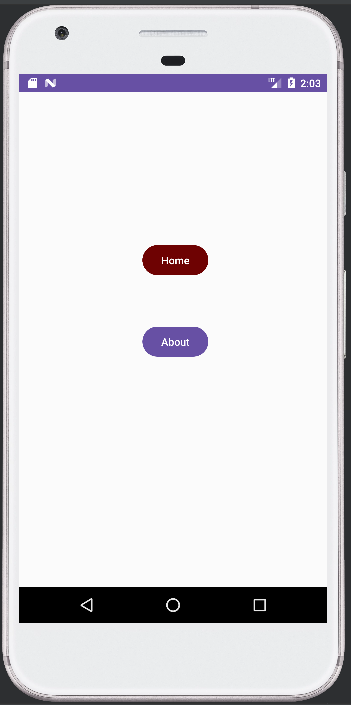
****

<EditText android:id="@+id/et2" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:ems="10" android:hint="enter you email address" android:inputType="text" android:text="" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="@+id/et" app:layout\_constraintHorizontal\_bias="0.0" app:layout\_constraintStart\_toStartOf="@+id/et" app:layout\_constraintTop\_toBottomOf="@+id/et" app:layout\_constraintVertical\_bias="0.094" /> <Button android:id="@+id/b1" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Save" android:onClick="Save" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="@+id/et2" app:layout\_constraintStart\_toStartOf="@+id/et2" app:layout\_constraintTop\_toBottomOf="@+id/et2" app:layout\_constraintVertical\_bias="0.098" /> <Button android:id="@+id/b2" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginBottom="208dp" android:text="Retreive" android:onClick="Get" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.517" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toBottomOf="@+id/button" app:layout\_constraintVertical\_bias="0.226" /> <Button android:id="@+id/b3" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Clear" android:onClick="clear" 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/b1" app:layout\_constraintVertical\_bias="0.37" /></androidx.constraintlayout.widget.ConstraintLayout>

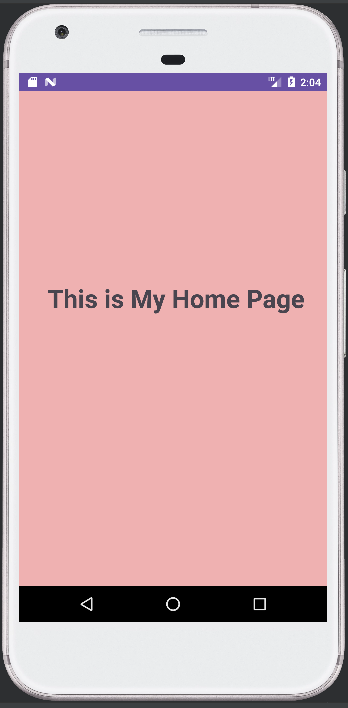
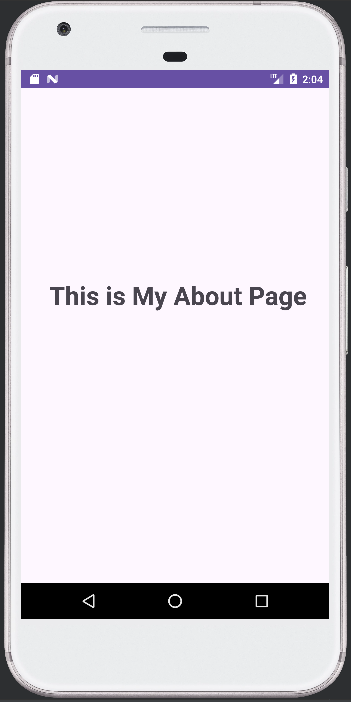
**Activity\_Main.java**

