

PROGRAM INDEX

Sr. No.	Program Statement	Page No.	Date	Sign
1	Demonstrate different Layouts with different views in android LayoutsConstraintLayout, RelativeLayout, TableLayout Views- Button, TextView, EditText, WebView, CheckBox, RadioButton, ToggleButton, ImageButton, RatingBar, ProgressBar, SeekBar, VideoView, DatePicker, CalendarView, Spinner	2		
2	Write an android code to make phone call using Intent.	21		
3	Write an android code to turn ON/OFF Bluetooth.	24		
4	Write an android code to turn ON /OFF the Wi-Fi.	27		
5	Design android application for login activity. Write android code to check login credentials with username = "mca" and password = "android". Display appropriate toast message to the user.	30		
6	Create a fragment that has its own UI and enable your activities to communicate with fragments.	32		
7	Demonstrate Array Adapter using List View to display list of fruits.	36		
8	Write an application to demonstrate Alert Dialog Box in android.	38		
9	Demonstrate Options Menu, Context Menu and Popup Menu in android.	40		
10	Write an application to produce Notification.	43		
11	Write an android application using SQLite to create table and perform CRUD operations (Example. COURSE table (ID, Name, Duration, Description), perform ADD, UPDATE, DELETE and READ operations)	46		
12	Create an Android app, powered by Firebase Realtime database that supports: Adding Data to Firebase Realtime database, Retrieving Data from Firebase and Deleting data from firebase data.	52		
13	Demonstrate WebView to display the web pages in an android application.	60		
14	Write an android app to write JSON data into a file and read JSON data from created file.	64		
15	Write an application to display a PDF as an image in React app using URL.	66		
16	Develop simple flutter application to open a browser using Android SDK.	68		

Q1. Demonstrate different Layouts with different views in androidLayoutsConstraintLayout, RelativeLayout, TableLayout Views- Button, TextView, EditText, WebView, CheckBox, RadioButton, ToggleButton, ImageButton, RatingBar, ProgressBar, SeekBar, VideoView, DatePicker, CalendarView, Spinner

1.1 ConstraintLayout with Button, RadioButton, ToggleButton, ImageButton

Java File:

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

XML File:

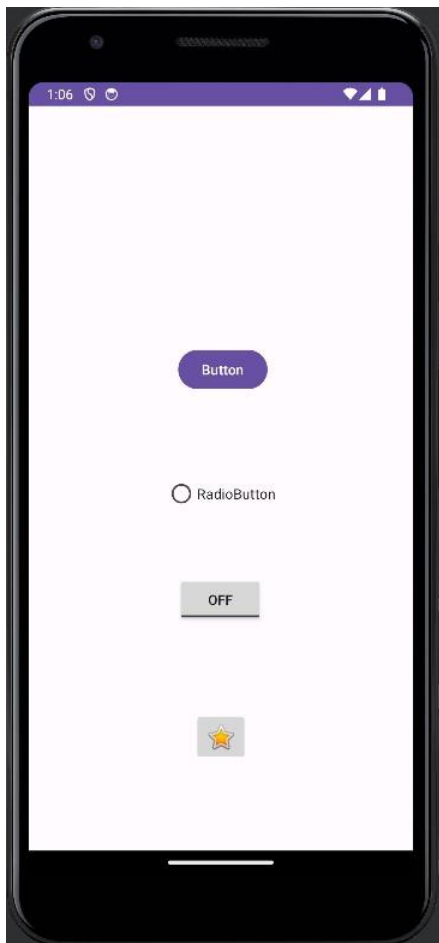
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button"
        app:layout_constraintBottom_toTopOf="@+id/radioButton"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.507"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.757" />
    <RadioButton
        android:id="@+id/radioButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="60dp"
        android:text="RadioButton"
```

```

        app:layout_constraintBottom_toTopOf="@+id/toggleButton"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent" /> <ToggleButton
android:id="@+id/toggleButton"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="232dp"
android:text="ToggleButton"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent" />
    <ImageButton    android:id="@+id/imageButton"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/toggleButton"
app:srcCompat="@android:drawable/btn_star_big_on" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

OUTPUT:



1.2 Relative Layout with TextView

Java File:

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import
android.widget.EditText; import
android.widget.TextView;
public class MainActivity extends AppCompatActivity {

