

# **MASTER OF COMPUTER APPLICATIONS**

## **PRACTICAL RECORD WORK**

**ON**

### **20MCA243 – MOBILE APPLICATION DEVELOPMENT LAB**

**Submitted by**

---

**Regno: VDA21MCA-20\_\_\_\_**



**DEPARTMENT OF COMPUTER APPLICATIONS  
COLLEGE OF ENGINEERING VADAKARA  
(CAPE - GOVT. OF KERALA)**

**DECEMBER 2022**

**Department of Computer Applications  
College of Engineering Vadakara  
(CAPE - Govt. of Kerala)**



**CERTIFICATE**

Certified that this is a bonafide record of the practical work done on the course **20MCA243 MOBILE APPLICATION DEVELOPMENT LAB** done by Mr./Ms. \_\_\_\_\_ (**Regno: VDA21MCA-20\_\_**)  
Third semester, MCA (2021- 2023 batch), Department of Computer Applications at College of Engineering Vadakara in partial fulfilment for the award of the degree of Master of Computer Applications (MCA) of APJ Abdul Kalam Technological University (KTU).

**Faculty-in-Charge**

**Head of the Department**

**Internal Examiner**

**External Examiner**

## **INDEX**

<b>SI No.</b>	<b>Program</b>	<b>Page No</b>
1	Login Form	1
2	Activity Lifecycle	4
3	Basic Calculator	6
4	Calculator using Cascaded LinearLayout	10
5	Toggle Image	14
6	Adapters	17
7	Intent	19
8	Array Adapter with ListView	23
9	Images using GridView and Alert box on selection	25
10	Spinner	28

## **EXPERIMENT NO - 1**

Design a Login form with username and password using Linear Layout and toast valid credentials.

### **CODE**

#### **Activity\_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <LinearLayout
        android:id="@+id/linearLayout2"
        android:layout_width="314dp"
        android:layout_height="339dp"
        android:layout_marginBottom="148dp"
        android:orientation="vertical"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="parent">
        <TextView
            android:id="@+id/username"
            android:layout_width="152dp"
            android:layout_height="35dp"
            android:text="username"
            tools:ignore="MissingConstraints" />
        <EditText
            android:id="@+id/EmailAddress"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:ems="10"
            android:inputType="textEmailAddress"
            tools:ignore="MissingConstraints" />
        <TextView
            android:id="@+id/pass"
            android:layout_width="150dp"
            android:layout_height="35dp"
            android:text="password"
            tools:ignore="MissingConstraints" />
        <EditText
            android:id="@+id/Password"
```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="numberPassword" />
    <Button
        android:id="@+id/btn"
        android:layout_width="wrap_content"
        android:layout_height="59dp"
        android:layout_marginBottom="236dp"
        android:text="Button" />
</LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>