package com.example.testapp;import android.content.Context;import android.content.SharedPreferences;import android.os.Bundle;import android.view.View;import android.widget.TextView;import android.widget.Toast;import androidx.appcompat.app.AppCompatActivity;public class MainActivity extends AppCompatActivity { SharedPreferences sharedpreferences; TextView name, email; public static final String mypreference = "mypref"; public static final String Name = "nameKey"; public static final String Email = "emailKey"; @Override protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main); name = findViewById(R.id.et); email = findViewById(R.id.et2); sharedpreferences = getSharedPreferences(mypreference, Context.MODE\_PRIVATE); // Load saved data on app start if (sharedpreferences.contains(Name)) { name.setText(sharedpreferences.getString(Name, "")); } if (sharedpreferences.contains(Email)) { email.setText(sharedpreferences.getString(Email, "")); } } public void Save(View view) { String n = name.getText().toString(); String e = email.getText().toString(); SharedPreferences.Editor editor = sharedpreferences.edit(); editor.putString(Name, n); editor.putString(Email, e); editor.apply(); Toast.makeText(this, "Data Saved", Toast.LENGTH\_SHORT).show(); } public void clear(View view) { name.setText(""); email.setText(""); Toast.makeText(this, "Fields Cleared", Toast.LENGTH\_SHORT).show(); } public void Get(View view) { if (sharedpreferences.contains(Name)) { name.setText(sharedpreferences.getString(Name, "")); } if (sharedpreferences.contains(Email)) { email.setText(sharedpreferences.getString(Email, "")); } Toast.makeText(this, "Data Retrieved", Toast.LENGTH\_SHORT).show(); }}

**sdfv**



**OUTPUT**



**Aim : Implement Intent to navigate between multiple activities.**

**4.** **IMPLEMENT INTENT**

**SOURCE 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"  
 android:background="#FBFBFB"  
 tools:context=".MainActivity">  
  
  
 <Button  
 android:id="@+id/home"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:backgroundTint="#6E0202"  
 android:text="Home"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.51"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.327" />  
  
 <Button  
 android:id="@+id/about"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="About"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="@+id/home"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="@+id/home"  
 app:layout\_constraintTop\_toBottomOf="@+id/home"  
 app:layout\_constraintVertical\_bias="0.167" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_home\_page.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="#D9C8BB"  
 android:backgroundTint="#EFB1B1"  
 tools:context=".HomePage">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="387dp"  
 android:layout\_height="69dp"  
 android:gravity="center"  
 android:text="This is My Home Page"  
 android:textSize="34sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.666"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.409" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_about\_page.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=".AboutPage">  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="387dp"  
 android:layout\_height="69dp"  
 android:gravity="center"  
 android:text="This is My About Page"  
 android:textSize="34sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.666"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.409" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity.java**

package com.example.intentapp;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
public class MainActivity extends AppCompatActivity {  
 Button home, about;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 home = findViewById(R.id.*home*);  
 about = findViewById(R.id.*about*);  
  
 home.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(), HomePage.class);  
 startActivity(intent);  
 }  
 });  
  
 about.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(), AboutPage.class);  
 startActivity(intent);  
 }  
 });  
 }  
}

**HomePage.java**

package com.example.intentapp;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
  
public class HomePage extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_home\_page*);  
 }  
}

**AboutPage.java**

package com.example.intentapp;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
  
public class HomePage extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_home\_page*);  
 }  
}

**OUTPUT**

**Aim : Implement Options Menu to navigate to activities.**

**5.OPTIONS MENU**

**SOURCE CODE**

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:padding="12dp"  
 android:gravity="center">

<TextView  
 android:id="@+id/display"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text=""  
 android:textSize="36sp/>

