ANDROID TUTORIAL

L - 3

3rd Sem, MCA

L A B - 2

L2	4. Create an android application to input two numbers and display the sum on button click.
	
	   a) Display result in toast & textview.
	
	   b) Validate the sum action.
	
	   c) Provide Reset button with its functionality.
	
	   d) Customize the app name, and icon.
	
	   e) Customize the UI component with color, font properties.
	
	   f) Make use of String & Color resource files.
	
	   g) Apply different layouts for this; Relative, Constraint and Linear.

CONTENT

- Android Components,
  - ✓ Toast
  - ✓ TextView
  - ✓ EditView
  - ✓ Button
  - ▪ Image
  - ▪ RadioButton
  - ▪ CheckBox

L A B - 3

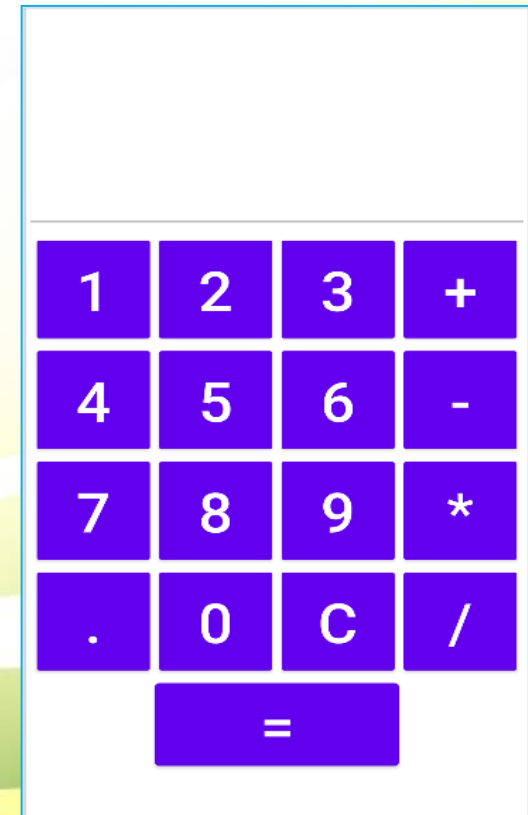|	

L3	5. Create an android application that accepts basic user info and displays the same.
	
	   a) Make use of TextView, EditView, Button, RadioButton, CheckBox, Image, nested layouts etc.
	
	   b) Display suitable toast for any radiobutton/checkbox selection.
	
	6. Create simple application of calculator (GUI).

CODE**

```xml
<RelativeLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/edt1"
    android:layout_marginTop="3dp">


<RelativeLayout
    android:id="@+id/rel1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">


<Button
    android:id="@+id/button1"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="100dp"
    android:layout_height="100dp"
    android:layout_alignParentTop="true"
    android:layout_marginLeft="5dp"
```

CODE**

```java
package com.example.calc;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;
```

```java
public class MainActivity extends AppCompatActivity {

    Button button0, button1, button2, button3, button4, button5, button6,
            button7, button8, button9, buttonAdd, buttonSub, buttonDivision,
            buttonMul, button10, buttonC, buttonEqual, button33;

    EditText editText1;

    float mValueOne, mValueTwo;

    boolean addition1, mSubtract, multiplication1, division1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);
```

```java
    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        button0 = (Button) findViewById(R.id.button0);

        button1 = (Button) findViewById(R.id.button1);

        button2 = (Button) findViewById(R.id.button2);

        button3 = (Button) findViewById(R.id.button3);
```

```java
    button1.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) { editText1.setText(editText1.getText() + "1"); }
    });


    button2.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) { editText1.setText(editText1.getText() + "2"); }
    });
```

CODE**

```java
buttonAdd.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {

        if (editText1 == null) {
            editText1.setText("");
        } else {
            mValueOne = Float.parseFloat( s: editText1.getText() + "");
            addition1 = true;
            editText1.setText(null);
        }
    }
});
```

```java
buttonEqual.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        mValueTwo = Float.parseFloat( s: editText1.getText() + "");

        if (addition1 == true) {
            editText1.setText(mValueOne + mValueTwo + "");
            addition1 = false;
        }


        if (mSubtract == true) {
            editText1.setText(mValueOne - mValueTwo + "");
            mSubtract = false;
        }
    }
```

```java
buttonC.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) { editText1.setText(""); }
});
```

```xml
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingLeft="20dp"
    android:paddingTop="20dp"
    tools:context=".MainActivity">
<RelativeLayout
    android:id="@+id/relativeName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:padding="10dp">
<TextView
    android:id="@+id/textviewname"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerVertical="true"
    android:text="Name"></TextView>
<EditText
    android:id="@+id/editviewname"
    android:layout_width="150dp"
```