```

### MainActivity.java

```

package com.example.loginform;
import androidx.appcompat.app.AppCompatActivity;
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 us,ps;
    Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        us = (EditText) findViewById(R.id.EmailAddress);
        ps = (EditText) findViewById(R.id.Password);
        btn = (Button) findViewById(R.id.btn);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String k = "user1";
                int p=123;
                int pss = Integer.parseInt(ps.getText().toString());
            };
            String uss=us.getText().toString();
            if ( uss.equals(k) && pss==p)
            {
                Toast.makeText(MainActivity.this, "Login
success", Toast.LENGTH_SHORT).show();
            }
            else
            {

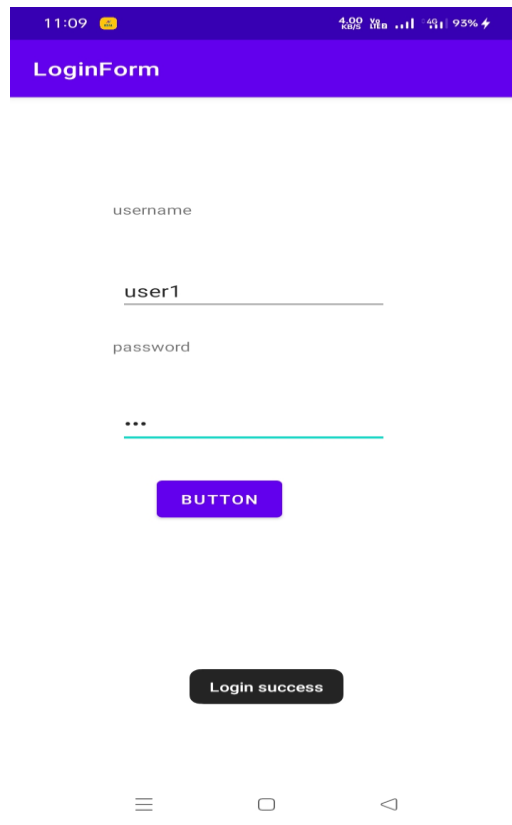
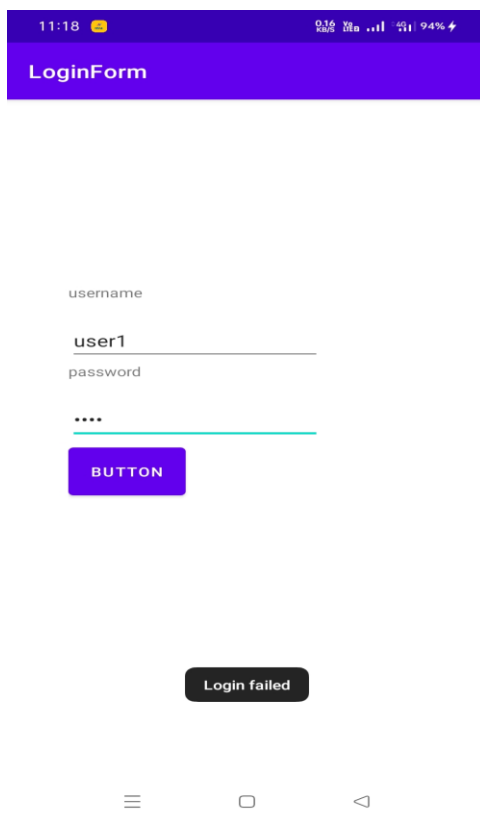
```

```

        Toast.makeText(MainActivity.this, "Login failed",
Toast.LENGTH_SHORT).show();
    }
}
});
}
}
}

```

## OUTPUT



## EXPERIMENT NO - 2

Write a program that demonstrates Activity Lifecycle.

### CODE

#### **Activity\_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

#### **MainActivity.java**

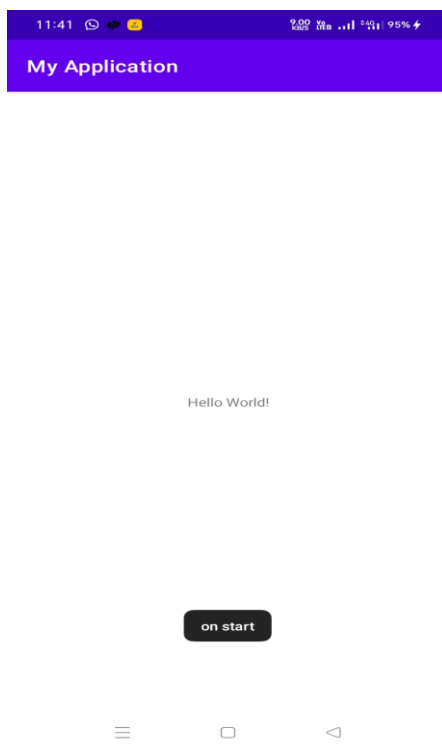
```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    @Override
    protected void onStart() {
        super.onStart();
        Toast.makeText(this, "on start", Toast.LENGTH_SHORT).show();
    }
    @Override
    protected void onRestart() {
        super.onRestart();
        Toast.makeText(this, "on restart",
Toast.LENGTH_SHORT).show();
    }
}
```

```

    }
    @Override
    protected void onResume() {
        super.onResume();
        Toast.makeText(this, "on resume", Toast.LENGTH_SHORT).show();
    }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        Toast.makeText(this, "on destroy",
Toast.LENGTH_SHORT).show();
    }
    @Override
    protected void onStop() {
        super.onStop();
        Toast.makeText(this, "on stop", Toast.LENGTH_SHORT).show();
    }
    @Override
    protected void onPause() {
        super.onPause();
        Toast.makeText(this, "on pause", Toast.LENGTH_SHORT).show();
    }
}

```

## OUTPUT





## **EXPERIMENT NO - 3**

Implement basic arithmetic operations of a simple calculator.