</LinearLayout>

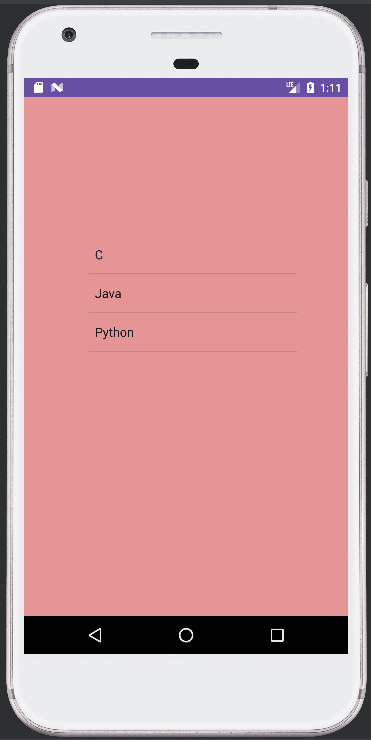
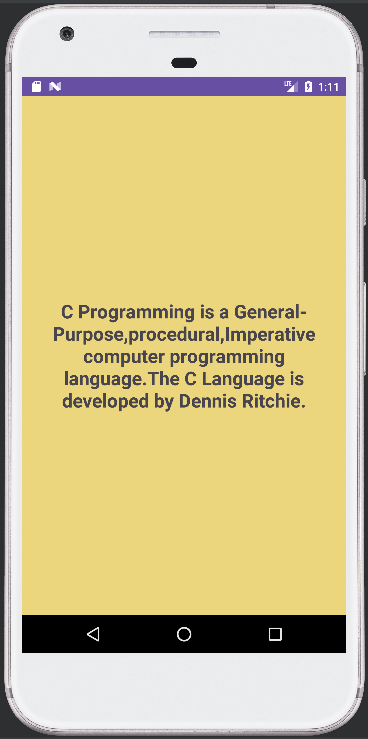
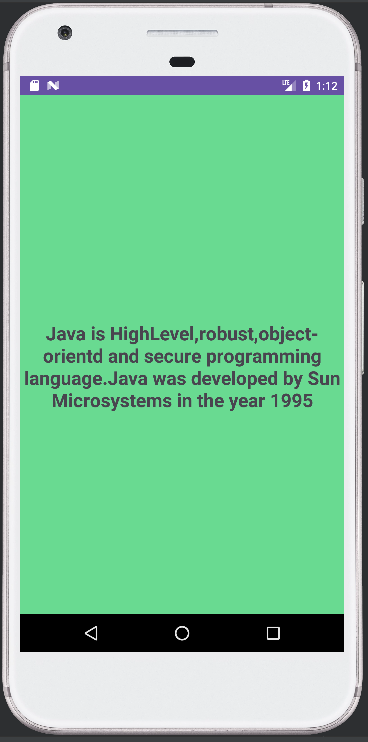
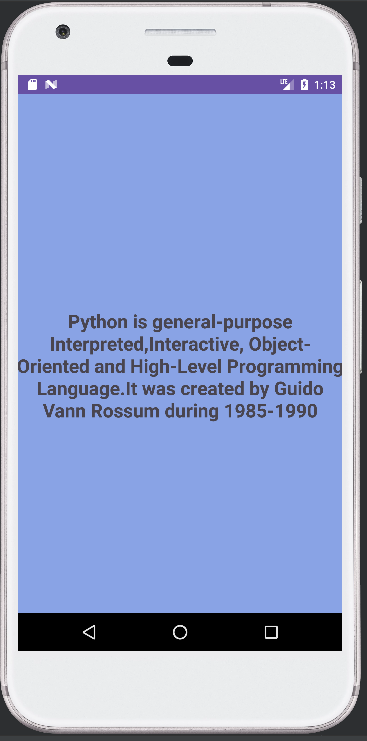
**menu\_main.xml**

<?xml version="1.0" encoding="utf-8"?>  
<menu xmlns:android="http://schemas.android.com/apk/res/android">  
 <item  
 android:id="@+id/menu\_item1"  
 android:title="Home" />  
 <item  
 android:id="@+id/menu\_item2"  
 android:title="About" />  
 <item  
 android:id="@+id/menu\_item3"  
 android:title="Contact" />  
</menu>

**Activity\_Main.java**

package com.example.testapp;  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.annotation.SuppressLint;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.Menu;  
import android.view.MenuInflater;  
import android.view.MenuItem;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 }  
  
 // Inflate the menu; this adds items to the action bar if it is present.  
 @Override  
 public boolean onCreateOptionsMenu(Menu menu) {  
 MenuInflater inflater = getMenuInflater();  
 inflater.inflate(R.menu.*menu\_main*, menu); // Inflate the menu XML file  
 return true;  
 }  
  
 // Handle menu item clicks  
 @SuppressLint("NonConstantResourceId")  
 @Override  
 public boolean onOptionsItemSelected(MenuItem item) {  
 int id = item.getItemId();  
  
 if (id == R.id.*menu\_item1*) {  
 startActivity(new Intent(MainActivity.this, Home.class));  
 return true;  
 } else if (id == R.id.*menu\_item2*) {  
 startActivity(new Intent(MainActivity.this, About.class));  
 return true;  
 } else if (id == R.id.*menu\_item3*) {  
 startActivity(new Intent(MainActivity.this, Contact.class));  
 return true;  
 }  
 return super.onOptionsItemSelected(item);  
 }  
 }