    Button btn;
    EditText editText;
    TextView textView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        btn = findViewById(R.id.button);
        editText = findViewById(R.id.editTextTextPersonName);
        textView = findViewById(R.id.textView);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String userText = editText.getText().toString();
                textView.setText(userText);
            }
        });
    }
}
```

XML File:

```
<?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">

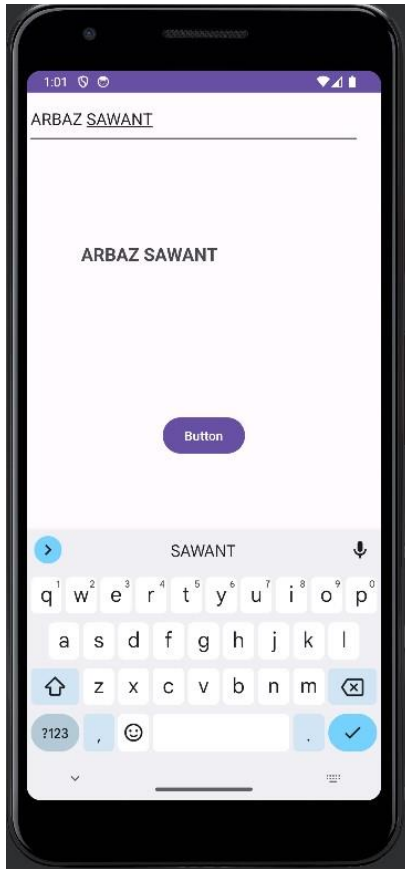
    <RelativeLayout
        xmlns:android="http://schemas.android.com/apk/res/android"
        xmlns:tools="http://schemas.android.com/tools"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".MainActivity">
```

```

<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="370dp"
    android:layout_height="59dp"        android:ems="10"
    android:inputType="textPersonName"
    android:text="Name" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="Button" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/editTextTextPersonName"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="181dp"
        android:layout_marginBottom="-133dp"
        android:textStyle="bold"
        android:textSize="20dp"        android:text="TextView"
    />
</RelativeLayout>
</androidx.constraintlayout.widget.ConstraintLayout>

```

OUTPUT:



1.3 CheckBox

Java File:

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import
android.widget.CheckBox; import
android.widget.TextView;
public class MainActivity extends AppCompatActivity {
    CheckBox Java, Android, Python;
    String courses = "Selected ";
    TextView firstTV;
    Button selectBtn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);    Java =
        findViewById(R.id.java);
        Android = findViewById(R.id.android);
        Python    =    findViewById(R.id.python);
        firstTV    =    findViewById(R.id.textView);
        selectBtn = findViewById(R.id.button);
        selectBtn.setOnClickListener(new View.OnClickListener() {
```

```

        @Override        public
void onClick(View v) {
    courses = "Selected ";        if
    (Java.isChecked()) {
        courses += Java.getText().toString() + " .";
    firstTV.setText(courses);
    }
    if (Android.isChecked()) {
        courses += Android.getText().toString() + " .";
        firstTV.setText(courses);
    }
    if (Python.isChecked()) {
        courses += Python.getText().toString() + " .";
        firstTV.setText(courses);
    }
    }
    });
}
}

```

Manifest File:

//copy this code in res folder -> values folder -> colors.xml -> inside resources element
<color name="teal_700">#ff009688</color>

XML File:

```

<?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/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Hello World!"
    android:textStyle="bold"        android:textSize="20dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"

```

```

app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.484" />
    <CheckBox    android:id="@+id/java"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="60dp"
    android:text="Java"
android:textStyle="bold"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.135"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
    <CheckBox    android:id="@+id/android"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="24dp"
    android:text="Android"    android:textStyle="bold"
app:layout_constraintEnd_toEndOf="@+id/java"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="@+id/java"
app:layout_constraintTop_toBottomOf="@+id/java" />
    <CheckBox
android:id="@+id/python"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:text="Python"
android:textStyle="bold"
    app:layout_constraintBottom_toTopOf="@+id/textView"
app:layout_constraintEnd_toEndOf="@+id/android"
app:layout_constraintStart_toStartOf="@+id/android"
app:layout_constraintTop_toBottomOf="@+id/android"
app:layout_constraintVertical_bias="0.173" />
    <TextView
android:id="@+id/textView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:text="Courses"
android:textStyle="bold"    android:textSize="20dp"
android:textColor="@color/teal_700"
app:layout_constraintBottom_toTopOf="@+id/java"
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:text="Select"
    app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"