### **CODE**

#### **Activity\_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/div"
        android:layout_width="70dp"
        android:layout_height="51dp"
        android:layout_marginStart="16dp"
        android:layout_marginBottom="200dp"
        android:text="/"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
    <Button
        android:id="@+id/sub"
        android:layout_width="70dp"
        android:layout_height="51dp"
        android:layout_marginStart="12dp"
        android:layout_marginBottom="200dp"
        android:text="-"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toEndOf="@+id/div" />
    <Button
        android:id="@+id/sum"
        android:layout_width="70dp"
        android:layout_height="51dp"
        android:layout_marginStart="20dp"
        android:layout_marginBottom="200dp"
        android:text="+"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toEndOf="@+id/sub" />
    <Button
        android:id="@+id/mul"
        android:layout_width="70dp"
        android:layout_height="51dp"
        android:layout_marginStart="16dp"
```

```

        android:layout_marginBottom="200dp"
        android:text="*"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toEndOf="@+id/sum" />
<TextView
    android:id="@+id/rslt"
    android:layout_width="124dp"
    android:layout_height="60dp"
    android:layout_marginBottom="96dp"
    android:gravity="center"
    android:text="Result"
    android:textAlignment="center"

    android:textAppearance="@style/TextAppearance.AppCompat.Body1"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.466"
    app:layout_constraintStart_toStartOf="parent" />
<EditText
    android:id="@+id/second"
    android:layout_width="294dp"
    android:layout_height="70dp"
    android:layout_marginBottom="68dp"
    android:ems="10"
    android:inputType="number"
    app:layout_constraintBottom_toTopOf="@+id/sub"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.378"
    app:layout_constraintStart_toStartOf="parent" />
<EditText
    android:id="@+id/first"
    android:layout_width="301dp"
    android:layout_height="71dp"
    android:layout_marginBottom="20dp"
    android:ems="10"
    android:inputType="number"
    app:layout_constraintBottom_toTopOf="@+id/second"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.4"
    app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### MainActivity.java

```

package com.example.simplecalculator;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;

```

```

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

public class MainActivity extends AppCompatActivity {
    EditText n1,n2;
    Button sum,mul,div,sub;
    TextView rslt;
    @SuppressWarnings("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        n1 = (EditText) findViewById(R.id.first);
        n2 = (EditText) findViewById(R.id.second);
        sum = findViewById(R.id.sum);
        mul = findViewById(R.id.mul);
        div = findViewById(R.id.div);
        sub = findViewById(R.id.sub);
        rslt = findViewById(R.id.rslt);
        sum.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int f1 = Integer.parseInt(n1.getText().toString());
                int f2 = Integer.parseInt(n2.getText().toString());
                int cal = f1+f2;
                rslt.setText("Addition = "+cal);
            }
        });
        sub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int f1 = Integer.parseInt(n1.getText().toString());
                int f2 = Integer.parseInt(n2.getText().toString());
                int cal = f1-f2;
                rslt.setText("Subtraction = "+cal);
            }
        });
        div.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int f1 = Integer.parseInt(n1.getText().toString());
                int f2 = Integer.parseInt(n2.getText().toString());
                int cal = f1/f2;
                rslt.setText("Division = "+cal);
            }
        });
    }
}

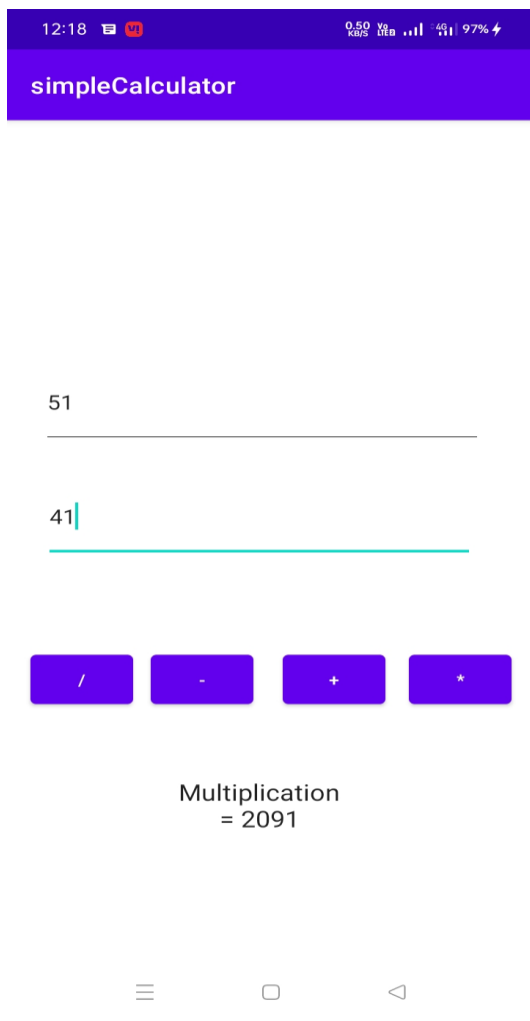
```

```

    });
    mul.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            int f1 = Integer.parseInt(n1.getText().toString());
            int f2 = Integer.parseInt(n2.getText().toString());
            int cal = f1*f2;
            rslt.setText("Multiplication = "+cal);
        }
    });
}
}

