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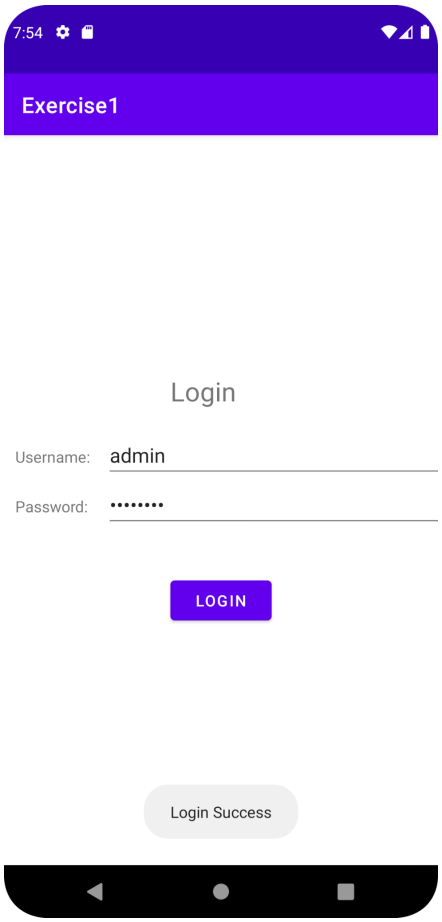
Output:


7:54
Exercise1
Login
Username:
admin
Password:
LOGIN
Login Success

Program: 1

Sep 21, 2023

Create a login page and implement form validation. (Use table layout).

Program

activity_main.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout 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:gravity="center"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TableRow
        android:layout_width="match_parent"
        android:gravity="center"
        android:layout_height="wrap_content"
        >

        <TextView
            android:id="@+id/title"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Login"
            android:textFontWeight="900"
            android:paddingBottom="20dp"
            android:textSize="24sp" />
    </TableRow>
    <TableRow
        android:layout_width="match_parent"
        android:layout_height="wrap_content">
        <TextView
            android:id="@+id/usernameLabel"
            android:layout_height="wrap_content"
            android:layout_width="wrap_content"
            android:paddingHorizontal="10dp"
            android:text="Username: "/>

        <EditText
            android:id="@+id/username"
            android:layout_width="339dp"
            android:layout_height="wrap_content" />

    </TableRow>
    <TableRow
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content">
        <TextView
            android:id="@+id/passwordLabel"
            android:layout_height="wrap_content"
            android:layout_width="wrap_content"
            android:paddingHorizontal="10dp"
            android:text="Password: "/>

        <EditText
            android:id="@+id/password"
            android:layout_width="339dp"
            android:inputType="textPassword"
            android:layout_height="wrap_content" />

    </TableRow>
    <TableRow
        android:paddingTop="40dp"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:gravity="center"
        >
        <Button
            android:id="@+id/submit"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Login"
            android:onClick="login"
            />

    </TableRow>
</TableLayout>
```

MainActivity.java :

```
import ...
public class MainActivity extends AppCompatActivity {

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

    public void login(View view) {
        EditText userName = (EditText)findViewById(R.id.username);
        EditText password = (EditText)findViewById(R.id.password);
```

```
      if(userName.getText().toString().equals("admin") &&
password.getText().toString().equals("password")) {
            Toast.makeText(this, "Login Success", Toast.LENGTH_SHORT).show();
        }
        else {
            Toast.makeText(this, "Invalid Credentials",
Toast.LENGTH_SHORT).show();
        }
    }
}
```

Result: Program is executed and output is verified.

Output:

```
D/Activity Lifecycle: onCreate: Called
D/Activity Lifecycle: onStart: Called
D/Activity Lifecycle: onResume: Called
D/Activity Lifecycle: onPause: Called
D/Activity Lifecycle: onStop: Called
D/Activity Lifecycle: onRestart: Called
D/Activity Lifecycle: onStart: Called
D/Activity Lifecycle: onResume: Called
D/Activity Lifecycle: onPause: Called
D/Activity Lifecycle: onStop: Called
D/Activity Lifecycle: onDestroy: Called
```

Program: 2

Sep 21, 2023

Develop an android application to demonstrate android activity lifecycle.

Program

activity_main.xml :

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Activity Lifecycle Example!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

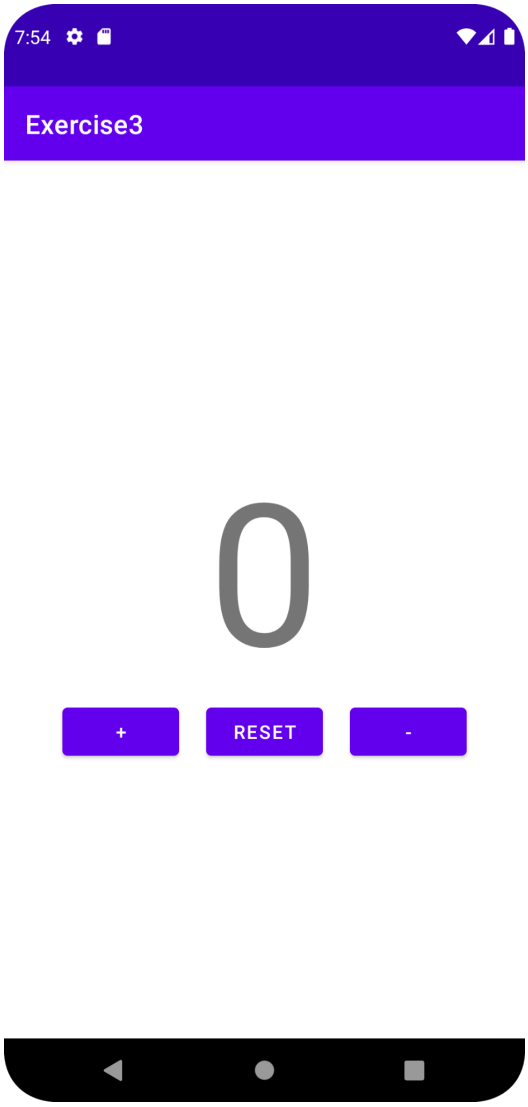
MainActivity.java :