```

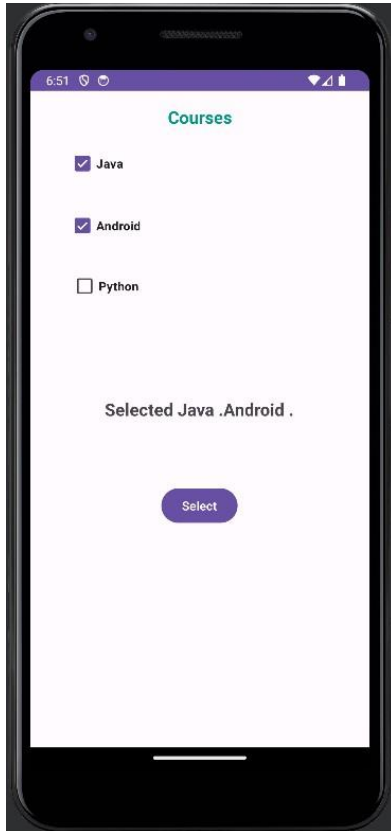


```

app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView"
app:layout_constraintVertical_bias="0.225" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

OUTPUT:



1.4 TableLayout

Java File:

```

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

```

XML File:

```

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

```

```

    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginTop="100dp"
    android:paddingLeft="10dp"    android:paddingRight="10dp" >
        <TableRow android:background="#0079D6" android:padding="5dp">
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="UserId" />
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"    android:text="User
                Name" />
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"    android:text="Location"
            />
        </TableRow>
        <TableRow android:background="#DAE8FC" android:padding="5dp">
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="1" />    <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="Arbaz Sawant" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"    android:text="Pune"
/>
</TableRow>
<TableRow android:background="#DAE8FC" android:padding="5dp">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="2" />    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

```

```

        android:layout_weight="1"
        android:text="Munib Kokate" />
        <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Pune" />
    </TableRow>
    <TableRow android:background="#DAE8FC" android:padding="5dp">
        <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="3" />
        <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Ubaid Kapdi" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Pune"
        />
    </TableRow>
</TableLayout>

```

OUTPUT:



1.5 LinearLayout with ProgressBar, SeekBar and RatingBar

Java File:

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import
android.widget.ProgressBar; import
android.widget.SeekBar; import
android.widget.TextView; import java.util.Timer;
import java.util.TimerTask;
public class MainActivity extends AppCompatActivity {
    ProgressBar pb;
    TextView tv1,tv2;
```

```

    SeekBar sb;
    Button btn;
    int counter = 0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        pb = findViewById(R.id.progressBar2);
        sb = findViewById(R.id.seekBar2);
        tv1 = findViewById(R.id.textView);
        tv2 = findViewById(R.id.textView2);
        btn = findViewById(R.id.button);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                progbar();
            }
        });
        sb.setOnSeekBarChangeListener(new
            SeekBar.OnSeekBarChangeListener() {
                int i = 0;
                @Override
                public void onProgressChanged(SeekBar seekBar, int
                    progress, boolean fromUser) {
                    i = progress;
                    tv2.setText(""+i);
                }
                @Override
                public void onStartTrackingTouch(SeekBar seekBar) {
                }
                @Override
                public void onStopTrackingTouch(SeekBar seekBar) {
                }
            });
    }
    private void progbar() {
        final
        Timer t = new Timer();
        TimerTask tt = new TimerTask() {
            @Override
            public void run() {
                counter++;
                pb.setProgress(counter);
                tv1.setText(""+counter+"%");
                if(counter == 100)
                {
                    t.cancel();
                }
            }
        };
        t.schedule(tt, 1, 100);
    }