```

## OUTPUT



## **EXPERIMENT NO - 4**

Design a simple Calculator using Grid Layout and Cascaded Linear Layout.

### **CODE**

#### **Activity\_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <androidx.gridlayout.widget.GridLayout
        android:id="@+id/gridLayout"
        android:layout_width="259dp"
        android:layout_height="79dp"
        android:layout_marginBottom="28dp"
        app:layout_constraintBottom_toTopOf="@+id/rslt"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent">
        <Button
            android:id="@+id/sum"
            android:layout_width="64dp"
            android:layout_height="70dp"
            android:text="+"
            app:layout_column="0"
            app:layout_row="0" />
        <Button
            android:id="@+id/div"
            android:layout_width="64dp"
            android:layout_height="70dp"
            android:text="/"
            app:layout_column="3"
            app:layout_row="0" />
        <Button
            android:id="@+id/mul"
            android:layout_width="64dp"
            android:layout_height="70dp"
            android:text="*"
            app:layout_column="2"
            app:layout_row="0" />
        <Button
            android:id="@+id/sub"
            android:layout_width="64dp"
```

```

        android:layout_height="70dp"
        android:text="-"
        app:layout_column="1"
        app:layout_row="0" />
</androidx.gridlayout.widget.GridLayout>
<LinearLayout
    android:layout_width="337dp"
    android:layout_height="178dp"
    android:layout_marginBottom="40dp"
    android:orientation="vertical"
    app:layout_constraintBottom_toTopOf="@+id/gridLayout"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent">
    <EditText
        android:id="@+id/fNo"
        android:layout_width="match_parent"
        android:layout_height="92dp"
        android:ems="10"
        android:inputType="number" />
    <EditText
        android:id="@+id/sNo"
        android:layout_width="match_parent"
        android:layout_height="77dp"
        android:ems="10"
        android:inputType="number" />
</LinearLayout>
<TextView
    android:id="@+id/rslt"
    android:layout_width="239dp"
    android:layout_height="48dp"
    android:layout_marginBottom="132dp"
    android:text="TextView"
    android:textAlignment="center"
    android:textColor="#000000"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### MainActivity.java

```

package com.example.gridcalculator;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