```
import ...
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("Activity Lifecycle", "onCreate: Called");
    }

    @Override
    protected void onStart() {
        super.onStart();
        Log.d("Activity Lifecycle", "onStart: Called");
    }

    @Override
    protected void onResume() {
        super.onResume();
```

```
     Log.d("Activity Lifecycle", "onResume: Called");
    }

    @Override
    protected void onPause() {
        super.onPause();
        Log.d("Activity Lifecycle", "onPause: Called");
    }

    @Override
    protected void onStop() {
        super.onStop();
        Log.d("Activity Lifecycle", "onStop: Called");
    }

    @Override
    protected void onRestart() {
        super.onRestart();
        Log.d("Activity Lifecycle", "onRestart: Called");
    }

    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d("Activity Lifecycle", "onDestroy: Called");
    }
}
```

Result: Program is executed and output is verified

Output:



Program: 3

Oct 5, 2023

Develop an android application to demonstrate a counter app.

Program

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">

<TextView
    android:id="@+id/display"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="0"
    android:textFontWeight="900"
    android:textSize="150dp"/>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:orientation="horizontal">
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="+"
            android:layout_marginHorizontal="10dp"
            android:onClick="increment"/>
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Reset"
            android:layout_marginHorizontal="10dp"
            android:onClick="reset"/>
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="-"
            android:layout_marginHorizontal="10dp"
            android:onClick="decrement"/>
```

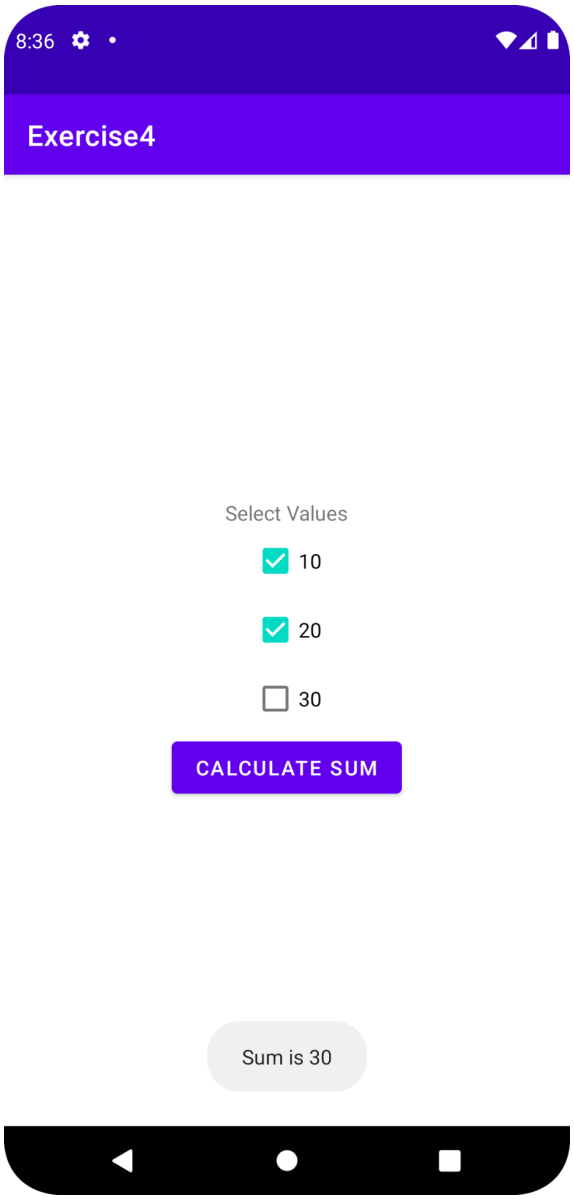
```
</LinearLayout>

</LinearLayout>
```

MainActivity.java :

```
import ...
public class MainActivity extends AppCompatActivity {
    int count = 0;
    TextView display;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        display = (TextView) findViewById(R.id.display);
    }

    public void increment(View view) {
        count++;
        display.setText(Integer.toString(count));
    }

    public void decrement(View view) {
        count--;
        display.setText(Integer.toString(count));
    }

    public void reset(View view) {
        count = 0;
        display.setText(Integer.toString(count));
    }
}
```

Result: Program is executed and output is verified.

Output:



Program: 4

Nov 2, 2023

Develop an android application to find the sum of checked values from a set of numbers (Use checkbox).

Program

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">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Select Values"/>
    <CheckBox
        android:id="@+id/cb1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="10"/>
    <CheckBox
        android:id="@+id/cb2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="20"/>
    <CheckBox
        android:id="@+id/cb3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="30"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="showSum"
        android:text="Calculate Sum"/>

</LinearLayout>
```

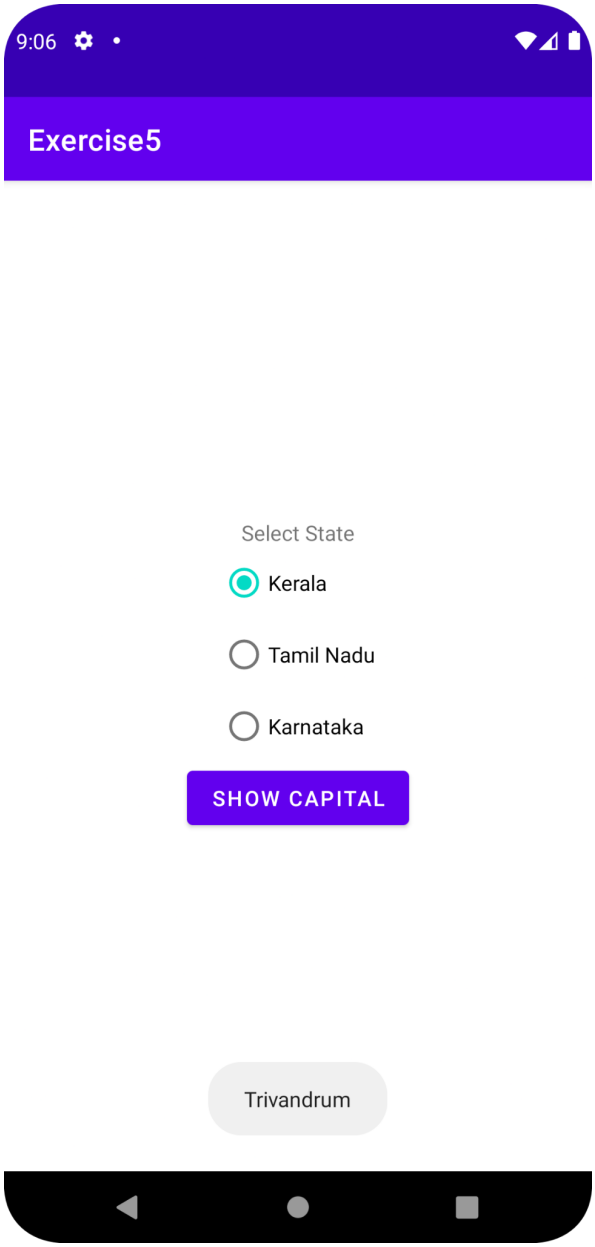
MainActivity.java :