```

```

    }
}

```

XML File:

```

<?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:padding="15dp"
tools:context=".MainActivity">
    <ProgressBar
        android:id="@+id/progressBar2"
style="?android:attr/progressBarStyleHorizontal"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="10dp"
android:layout_marginBottom="10dp"/>
    <TextView
android:id="@+id/textView"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="1dp"
android:textStyle="bold"
android:textSize="25dp"
android:textAlignment="center"
android:layout_marginBottom="40dp"
        android:text="0%" />    <SeekBar
android:id="@+id/seekBar2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="10dp"
android:layout_marginBottom="10dp"/>
    <TextView
        android:id="@+id/textView2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="5dp"
android:layout_marginBottom="15dp"    android:textStyle="bold"
android:textSize="25dp"    android:textAlignment="center"
android:text="0" />    <RatingBar    android:id="@+id/ratingBar"
android:layout_width="240dp"
android:layout_height="wrap_content"
android:layout_marginTop="20dp"
android:layout_marginLeft="50dp"
android:layout_marginBottom="15dp"/>

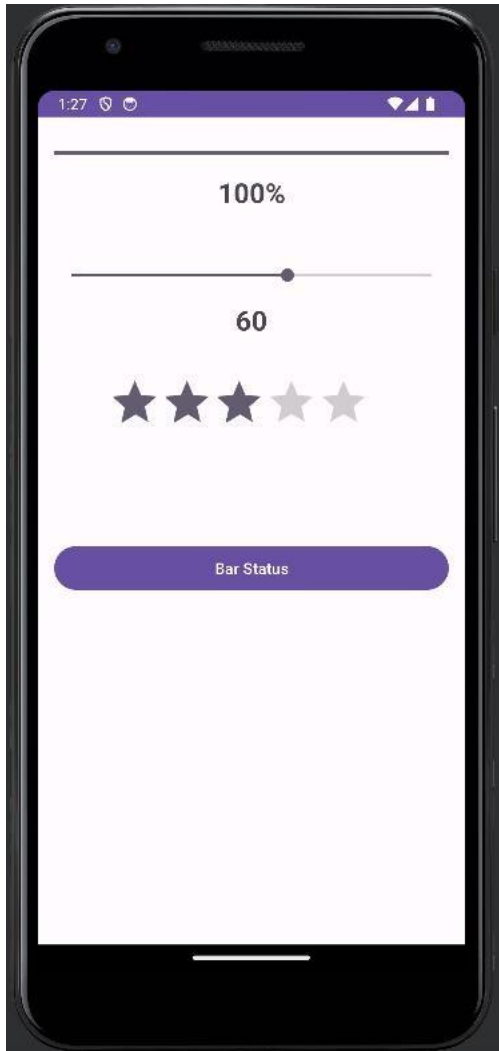
```

```

<Button      android:id="@+id/button"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="80dp"
android:text="Bar Status" />
</LinearLayout>

```

OUTPUT:



1.6 DatePicker with different view like Calendar and Spinner

Java File:

```

package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
android.app.DatePickerDialog; import
android.app.TimePickerDialog; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import
android.widget.DatePicker; import
android.widget.EditText; import
android.widget.TimePicker; import java.util.Calendar;

```

```

public class MainActivity extends AppCompatActivity implements
    View.OnClickListener
{
    Button btnDatePicker, btnTimePicker;
    EditText txtDate, txtTime;
    private int mYear, mMonth, mDay, mHour, mMinute;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btnDatePicker=(Button)findViewById(R.id.btn_date);
        btnTimePicker=(Button)findViewById(R.id.btn_time);
        txtDate=(EditText)findViewById(R.id.in_date);
        txtTime=(EditText)findViewById(R.id.in_time);
        btnDatePicker.setOnClickListener(this);
        btnTimePicker.setOnClickListener(this);
    }
    @Override public void
    onClick(View v) {    if (v ==
    btnDatePicker) {    // Get
    Current Date
        final Calendar c = Calendar.getInstance();
        mYear = c.get(Calendar.YEAR);        mMonth =
        c.get(Calendar.MONTH);        mDay =
        c.get(Calendar.DAY_OF_MONTH);
        DatePickerDialog datePickerDialog = new
        DatePickerDialog(this,
            new DatePickerDialog.OnDateSetListener() {
                @Override
                public void onDateSet(DatePicker view, int
year,
                    int monthOfYear, int
                    dayOfMonth)    {
txtDate.setText(dayOfMonth    +    "-"    +
(monthOfYear + 1) + "-" + year);
                }
            }, mYear, mMonth, mDay);
        datePickerDialog.show();
    }
    if (v == btnTimePicker) {
        // Get Current Time        final Calendar
c = Calendar.getInstance();        mHour =
c.get(Calendar.HOUR_OF_DAY);        mMinute
= c.get(Calendar.MINUTE);        // Launch Time
Picker Dialog
        TimePickerDialog timePickerDialog = new
        TimePickerDialog(this,
            new TimePickerDialog.OnTimeSetListener() {
                @Override