**OUTPUT**



**6.ARRAY ADAPTER WITH LISTVIEW**

**Aim : Develop an application that uses ArrayAdapter with ListView.**

**SOURCE 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:background="#E59595"  
 tools:context=".MainActivity">  
  
  
 <ListView  
 android:id="@+id/listview"  
 android:layout\_width="265dp"  
 android:layout\_height="383dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.561"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.637" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_clanguage.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:background="#ECD67D"  
 tools:context=".Clanguage">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="349dp"  
 android:layout\_height="377dp"  
 android:gravity="center"  
 android:text="C Programming is a General-Purpose,procedural,Imperative computer programming language.The C Language is developed by Dennis Ritchie."  
 android:textSize="24sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_javalanguage.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:background="#ECD67D"  
 tools:context=".Javalanguage">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="349dp"  
 android:layout\_height="377dp"  
 android:gravity="center"  
 android:text=" Java is HighLevel,robust,object-orientd and secure programming language.Java was developed by Sun Microsystems in the year 1995"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_pythonlanguage.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:background="#ECD67D"  
 tools:context=".Pythonlanguage">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="349dp"  
 android:layout\_height="377dp"  
 android:gravity="center"  
 android:text=" Java is HighLevel,robust,object-orientd and secure programming language.Java was developed by Sun Microsystems in the year 1995"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 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.listview\_programminglang;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.ListView;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

ListView listview;

String Language[] = {"C", "Java", "Python"};

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

listview = findViewById(R.id.listview);

ArrayAdapter<String> arr = new ArrayAdapter<>(this, androidx.appcompat.R.layout.support\_simple\_spinner\_dropdown\_item, Language);

listview.setAdapter(arr);

listview.setOnItemClickListener(new AdapterView.OnItemClickListener() {

@Override

public void onItemClick(AdapterView<?> adapterView, View view, int position, long id) {

if ( position == 0 ) {

//Intent intent = new Intent(getApplicationContext(), ClassName.class);

Intent intent = new Intent(getApplicationContext(), Clanguage.class);

startActivity(intent);

} else if ( position == 1) {

Intent intent = new Intent(getApplicationContext(), Javalanguage.class);

startActivity(intent);

} else if ( position == 2 ) {

Intent intent = new Intent(getApplicationContext(), Pythonlanguage.class);

startActivity(intent);

} else{

Toast.makeText(MainActivity.this, "", Toast.LENGTH\_LONG).show();//Nothing to show

}

}

});

}

}

**Clanguage.java**

package com.example.listview\_programminglang;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class Clanguage extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_clanguage);

}

}

**Javalanguage.java**

package com.example.listview\_programminglang;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class Clanguage extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_clanguage);

}

}

**Pythonlanguage.java**

package com.example.listview\_programminglang;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class Clanguage extends AppCompatActivity {

@Override

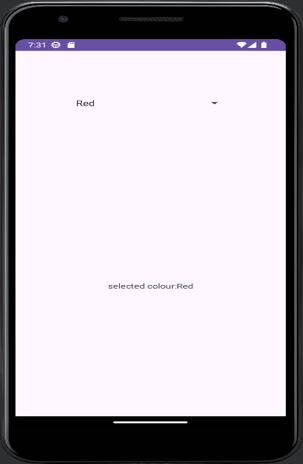
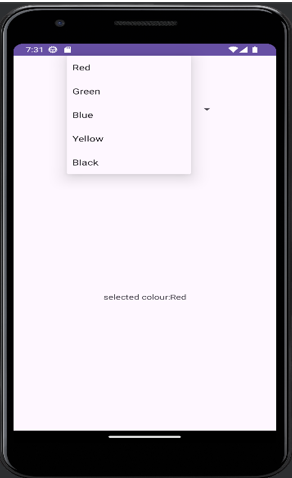
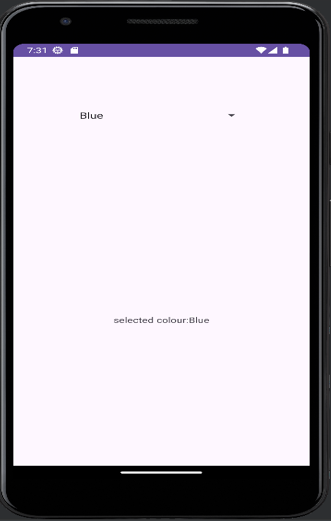
protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_clanguage);