```
import ...
public class MainActivity extends AppCompatActivity implements
CompoundButton.OnCheckedChangeListener {
```

```
    int sum = 0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        CheckBox cb1, cb2;
        cb1 = (CheckBox) findViewById(R.id.cb1);
        cb2 = (CheckBox) findViewById(R.id.cb2);
        cb1.setOnCheckedChangeListener(this);
        cb2.setOnCheckedChangeListener(this);
    }

    @Override
    public void onCheckedChanged(CompoundButton compoundButton, boolean b) {
        if(b) {
            sum += Integer.valueOf(compoundButton.getText().toString());
        }
        else {
            sum -= Integer.valueOf(compoundButton.getText().toString());
        }
    }

    public void showSum(View view) {
        Toast.makeText(this, "Sum is " + sum, Toast.LENGTH_SHORT).show();
    }
}
```

Result: Program is executed and output is verified

Output:


9:06
Exercise5
Select State
Kerala
Tamil Nadu
Karnataka
SHOW CAPITAL
Trivandrum

Program: 5

Nov 9, 2023

Develop an android application to display the capital of a state (Use radio button).

Program

activity_main.xml :

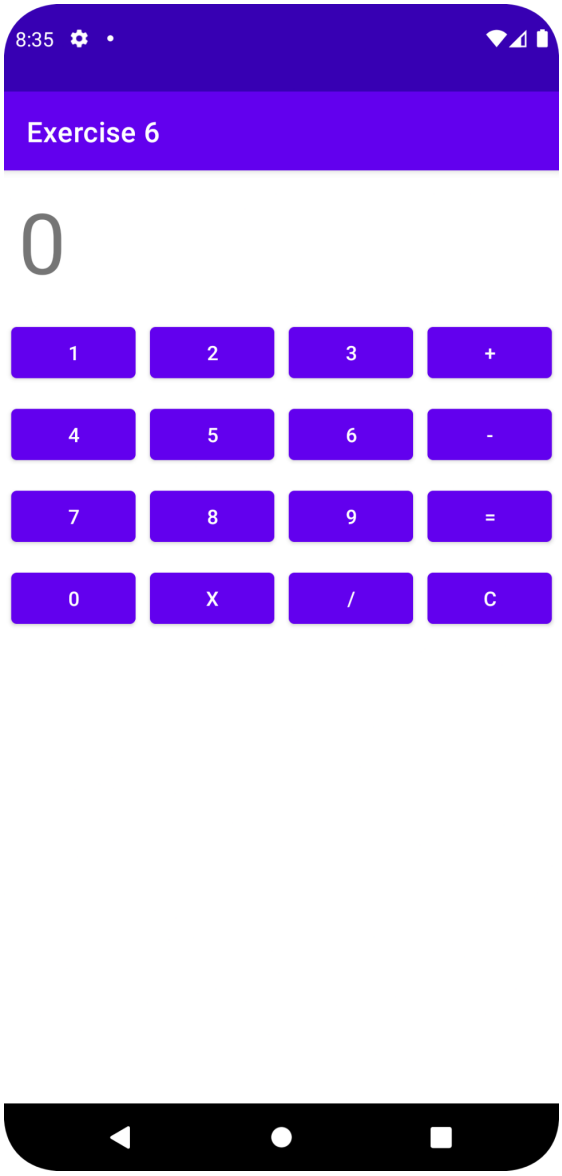
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Select State"/>
    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <RadioButton
            android:id="@+id/rb1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Kerala"/>
        <RadioButton
            android:id="@+id/rb2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Tamil Nadu"/>
        <RadioButton
            android:id="@+id/rb3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Karnataka"/>
    </RadioGroup>
    <Button
        android:onClick="showCapital"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show Capital"/>
</LinearLayout>
```

MainActivity.java :

```
import ...
public class MainActivity extends AppCompatActivity implements
RadioGroup.OnCheckedChangeListener {
    String capital = "Please select a state";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        RadioGroup radioGroup = (RadioGroup) findViewById(R.id.radioGroup);
        radioGroup.setOnCheckedChangeListener(this);
    }

    @Override
    public void onCheckedChanged(RadioGroup radioGroup, int i) {
        RadioButton radioButton = (RadioButton)
findViewById(radioGroup.getCheckedRadioButtonId());
        String state = radioButton.getText().toString();
        switch (state) {
            case "Kerala":
                capital = "Trivandrum";
                break;
            case "Tamil Nadu":
                capital = "Chennai";
                break;
            case "Karnataka":
                capital = "Bangalore";
                break;
        }
    }

    public void showCapital(View view) {
        Toast.makeText(this, capital, Toast.LENGTH_SHORT).show();
    }
}
```

Result: Program is executed and output is verified.

Output:



Program: 6

Nov 16, 2023

Develop a simple calculator using grid layout.