```



```

        public void onTimeSet(TimePicker view, int
hourOfDay,
int minute) {
txtTime.setText(hourOfDay + ":" +
minute);
    }
    }, mHour, mMinute, false);
    timePickerDialog.show();
}
}
}

```

XML File:

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <EditText
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:id="@+id/in_date"
        android:layout_marginTop="82dp"
        android:layout_alignParentTop="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true" />
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="SELECT DATE"
        android:id="@+id/btn_date"
        android:layout_alignBottom="@+id/in_date"
        android:layout_toRightOf="@+id/in_date"
        android:layout_toEndOf="@+id/in_date" />
    <EditText
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:layout_below="@+id/in_date"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true" />
        android:id="@+id/in_time"

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="SELECT TIME"
        android:id="@+id/btn_time"
        android:layout_below="@+id/btn_date"

```

```

android:layout_alignLeft="@+id/btn_date"
android:layout_alignStart="@+id/btn_date" />
</RelativeLayout>

```

OUTPUT:



1.7 VideoView

XML File:

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    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/txtPlaceholder"
        android:layout_width="wrap_content"

```

```

android:layout_height="wrap_content"
android:layout_above="@+id/videoView"
android:layout_centerHorizontal="true"
android:layout_margin="16dp"
    android:text="DOUBLE TAP TO VIEW CONTROLS"
    android:textStyle="bold" />
<VideoView
android:id="@+id/videoView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerHorizontal="true"
android:layout_centerVertical="true" />
</RelativeLayout>

```

Manifest File:

//copy this code in manifests folder -> AndroidManifest.xml -> inside manifest element

```

<uses-permission android:name="android.permission.INTERNET" />

```

Java File:

```

package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.media.MediaPlayer; import
android.widget.MediaController; import
android.net.Uri; import android.os.Bundle; import
android.os.Environment; import android.util.Log;
import android.view.Menu; import
android.widget.Toast; import
android.widget.VideoView; import java.util.ArrayList;
import java.util.Arrays;
public class MainActivity extends AppCompatActivity {
    VideoView videoView;
    ArrayList<String> arrayList = new
        ArrayList<>(Arrays.asList("https://commondatastorage.googleapis.com/gtv-
videosbucket/sample/BigBuckBunny.mp4",
        "https://commondatastorage.googleapis.com/gtv-videosbucket/sample/ElephantsDream.mp4"));
    int index = 0;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);    videoView
        = findViewById(R.id.videoView);    final
        MediaController mediacontroller = new
        MediaController(this);
        mediacontroller.setAnchorView(videoView);
        videoView.setMediaController(mediacontroller);
    }
}

```

```

videoView.setVideoURI(Uri.parse(arrayList.get(index)));
videoView.requestFocus();
videoView.setOnCompletionListener(new MediaPlayer.OnCompletionListener() {
    @Override
    public void onCompletion(MediaPlayer mp) {
        Toast.makeText(getApplicationContext(), "Video over", Toast.LENGTH_SHORT).show();
    if (index++ == arrayList.size()) {
        index = 0;
    mp.release();
        Toast.makeText(getApplicationContext(), "Video over", Toast.LENGTH_SHORT).show();
    } else {

        videoView.setVideoURI(Uri.parse(arrayList.get(index)));
    videoView.start();
    }
    }
});

videoView.setOnErrorListener(new MediaPlayer.OnErrorListener() {
    @Override
    public boolean onError(MediaPlayer mp, int what, int
extra) {
        Log.d("API123", "What " + what + " extra " + extra);
    return false;
    }
});
}
}

```

OUTPUT:



Q2. Write an android code to make phone call using Intent.

Java File:

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri; import
android.os.Bundle; import
android.view.View; import
android.widget.Button; import
android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    EditText et;
    Button call_btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        et=(EditText)findViewById(R.id.editText1);
```

```

call_btn=(Button)findViewById(R.id.button1);
call_btn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent i = new Intent(Intent.ACTION_CALL);

        i.setData(Uri.parse("tel:"+et.getText().toString()));
        startActivity(i);
    }
});
}
}

```

XML File:

```

<?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">
    <RelativeLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="vertical"
tools:ignore="MissingConstraints">
        <TextView
            android:id="@+id/textView1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Dial No." />
        <Button
            android:id="@+id/button1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_alignLeft="@+id/textView1"
            android:layout_below="@+id/textView1"

```