```

```

import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
    EditText fNo,sNo;
    Button sum,div,sub,mul;
    TextView rslt;
    @SuppressWarnings("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        fNo = findViewById(R.id.fNo);
        sNo = findViewById(R.id.sNo);
        sum = findViewById(R.id.sum);
        div = findViewById(R.id.div);
        sub = findViewById(R.id.sub);
        mul = findViewById(R.id.mul);
        rslt = findViewById(R.id.rslt);
        sum.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int n1 = Integer.parseInt(fNo.getText().toString());
                int n2 = Integer.parseInt(sNo.getText().toString());
                int cal = n1+n2;
                rslt.setText("Addition = "+cal);
            }
        });
        sub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int n1 = Integer.parseInt(fNo.getText().toString());
                int n2 = Integer.parseInt(sNo.getText().toString());
                int cal = n1-n2;
                rslt.setText("Subtraction = "+cal);
            }
        });
        div.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int n1 = Integer.parseInt(fNo.getText().toString());
                int n2 = Integer.parseInt(sNo.getText().toString());
                int cal = n1/n2;
                rslt.setText("Division = "+cal);
            }
        });
        mul.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

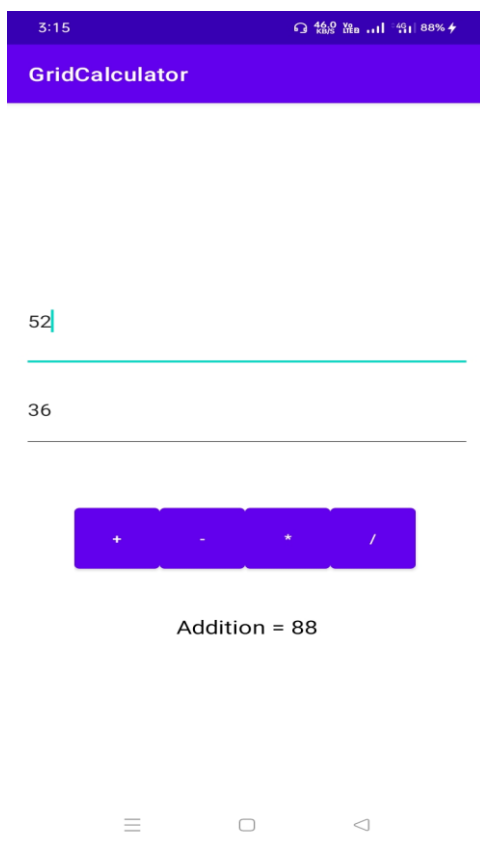
```

```

        int n1 = Integer.parseInt(fNo.getText().toString());
        int n2 = Integer.parseInt(sNo.getText().toString());
        int cal = n1*n2;
        rslt.setText("Multiplication = "+cal);
    }
}
}

```

## OUTPUT





## **EXPERIMENT NO - 5**

Develop an application that toggles image using Frame Layout.

### **CODE**

#### **Activity\_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <FrameLayout
        android:id="@+id/frameLayout"
        android:layout_width="95dp"
        android:layout_height="71dp"
        android:layout_marginBottom="228dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.49"
        app:layout_constraintStart_toStartOf="parent">
        <ToggleButton
            android:id="@+id/tg"
            android:layout_width="wrap_content"
            android:layout_height="68dp"
            android:text="ToggleButton" />
    </FrameLayout>
    <FrameLayout
        android:layout_width="97dp"
        android:layout_height="101dp"
        android:layout_marginBottom="140dp"
        app:layout_constraintBottom_toTopOf="@+id/frameLayout"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.493"
        app:layout_constraintStart_toStartOf="parent">

        <ImageView
            android:id="@+id/im"
            android:layout_width="84dp"
            android:layout_height="123dp"
            app:srcCompat="@android:drawable/ic_delete" />
    </FrameLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

## MainActivity.java

```
package com.example.toggle;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.media.Image;
import android.os.Bundle;
import android.view.View;
import android.widget.CompoundButton;
import android.widget.ImageView;
import android.widget.ToggleButton;
public class MainActivity extends AppCompatActivity {
    ImageView im;
    ToggleButton tg;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        im = findViewById(R.id.im);
        tg = findViewById(R.id.tg);
        im.setVisibility(View.INVISIBLE);
        tg.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if(tg.isChecked()){
                    im.setVisibility(View.VISIBLE);
                }
                else {
                    im.setVisibility(View.INVISIBLE);
                }
            }
        });
    }
}
```

## OUTPUT



ON

OFF



## **EXPERIMENT NO - 6**

Implement Adapters and perform exception handling.

### **CODE**

#### **Activity\_main.xml**

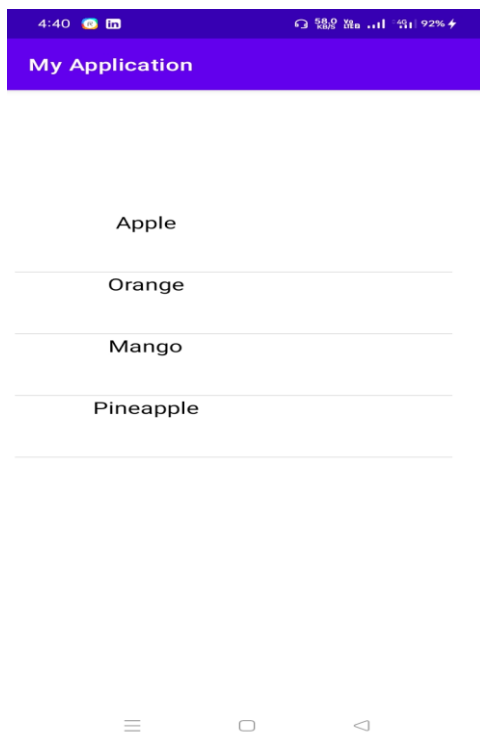
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <ListView
        android:id="@+id/ls"
        android:layout_width="328dp"
        android:layout_height="313dp"
        android:layout_marginBottom="224dp"
        android:background="#00D5AEAE"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.192"
        app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