Program

activity_main.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<GridLayout 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/gridLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:columnCount="4"
    android:rowCount="5"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/display"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_row="0"
        android:layout_column="0"
        android:layout_columnSpan="4"
        android:padding="10dp"
        android:text="0"
        android:textSize="60sp" />
    <Button
        android:id="@+id/nubmber1"
        android:layout_margin="5dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="1"
        android:layout_column="0"
        android:layout_row="1"/>
    <Button
        android:id="@+id/nubmber2"
        android:layout_margin="5dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="2"
        android:layout_column="1"
        android:layout_row="1"/>
    <Button
        android:id="@+id/nubmber3"
        android:layout_margin="5dp"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="3"
    android:layout_column="2"
    android:layout_row="1"/>
<Button
    android:id="@+id/plus"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="+"
    android:layout_column="3"
    android:layout_row="1"/>
<Button
    android:id="@+id/nubmber4"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="4"
    android:layout_column="0"
    android:layout_row="2"/>
<Button
    android:id="@+id/nubmber5"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="5"
    android:layout_column="1"
    android:layout_row="2"/>
<Button
    android:id="@+id/nubmber6"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="6"
    android:layout_column="2"
    android:layout_row="2"/>
<Button
    android:id="@+id/minus"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="-"
    android:layout_column="3"
    android:layout_row="2"/>
<Button
    android:id="@+id/nubmber7"
    android:layout_margin="5dp"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="7"
    android:layout_column="0"
    android:layout_row="3"/>
<Button
    android:id="@+id/nubmber8"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="8"
    android:layout_column="1"
    android:layout_row="3"/>
<Button
    android:id="@+id/nubmber9"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="9"
    android:layout_column="2"
    android:layout_row="3"/>
<Button
    android:id="@+id/equal"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="="
    android:layout_rowSpan="2"
    android:layout_column="3"
    android:layout_row="3"/>
<Button
    android:id="@+id/nubmber0"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="0"
    android:layout_column="0"
    android:layout_row="4"/>
<Button
    android:id="@+id/multiply"
    android:layout_margin="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="x"
    android:layout_column="1"
    android:layout_row="4"/>
<Button
    android:id="@+id/divide"
```

```
        android:layout_margin="5dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="/"
        android:layout_column="2"
        android:layout_row="4"/>
    <Button
        android:id="@+id/clear"
        android:layout_margin="5dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="c"
        android:layout_column="3"
        android:layout_row="4"/>
</GridLayout>
```

MainActivity.java :

```
import ...
public class MainActivity extends AppCompatActivity implements
View.OnClickListener {
    int a;
    boolean isFirstNumber = false;
    String expression = "";
    String operator = "";
    TextView display;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        display = findViewById(R.id.display);
        GridLayout gridLayout = findViewById(R.id.gridLayout);

        for (int i = 0; i < gridLayout.getChildCount(); i++) {
            if (gridLayout.getChildAt(i).getId() != R.id.display) {
                Button button = (Button) gridLayout.getChildAt(i);
                button.setOnClickListener(this);
            }
        }
    }

    @Override
    public void onClick(View view) {
        int viewId = view.getId();
        Integer[] operatorIds = {R.id.plus, R.id.minus, R.id.multiply,
R.id.divide};
        List<Integer> operators = Arrays.asList(operatorIds);
```

```
        if (operators.contains(viewId)) {
            a = Integer.valueOf(expression);
            operator = ((Button) view).getText().toString();
            if(operator.equals("x")){
                operator = "*";
            }
            expression = "";
            isFirstNumber = !isFirstNumber;
        } else if (viewId == R.id.equal) {
            if (!operator.isEmpty()) {
                int result = performCalculation(a, Integer.valueOf(expression),
operator);
                expression = String.valueOf(result);
                isFirstNumber = true;
                operator = "";
            }
        } else if (viewId == R.id.clear) {
            expression = "";
            isFirstNumber = true;
            operator = "";
        } else {
            expression = expression + ((Button) view).getText().toString();
        }
        display.setText(expression);
    }

    private int performCalculation(int a, int b, String operator) {
        switch (operator) {
            case "+":
                return a + b;
            case "-":
                return a - b;
            case "*":
                return a * b;
            case "/":
                if (b != 0) {
                    return a / b;
                } else {
                    return 0;
                }
            default:
                return 0;
        }
    }
}
```

Result: Program is executed and output is verified.

Output:


9:05
Exercise 7
rijfas
LOGIN
9:05
Exercise 7
Logged in as:rijfas
LOGOUT

Program: 7

Nov 16, 2023

Design a login page and store login details in local memory of the phone using intents and sharedpreferences.

Program

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">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text=""
        android:id="@+id/userNameDisplay"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Logout"
        android:onClick="Logout"/>
</LinearLayout>
```

activity_login_screen.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=".LoginScreen">
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/userName"/>
    <Button
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:text="Login"
        android:onClick="login"/>
</LinearLayout>
```

MainActivity.java :

```
import ...
public class MainActivity extends AppCompatActivity {
    SharedPreferences preferences;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        preferences = getSharedPreferences("creds", MODE_PRIVATE);
        String userName = preferences.getString("userName", "");
        if(userName.equals("")) {
            startActivity(new Intent(this, LoginScreen.class));
        }
        ((TextView)findViewById(R.id.userNameDisplay)).setText("Logged in as:"+
userName);
    }