Name   Shameem

◉ Male   ○ Female

☑ Sports ☐ Art ☑ Social Work

CLICK ME

Hello Shameem

Shameem is Male
Shameem likes Sports, Social work

```xml
<RadioGroup
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/radiogrp"
    android:layout_below="@id/relativeName"
    android:layout_centerHorizontal="true"
    android:orientation="horizontal"
    android:paddingLeft="20dp"
    android:paddingRight="20dp">
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male"
        android:id="@+id/rdmale"></RadioButton>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female"
        android:layout_marginLeft="20dp"
        android:checked="true"
        android:id="@+id/rdfemale"></RadioButton>
</RadioGroup>
```

Name   Shameem

◉ Male   ◯ Female

☑ Sports   ☐ Art   ☑ Social Work

CLICK ME

Hello Shameem

Shameem is Male
Shameem likes Sports, Social work

CODE**

```xml
<RelativeLayout
    android:id="@+id/relativeHobby"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/radiogrp"
    android:layout_centerHorizontal="true"
    android:padding="10dp">
<CheckBox
    android:id="@+id/chkSport"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Sports"></CheckBox>
<CheckBox
    android:id="@+id/chkArt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="10dp"
    android:layout_toRightOf="@id/chkSport"
    android:text="Art"
    android:checked="true"></CheckBox>
```

```xml
<ImageView
    android:id="@+id/imageView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/textview1"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="20dp"/>
<RelativeLayout
    android:id="@+id/relativeshow"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:padding="20dp"
    android:layout_marginTop="20dp"
    android:layout_below="@id/imageView">
<TextView
    android:id="@+id/textviewShow"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:text="No info found..."
    android:textStyle="italic"/>
```


Name Shameem

◉ Male ○ Female

☑ Sports ☐ Art ☑ Social Work

CLICK ME

Hello Shameem

Shameem is Male
Shameem likes Sports, Social work

CODE**

```java
package com.example.test_checking;
import ...
public class MainActivity extends AppCompatActivity implements View.OnClickListener{

    private TextView textview1, textviewshow;
    private Button button1;
    private EditText editviewname;
    private CheckBox chkSport, chkArt, chkSocial;
    private RadioGroup rdgrp;
    private ImageView img;
    String gender="";

    @Override
    public void onClick(View view) {
        switch (view.getId()) {
            case R.id.button1:
                String hobby="";
                Editable name = editviewname.getText();
```

CODE**

```java
@Override                                                          ⚠14 ⚠1 ✅4 ︿ ﹀
public void onClick(View view) {
    switch (view.getId()) {
        case R.id.button1:
            String hobby="";
            Editable name = editviewname.getText();
            if(chkSport.isChecked())
                hobby = "Sports";
            if(chkArt.isChecked())
                hobby = hobby + ", Art";
            if(chkSocial.isChecked())
                hobby = hobby + ", Social work";
            textview1.setText("Hello " + name);
            textview1.setTextColor(getResources().getColor(R.color.black));
            textviewshow.setText(name + " is " + gender + "\n" + name + " likes " + hobby);
            img.setBackground(getResources().getDrawable(R.drawable.joker));
            Toast.makeText( context: MainActivity.this,  text: "Button Clicked", Toast.LENGTH_SHO
    }
}
```

CODE**

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


    textview1 = findViewById(R.id.textview1);
    button1 = findViewById(R.id.button1);
    editviewname = findViewById(R.id.editviewname);
    chkSocial = findViewById(R.id.chkSocialWork);
    chkArt = findViewById(R.id.chkArt);
    chkSport = findViewById(R.id.chkSport);
    textviewshow = findViewById(R.id.textviewShow);
    rdgrp = findViewById(R.id.radiogrp);
    img = findViewById(R.id.imageView);


    button1.setOnClickListener(this);
```

CODE**

```java
chkSport.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton compoundButton, boolean b) {
        if (b)
            Toast.makeText( context: MainActivity.this, text: "Hobby is Sports", Toast.
    }
});

rdgrp.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(RadioGroup radioGroup, int i) {
        switch (i){
            case R.id.rdfemale:
                gender = "Female";
                break;
            case R.id.rdmale:
                gender = "Male";
                break;
            default:
```