#### **MainActivity.java**

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.widget.AdapterView;
import android.widget.AdapterView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    ListView ls;
    String[] list = {"Apple", "Orange", "Mango", "Pineapple"};
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ls = findViewById(R.id.ls);
        ArrayAdapter<String> arr = new ArrayAdapter<String>(this,
        android.R.layout.simple_spinner_item, list);
```

```
        try {
            ls.setAdapter(arr);
        }
        catch (Exception e)
        {
            Toast.makeText(this, "Something went wrong",
Toast.LENGTH_SHORT).show();
        }
    }
}
```

## OUTPUT



## **EXPERIMENT NO - 7**

Implement intent to navigate between multiple activities.

### **CODE**

#### **Activity\_main.java**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/first"
        android:layout_width="181dp"
        android:layout_height="62dp"
        android:layout_marginTop="296dp"
        android:text="Home"
        android:textAlignment="center"
        android:textColor="#000000"
        android:textSize="20sp"
        app:layout_constraintBottom_toTopOf="@+id/button"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="172dp"
        android:text="next"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

#### **Activity\_second.xml**

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

```

        android:layout_height="match_parent"
        tools:context=".second">
        <Button
            android:id="@+id/button2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginBottom="188dp"
            android:text="previous"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.445"
            app:layout_constraintStart_toStartOf="parent" />
        <TextView
            android:id="@+id/textView"
            android:layout_width="144dp"
            android:layout_height="90dp"
            android:layout_marginBottom="36dp"
            android:text="Second"
            android:textAlignment="center"
            android:textColor="#000000"
            android:textSize="20sp"
            app:layout_constraintBottom_toTopOf="@+id/button2"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.43"
            app:layout_constraintStart_toStartOf="parent" />
    </androidx.constraintlayout.widget.ConstraintLayout>

```

### MainActivity.java

```

package com.example.intent;
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 btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btn = findViewById(R.id.button);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = new
Intent(MainActivity.this,second.class);
                startActivity(i);
            }
        });
    }
}

```

```

        }
    });
}
}

```

### second.java

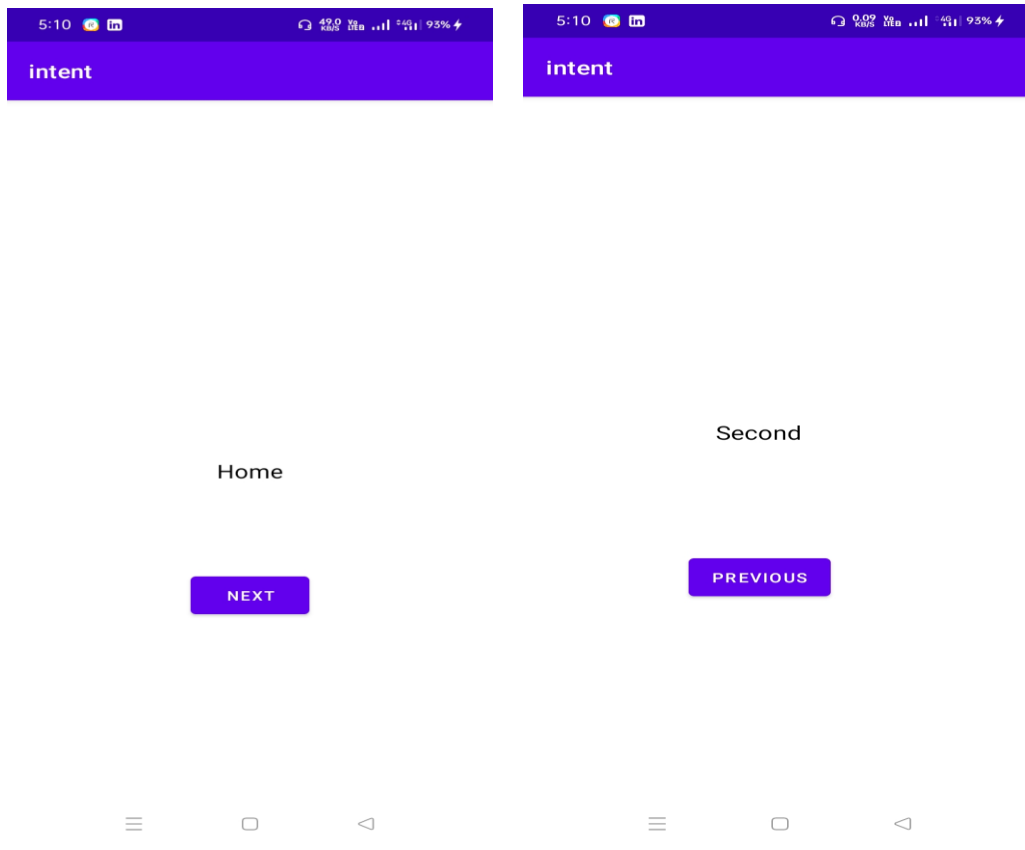
```