    public void logout(View view){
        SharedPreferences.Editor editor = preferences.edit();
        editor.putString("userName", "");
        editor.apply();
        startActivity(new Intent(this, LoginScreen.class));
    }
}
```

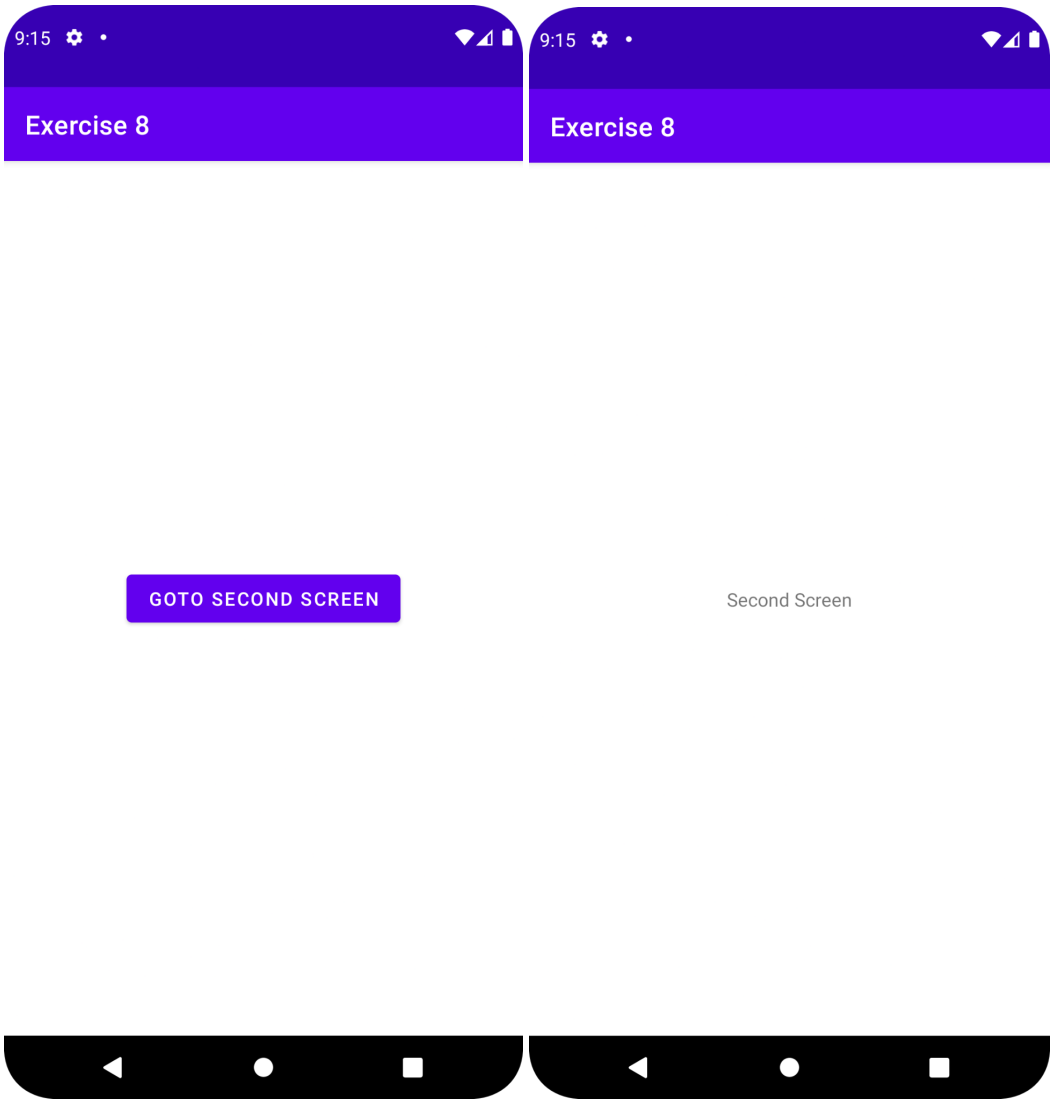
LoginScreen.java :

```
import ...

public class LoginScreen extends AppCompatActivity {

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

    public void login(View view) {
        SharedPreferences preferences = getSharedPreferences("creds",
MODE_PRIVATE);
        SharedPreferences.Editor editor = preferences.edit();
```

```
  editor.putString("userName",
((EditText)findViewById(R.id.userName)).getText().toString());
        editor.apply();
        startActivity(new Intent(this, MainActivity.class));
    }
}
```

Result: Program is executed and output is verified.

Output:


9:15
Exercise 8
GOTO SECOND SCREEN
9:15
Exercise 8
Second Screen

Program: 8

Nov 16, 2023

Develop an android application that displays an activity navigation from first activity to second activity.

Program

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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Goto Second Screen"
        android:onClick="gotoSecondScreen"
        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_second_activity.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=".SecondAcitivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Second Screen"/>
</LinearLayout>
```

MainActivity.java :

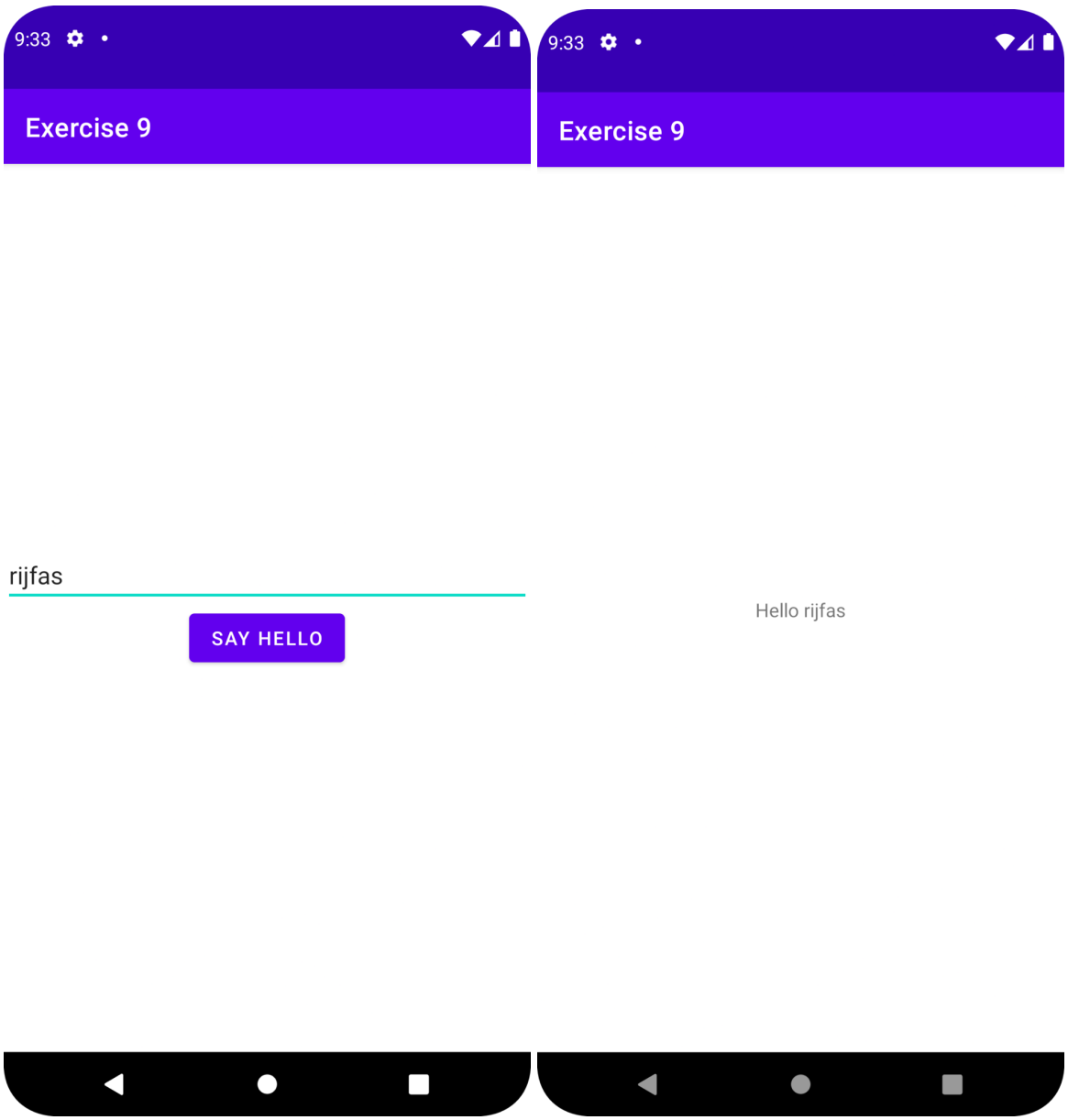
```
import ...

public class MainActivity extends AppCompatActivity {

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

    public void gotoSecondScreen(View view) {
        startActivity(new Intent(this, SecondAcitivity.class));
    }
}
```