}

}



**OUTPUT**

**Aim : Develop an application that implements Spinner component and perform event handling**

**7.IMPLEMENTS SPINNER COMPONENT**

**SOURCE CODE**

**activity\_main.xml**

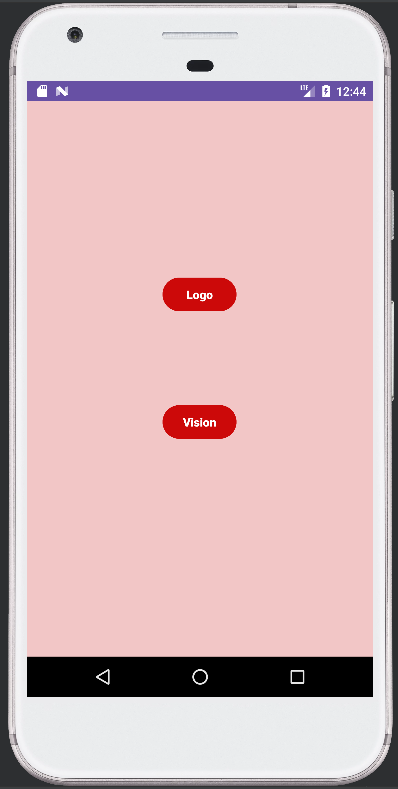
<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
  
 <Spinner  
 android:id="@+id/spinner2"  
 android:layout\_width="233dp"  
 android:layout\_height="217dp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="selected colour"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/spinner2" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**strings.xml**

<resources>  
 <string name="app\_name">spinerprg</string>  
 <!-- Spinner items -->  
 <string-array name="color\_options">  
 <item>Red</item>  
 <item>Green</item>  
 <item>Blue</item>  
 <item>Yellow</item>  
 <item>Black</item>  
 </string-array>  
  
</resources>

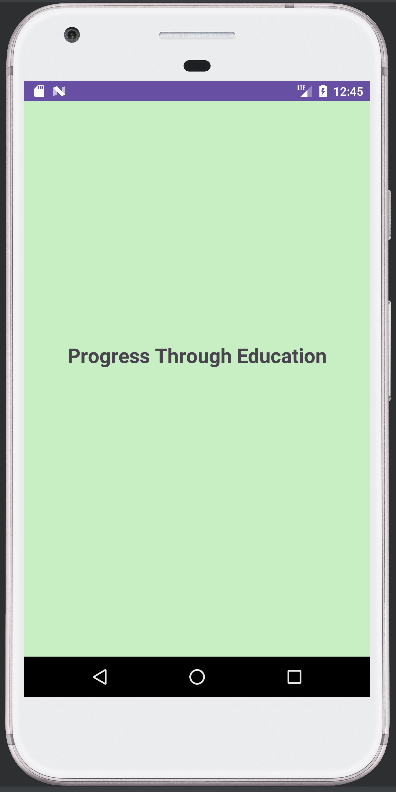
**MainActivity.java**

package com.example.spinnerprogram;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ArrayAdapter;  
import android.widget.Spinner;  
import android.widget.TextView;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
  
 private Spinner colorSpinner;  
 private TextView selectedColorText;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
  
 colorSpinner = findViewById(R.id.*spinner2*);  
 selectedColorText = findViewById(R.id.*textView2*);  
  
  
 ArrayAdapter<CharSequence> adapter = ArrayAdapter.*createFromResource*(this,  
 R.array.*color\_options*, android.R.layout.*simple\_spinner\_item*);  
  
  
 adapter.setDropDownViewResource(android.R.layout.*simple\_spinner\_dropdown\_item*);  
  
 colorSpinner.setAdapter(adapter);  
  
  
 colorSpinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {  
 @Override  
 public void onItemSelected(AdapterView<?> parent, View view, int position, long id) {  
  