package com.example.intent;
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 second extends AppCompatActivity {
    Button bb;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        bb = findViewById(R.id.button2);
        bb.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = new
Intent(second.this, MainActivity.class);
                startActivity(i);
            }
        });
    }
}
}

```



## OUTPUT



## **EXPERIMENT NO - 8**

Develop an application that uses Array Adapter with List View.

### **CODE**

#### **Activity\_main.xml**

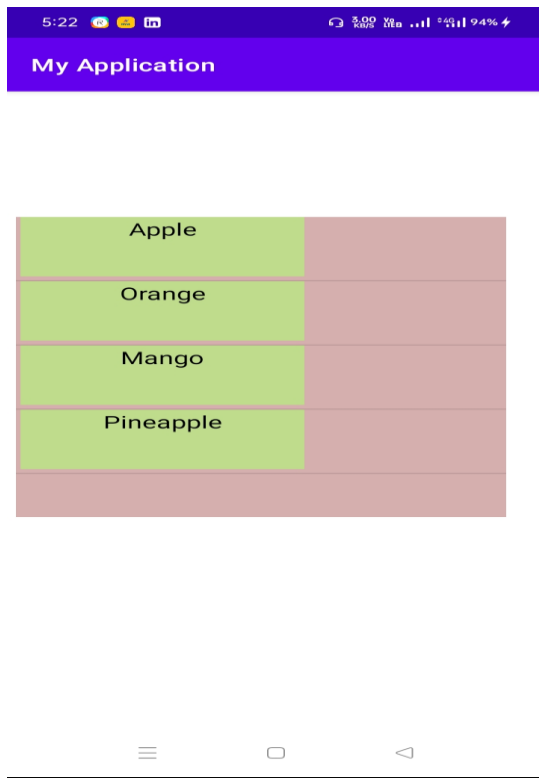
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <ListView
        android:id="@+id/ls"
        android:layout_width="328dp"
        android:layout_height="313dp"
        android:layout_marginBottom="224dp"
        android:background="#D5AEAE"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.192"
        app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

#### **MainActivity.java**

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    ListView ls;
    String[] list = {"Apple", "Orange", "Mango", "Pineapple"};
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ls = findViewById(R.id.ls);
        ArrayAdapter<String> arr = new ArrayAdapter<String>(this,
        android.R.layout.simple_spinner_item, list);
```

```
        ls.setAdapter(arr);  
    }  
}
```

## OUTPUT



## **EXPERIMENT NO - 9**

Develop an application that uses Grid View with images and display Alert box on selection.