SecondActivity.java :

```
import ...

public class SecondAcitivity extends AppCompatActivity {

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

Result: Program is executed and output is verified.

Output:



Program: 9

Nov 23, 2023

Develop an android application that passes data using explicit intent.

Program

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">
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/userName"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Say Hello"
        android:onClick="gotoSecondScreen"
        />
</LinearLayout>
```

activity_second.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=".SecondActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text=""
        android:id="@+id/userNameDisplay"/>
</LinearLayout>
```

MainActivity.java :

```
import ...

public class MainActivity extends AppCompatActivity {
```

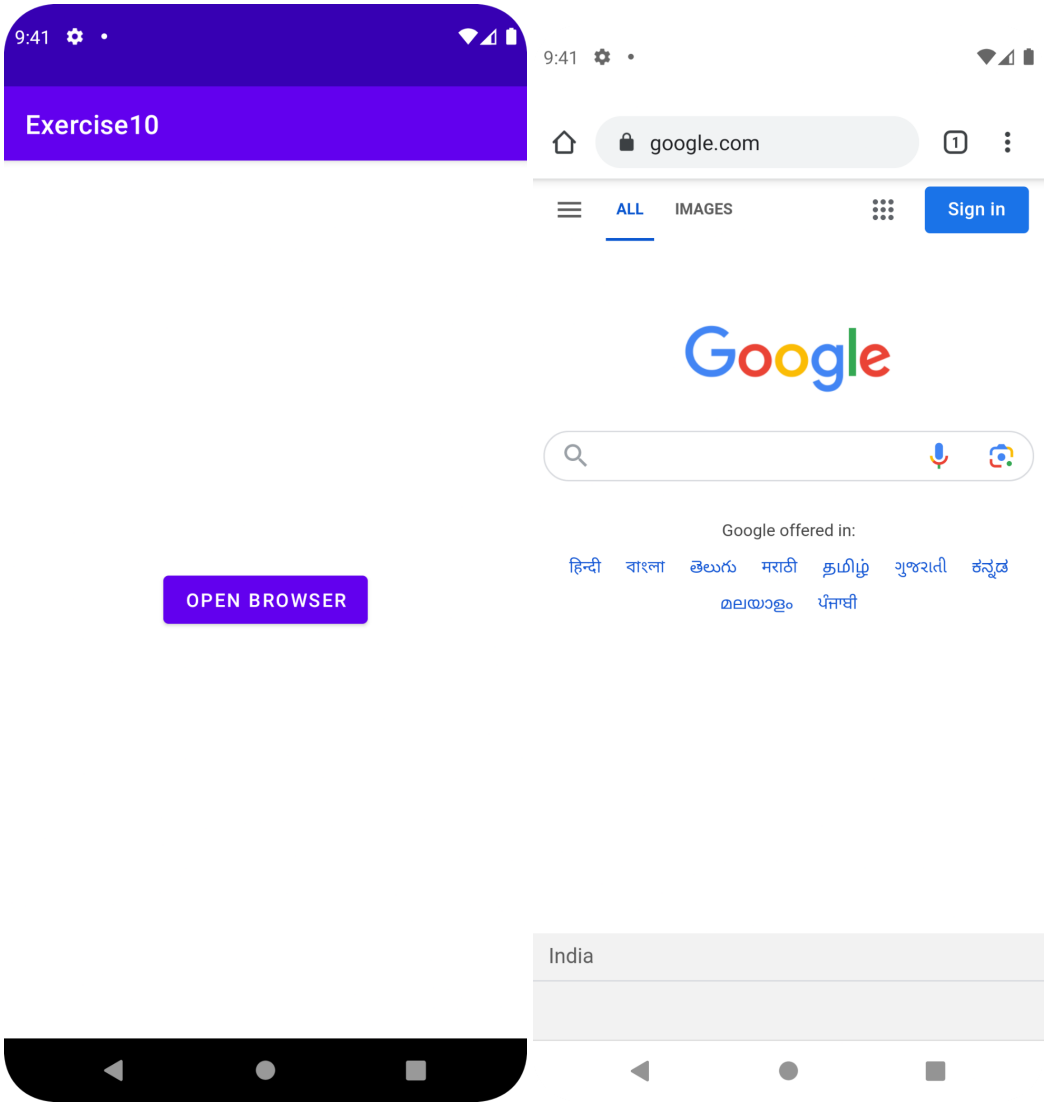
```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void gotoSecondScreen(View view) {
        Intent intent = new Intent(this, SecondActivity.class);
        intent.putExtra("userName",
((TextView)findViewById(R.id.userName)).getText().toString());
        startActivity(intent);
    }
}
```

SecondActivity.java :