```

    android:layout_marginLeft="44dp"
    android:layout_marginTop="84dp"
        android:text="Call" />
    <EditText
        android:id="@+id/editText1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/textView1"
    android:layout_below="@+id/textView1"
    android:layout_marginLeft="18dp"
        android:ems="10" >
        <requestFocus />
    </EditText>
</RelativeLayout>
</androidx.constraintlayout.widget.ConstraintLayout>

```

Manifest File:

//copy this code in manifests folder -> AndroidManifest.xml -> inside manifest element

```

<uses-permission android:name="android.permission.CALL_PHONE" />

```

OUTPUT:



Q3. Write an android code to turn ON/OFF Bluetooth.

Java File:

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
androidx.appcompat.widget.SwitchCompat; import
android.bluetooth.BluetoothAdapter; import
android.content.Intent; import android.os.Bundle;
import android.widget.CompoundButton; import
android.widget.Switch; import
android.widget.TextView;
public class MainActivity extends AppCompatActivity {
    Switch sw;
    TextView textView;
    BluetoothAdapter bt;
    Intent bluetoothIntent;
```



```

int i = 1;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);    sw =
findViewById(R.id.switchBT);    textView =
findViewById(R.id.txtBTStatus);    bt =
BluetoothAdapter.getDefaultAdapter();
    sw.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
        @Override
        public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
if(isChecked){
            bluetoothEnable();
        }
        else{
            bluetoothDisable();
        }
    }
});
}
public void bluetoothEnable(){
    bluetoothIntent = new Intent(BluetoothAdapter.ACTION_REQUEST_ENABLE);
startActivityForResult(bluetoothIntent, i);    textView.setText("Bluetooth is ON");
}
public void bluetoothDisable(){
bt.disable();
    textView.setText("Bluetooth is OFF");
}
}

```

XML File:

```

<?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/txtBTStatus"
android:layout_width="272dp"
android:layout_height="50dp"

```

```

android:layout_alignParentStart="true"
android:layout_alignParentTop="true"
android:layout_alignParentEnd="true"
android:hint="Bluetooth Status"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.496"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.635"
tools:ignore="MissingConstraints" />
    <Switch        android:id="@+id/switchBT"
android:layout_width="134dp"
android:layout_height="44dp"
android:layout_below="@+id/txtBTStatus"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
        android:text="Switch"
        app:layout_constraintBottom_toTopOf="@+id/txtBTStatus"
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="0.738"

        tools:ignore="MissingConstraints,UseSwitchCompatOrMaterialXml" />
</androidx.constraintlayout.widget.ConstraintLayout>

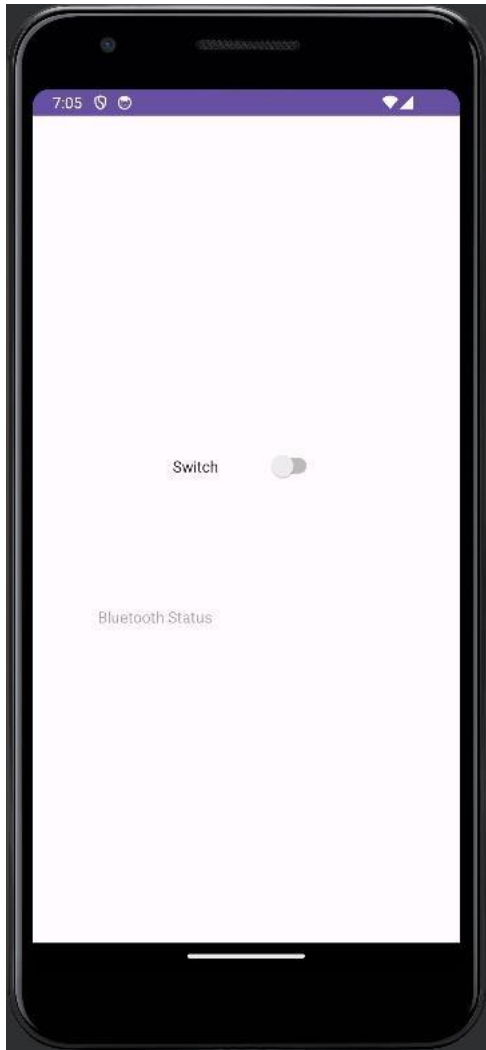
```

Manifest File:

```

//copy this code in manifests folder -> AndroidManifest.xml -> inside manifest element
<uses-permission android:name="android.permission.BLUETOOTH"/>
<uses-permission android:name="android.permission.BLUETOOTH_ADMIN"/>
<uses-permission android:name="android.permission.BLUETOOTH_CONNECT"/> OUTPUT:

```



Q4. Write an android code to turn ON/OFF the Wi-Fi.