### **CODE**

#### **Activity\_main.xml**

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

    <GridView
        android:id="@+id/grid"
        android:layout_width="395dp"
        android:layout_height="636dp"
        android:layout_marginBottom="32dp"
        android:numColumns="2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.489"
        app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

#### **Activity\_list\_v.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=".listV">
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="57dp"
        android:layout_height="55dp"
        android:layout_marginStart="16dp"
        android:layout_marginBottom="36dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:srcCompat="@android:drawable/btn_star_big_on" />
```

```

<TextView
    android:id="@+id/textView"
    android:layout_width="92dp"
    android:layout_height="28dp"
    android:layout_marginBottom="44dp"
    android:text="TextView"
    android:textColor="#000000"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toEndOf="@+id/imageView" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### MainActivity.java

```

package com.example.gridimage;
import static com.example.gridimage.R.layout.activity_list_v;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.GridView;
import android.widget.SimpleAdapter;
import java.util.ArrayList;
import java.util.HashMap;

public class MainActivity extends AppCompatActivity {
    GridView grid;
    int[] im = {R.drawable.pic1,R.drawable.pic2};
    String name[] = {"ship","car"};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        grid = findViewById(R.id.grid);
        ArrayList<HashMap<String, Object>> list = new ArrayList<>();
        for(int i=0;i< name.length;i++)
        {
            HashMap<String, Object> map = new HashMap<>();
            map.put("name", name[i]);
            map.put("image", im[i]);
            list.add(map);
        }
        String[] ff = {"name","image"};
        int kk[] = {R.id.textView,R.id.imageView};
        SimpleAdapter adapter = new
SimpleAdapter(getApplicationContext(),list, activity_list_v, ff, kk);
        grid.setAdapter(adapter);
    }
}

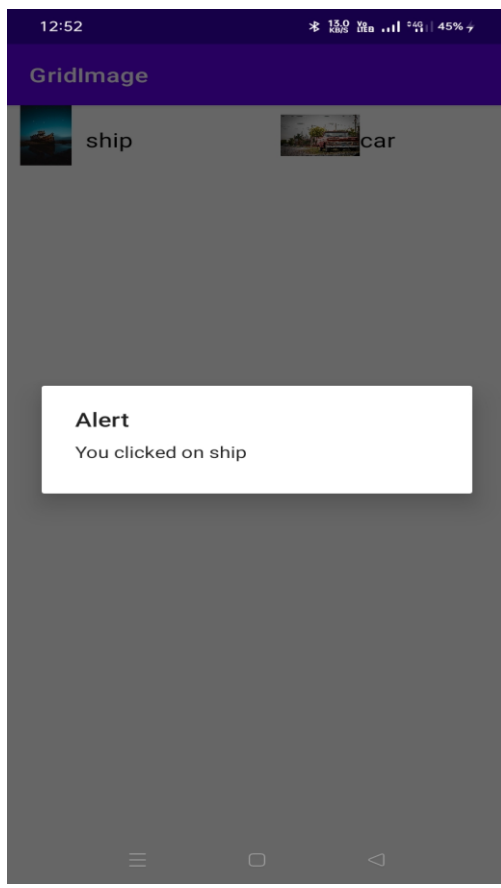
```

```

        grid.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
    @Override
    public void onItemClick(AdapterView<?> adapterView, View
view, int i, long l) {
        AlertDialog.Builder builder = new
AlertDialog.Builder(MainActivity.this);
        builder.setTitle("Alert");
        builder.setMessage("You clicked on "+name[i]);
        AlertDialog al = builder.create();
        al.show();
    }
});
}}

```

## OUTPUT



## **EXPERIMENT NO - 10**

Develop an application that implements Spinner components and performs event handling.

### **CODE**

#### **Activity\_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <Spinner
        android:id="@+id/spinnerd"
        android:layout_width="201dp"
        android:layout_height="41dp"
        android:layout_marginBottom="212dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.285"
        app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

#### **MainActivity.java**

```
package com.example.spinnerapp;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemSelectedListener {
    Spinner ap;
    String[] list = {"Apple", "kiwi", "Mango", "Orange"};
    @SuppressLint("MissingInflatedId")
    @SuppressWarnings("unchecked")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

```

        ap = findViewById(R.id.spinnerd);
        ap.setOnItemClickListener(this);
        ArrayAdapter ar = new ArrayAdapter(this,
        android.R.layout.simple_spinner_item, list);

        ar.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_
        item);
        ap.setAdapter(ar);
    }
    @Override
    public void onItemClick(AdapterView<?> adapterView, View view,
    int i, long l) {
        Toast.makeText(this, "You clicked on "+list[i],
        Toast.LENGTH_SHORT).show();
    }
    @Override
    public void onNothingSelected(AdapterView<?> adapterView) {
        Toast.makeText(this, "", Toast.LENGTH_SHORT).show();
    }
}

```

## OUTPUT