```
import ...

public class SecondActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        ((TextView)findViewById(R.id.userNameDisplay)).setText("Hello " +
getIntent().getStringExtra("userName"));
    }
}
```

Result: Program is executed and output is verified.

Output:


9:41
Exercise10
OPEN BROWSER
9:41
google.com
ALL
IMAGES
Sign in
Google
Google offered in:
हिन्दी বাংলা తెలుగు मराठी தமிழ் ગુજરાતી ಕನ್ನಡ
മലയാളം ਪੰਜਾਬੀ
India

Program: 10

Nov 23, 2023

Develop an android application that opens the browser on a button click using implicit intent.

Program

activity_main.xml :

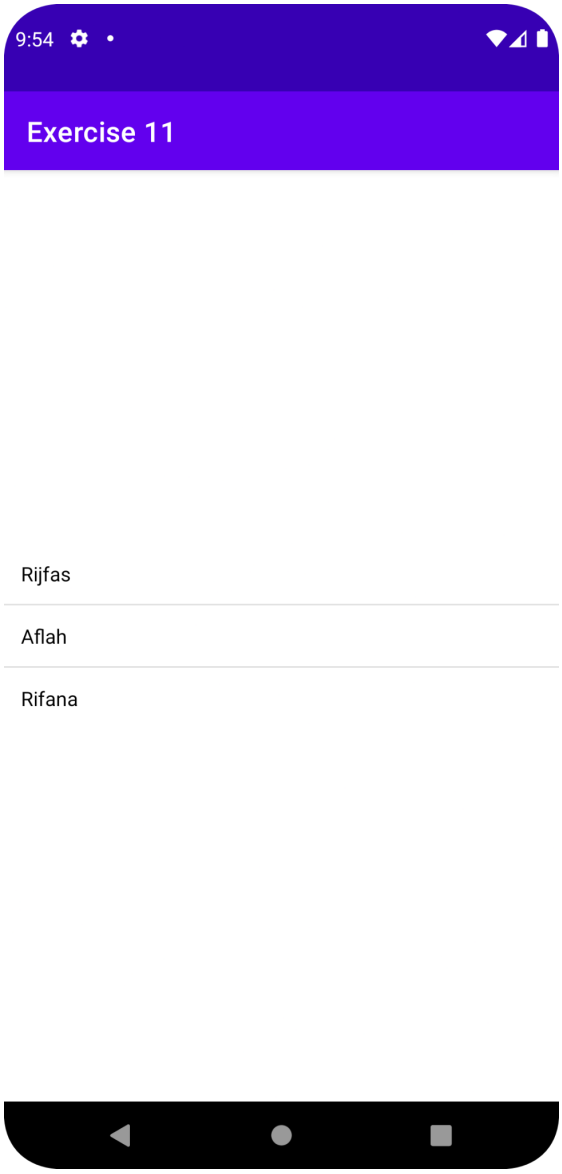
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
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

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Open Browser"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        android:onClick="openBrowser"/>

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

MainActivity.java :

```
import ...

public class MainActivity extends AppCompatActivity {

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

    public void openBrowser(View view) {
        Intent intent = new Intent(Intent.ACTION_VIEW);
        intent.setData(Uri.parse("https://google.com"));
        startActivity(intent);
    }
}
```

Result: Program is executed and output is verified.

Output:



Program: 11

Nov 23, 2023

Develop an android application that uses ArrayAdapter with ListView.

Program

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">
    <ListView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/listView"/>
</LinearLayout>
```

list_item.xml :

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <TextView
        android:id="@+id/textView"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:padding="12dp"
        android:textColor="#000" />
</LinearLayout>
```

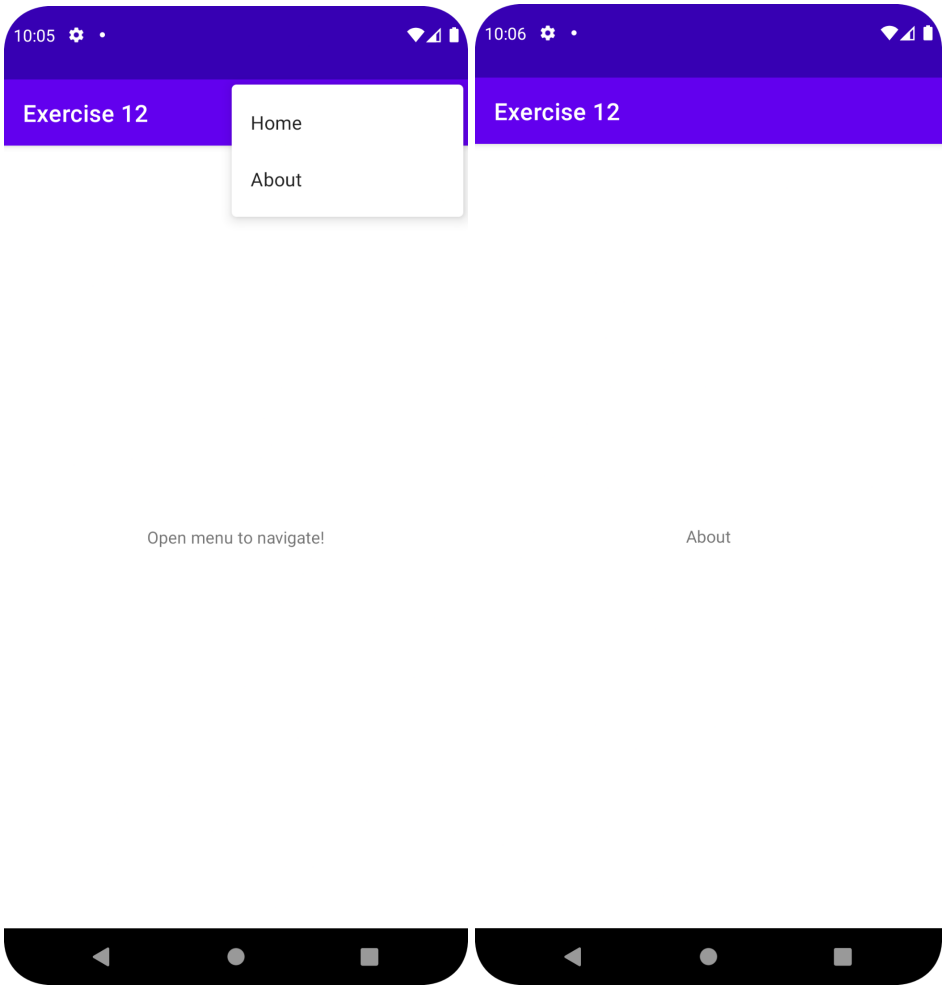
MainActivity.java :