Java File:

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
android.content.Context; import
android.net.wifi.WifiManager; import
android.os.Bundle; import
android.widget.CompoundButton; import
android.widget.TextView; import
android.widget.ToggleButton;
public class MainActivity extends AppCompatActivity {
    ToggleButton toggleButton;
    TextView textView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);    toggleButton
        = findViewById(R.id.toggleButton);    textView =
        findViewById(R.id.textView);
```

```

toggleButton.setOnCheckedChangeListener(new
                                CompoundButton.OnCheckedChangeListener() {

    @Override
    public void onCheckedChanged(CompoundButton buttonView,
                                boolean checked) {

if(checked){
textView.setText("Wifi is ON");
WifiManager wifi = (WifiManager)
                                getApplicationContext().getSystemService(Context.WIFI_SERVICE);
wifi.setWifiEnabled(true);
    }
    else{
        textView.setText("Wifi is OFF");
WifiManager wifi = (WifiManager)
                                getApplicationContext().getSystemService(Context.WIFI_SERVICE);
wifi.setWifiEnabled(false);
    }
    }
});
if(toggleButton.isChecked()){
textView.setText("Wifi is ON");    WifiManager
wifi = (WifiManager)
                                getApplicationContext().getSystemService(Context.WIFI_SERVICE);
wifi.setWifiEnabled(true);
    }
    else{
        textView.setText("Wifi is OFF");
WifiManager wifi = (WifiManager)
                                getApplicationContext().getSystemService(Context.WIFI_SERVICE);
wifi.setWifiEnabled(false);
    }
}
}

```

XML File:

```

<?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">
    <ToggleButton
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        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="0.427" />
    <TextView        android:id="@+id/textView"
android:layout_width="136dp"
android:layout_height="38dp"        android:text="TextView"
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/toggleButton"
        app:layout_constraintVertical_bias="0.166" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Manifest File:

//copy this code in manifests folder -> AndroidManifest.xml -> inside manifest element

```

<uses-permission
android:name="android.permission.ACCESS_WIFI_STATE"/>
<uses-permission
android:name="android.permission.CHANGE_WIFI_STATE"/>

```

Output:



Q5. Design android application for login activity. Write android code to check login credentials with username = "mca" and password = "android". Display appropriate toast message to the user.

Java File:

```
package com.example.myapplication;
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 {
    Button btn;
    EditText edUser, edPassword;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);    btn =
```

```

findViewById(R.id.btnLogin);    edUser =
findViewById(R.id.txtUsername);    edPassword =
findViewById(R.id.txtPassword);
btn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if(edUser.getText().toString().equals("mca") &&
edPassword.getText().toString().equals("android")){
            Toast.makeText(getApplicationContext(), "Login Successful! kindly wait you are being
redirecting to dashboard.",Toast.LENGTH_LONG).show();
        }
    else{
        Toast.makeText(getApplicationContext(),
            "Something went wrong! Kindly check the credentials.",
Toast.LENGTH_LONG).show();
        }
    }
});
}
}

```

XML File:

```

<?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">
    <EditText
        android:id="@+id/txtUsername"
        android:layout_width="241dp"
        android:layout_height="50dp"    android:ems="10"
        android:hint="Username"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.333"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.301" />
    <EditText    android:id="@+id/txtPassword"
        android:layout_width="246dp"
        android:layout_height="43dp"    android:ems="10"
        android:hint="Password"    android:inputType="textPassword"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.333"

```

```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/txtUsername"
app:layout_constraintVertical_bias="0.103" />
    <Button        android:id="@+id/btnLogin"
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_constraintHorizontal_bias="0.349"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/txtPassword"
    app:layout_constraintVertical_bias="0.184"
tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

OUTPUT:



Q6. Create a fragment that has its own UI and enable your activities to communicate with fragments.