 String selectedColor = parent.getItemAtPosition(position).toString();  
  
  
 selectedColorText.setText("selected colour:" + selectedColor);  
 }  
  
 @Override  
 public void onNothingSelected(AdapterView<?> parent) {  
  
 selectedColorText.setText("No color selected");  
 }  
 });  
 }  
}



**OUTPUT**





**Aim : Develop an Android app as per the following specifications:**

**9.LAUNCHER ACTIVITY**

**i)There should be three activities. The second activity must have the logo of our College. The Third activity must display the vision statement “Progress through education”.**

**ii) In the launcher activity, there should be two buttons with the labels “Logo” and “Vision”.**

**iii) When “Logo” button is tapped, the activity with logo must be opened. When “Vision” button is tapped, the activity with the vision statement must be opened.**

**SOURCE CODE**

**activity\_main.xml**

<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="#F2C6C6"  
 tools:context=".MainActivity">  
  
 <Button  
 android:id="@+id/vision"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:backgroundTint="#F6CC0909"  
 android:text="Logo"  
 android:textStyle="bold"  
 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="0.336" />  
  
 <Button  
 android:id="@+id/logo"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:backgroundTint="#F6CC0909"  
 android:text="Vision"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="@+id/campus"  
 app:layout\_constraintStart\_toStartOf="@+id/campus"  
 app:layout\_constraintTop\_toBottomOf="@+id/campus"  
 app:layout\_constraintVertical\_bias="0.289" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_logo.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="#C1EABC"  
 tools:context=".LogoActivity">  
  
 <ImageView  
 android:id="@+id/imageView"  
 android:layout\_width="406dp"  
 android:layout\_height="671dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.446"  
 app:srcCompat="@drawable/vidyalogo" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_vision.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="#C8EEC4"  
 tools:context=".VisionActivity">  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="391dp"  
 android:layout\_height="86dp"  
 android:gravity="center"  
 android:text="Progress Through Education"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.451" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**ActivityMain.java**

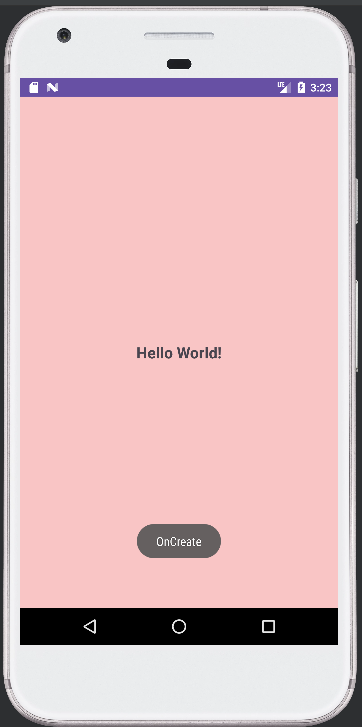
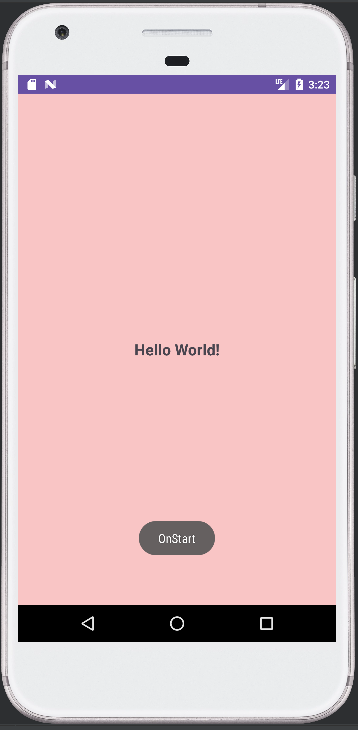
package com.example.examapp;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.annotation.SuppressLint;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
public class MainActivity extends AppCompatActivity {  
  
 Button logo, vision;  
 @SuppressLint("MissingInflatedId")  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 logo = findViewById(R.id.*campus*);  
 vision = findViewById(R.id.*login*);  
 logo.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(), LogoActivity.class);  
 startActivity(intent);  
 }  
 });  
  
 vision.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(getApplicationContext(), VisionActivity.class);  
 startActivity(intent);  
 }  
 });  
  