```
import ...

public class MainActivity extends AppCompatActivity {
    String[] people = {"Rijfas", "Aflah", "Rifana"};

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
        ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
R.layout.list_item, R.id.textView, people);
        ((ListView)findViewById(R.id.listView)).setAdapter(adapter);
    }
}
```

Result: Program is executed and output is verified.

Output:


10:05
Exercise 12
Home
About
Open menu to navigate!
10:06
Exercise 12
About

Program: 12

Nov 25, 2023

Implement options menu to navigate to activities.

Program

activity_main.xml :

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Open menu to navigate!"
        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_about.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=".About">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="About"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

menu.xml :

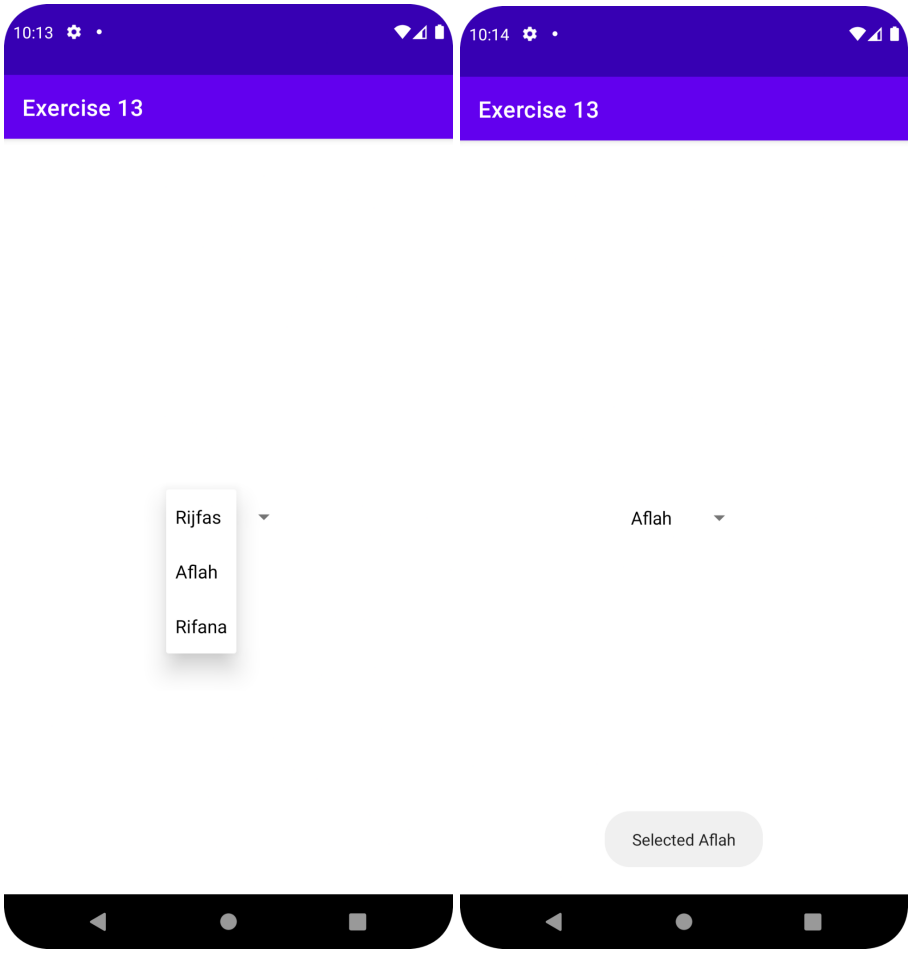
```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/home"
        android:title="Home" />
    <item android:id="@+id/about"
        android:title="About" />
</menu>
```

MainActivity.java :

```
import ...

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        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(@NonNull MenuItem item) {
        switch (item.getItemId()) {
            case R.id.home:
                startActivity(new Intent(this, MainActivity.class));
                return true;
            case R.id.about:
                startActivity(new Intent(this, About.class));
                return true;
            default:
                return super.onOptionsItemSelected(item);
        }
    }
}
```

Result: Program is executed and output is verified.

Output:


10:13
Exercise 13
Rijfas
Aflah
Rifana
10:14
Exercise 13
Aflah
Selected Aflah

Program: 13

Nov 25, 2023

Develop an android application that implements Spinner component and perform event handling.

Program

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">

    <Spinner
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/spinner"
        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 :

```
import ...

public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemSelectedListener {
    String[] people = {"Rijfas", "Aflah", "Rifana"};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item, people);
        Spinner spinner = (Spinner) findViewById(R.id.spinner);
        spinner.setAdapter(adapter);
        spinner.setOnItemSelectedListener(this);
    }

    @Override
    public void onItemSelected(AdapterView<?> adapterView, View view, int i,
long l) {
```

```
     Toast.makeText(this, "Selected " + people[i], Toast.LENGTH_SHORT).show();
    }

    @Override
    public void onNothingSelected(AdapterView<?> adapterView) {

    }
}
```

Result: Program is executed and output is verified.