 }  
}

VisionActivity.java

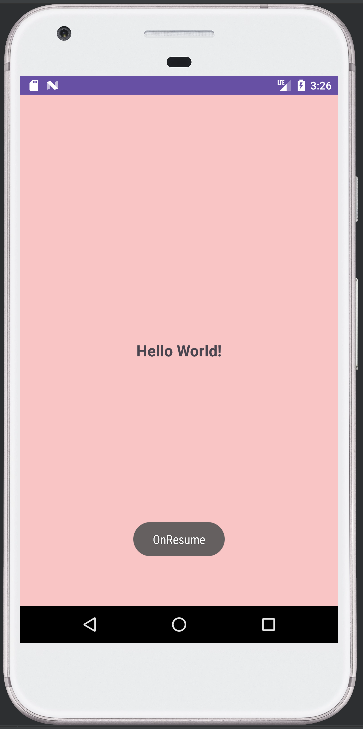
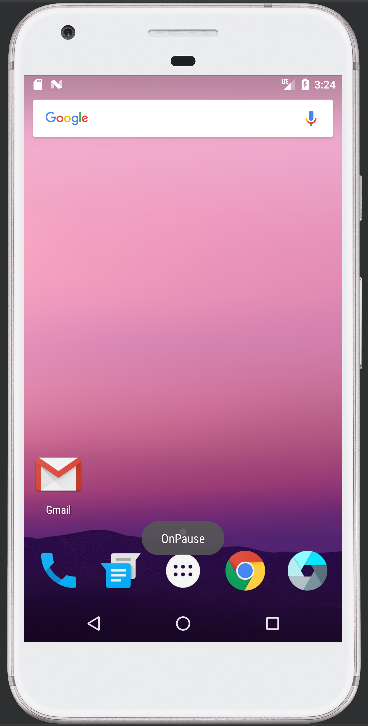
package com.example.examapp;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
  
public class CampusActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_campus*);  
 }  
}

LogoActivity.java

package com.example.examapp;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
  
public class CampusActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_campus*);  
 }  
}



**OUTPUT**



**Aim : Demonstrate Activity life cycle**

**10.ACTIVITY LIFE CYCLE**

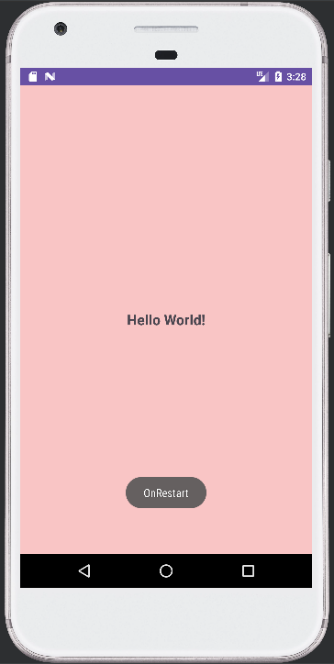
**SOURCE CODE**

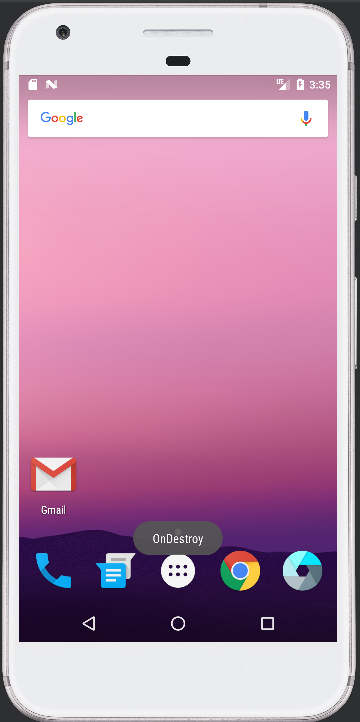
**activity\_main.xml**

<?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" android:background="#F9C5C5" tools:context=".MainActivity"> <TextView android:layout\_width="199dp" android:layout\_height="59dp" android:gravity="center" android:text="Hello World!" android:textSize="20sp" android:textStyle="bold" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" /></androidx.constraintlayout.widget.ConstraintLayout>

**Activity\_Main.java**

package com.example.lifecycleapp;import androidx.appcompat.app.AppCompatActivity;import android.os.Bundle;import android.util.Log;import android.widget.Toast;public class MainActivity extends AppCompatActivity { private static final String TAG = "ActivityLifecycle"; @Override protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main); Toast.makeText(this, "OnCreate", Toast.LENGTH\_LONG).show(); }





@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, "OnDestroy", 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(); }}