```

Activity_man.xml ::
    <?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical" tools:context=".MainActivity">
    <Button
        android:id="@+id/firstFragment"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" android:text="First
        Fragment" android:textColor="@color/white"
        android:textSize="20sp" />
    <Button
        android:id="@+id/secondFragment"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp" android:text="Second
        Fragment" android:textColor="@color/white"
        android:textSize="20sp" />
    <FrameLayout
        android:id="@+id/frameLayout"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginTop="10dp" /> </LinearLayout>

```

```

Fragment_first.xml ::
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent" android:layout_height="match_parent"
>
<!--TextView and Button displayed in First Fragment -->
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="100dp"        android:text="This
is First Fragment"        android:textColor="@color/black"
    android:textSize="25sp" />
<Button
    android:id="@+id/firstButton"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:layout_marginLeft="20dp"
    android:layout_marginRight="20dp"
    android:text="First Fragment"
    android:textColor="@color/white"
    android:textSize="20sp"        android:textStyle="bold"
/>
</RelativeLayout>

Fragment_second.xml ::
    <?xml version="1.0" encoding="utf-8"?>
    <RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent" android:layout_height="match_parent"
    >
    <!--TextView and Button displayed in First Fragment -->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="100dp"        android:text="This
is First Fragment"        android:textColor="@color/black"
        android:textSize="25sp" />
    <Button
        android:id="@+id/firstButton"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:layout_marginLeft="20dp"
        android:layout_marginRight="20dp"
        android:text="First Fragment"
        android:textColor="@color/white"
        android:textSize="20sp"        android:textStyle="bold"
    />
    </RelativeLayout>

```

```

MainActivity.java ::      package
com.example.icem_pr_6_fragment; import
android.app.Fragment; import android.os.Bundle;
import android.view.LayoutInflater; import
android.view.View; import
android.view.ViewGroup; import
android.widget.Button; import
android.widget.Toast;
public class FirstFragment extends Fragment {
    View view;
    Button firstButton;
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup
container,
                                Bundle savedInstanceState) {
// Inflate the layout for this fragment
    view = inflater.inflate(R.layout.fragment_first, container,
false); // get the reference of Button
    firstButton = (Button) view.findViewById(R.id.firstButton);
// perform setOnClickListener on first Button
    firstButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Toast.makeText(getActivity(), "First Fragment",
                Toast.LENGTH_LONG).show();
        }
    });
    return view;
}
}

```

```

FirstFragment.java ::      package
com.example.icem_pr_6_fragment;      import
android.app.Fragment;      import
android.os.Bundle;      import
android.view.LayoutInflater;      import
android.view.View;      import
android.view.ViewGroup;      import
android.widget.Button;      import
android.widget.Toast;
public class FirstFragment extends Fragment {
    View view;
    Button firstButton;
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup
container,
                                Bundle savedInstanceState) {
view = inflater.inflate(R.layout.fragment_first, container,
false);
    firstButton = (Button) view.findViewById(R.id.firstButton);
firstButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Toast.makeText(getActivity(), "First Fragment",
            Toast.LENGTH_LONG).show();
    }
});
    return view;
}
}

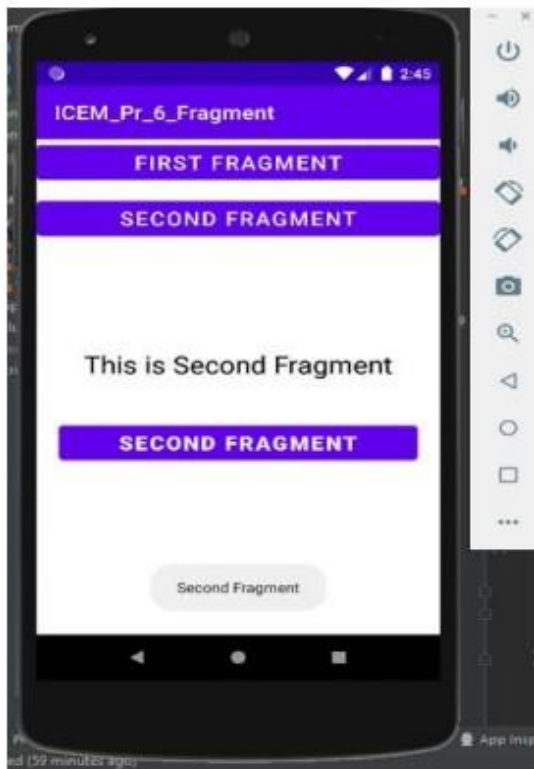
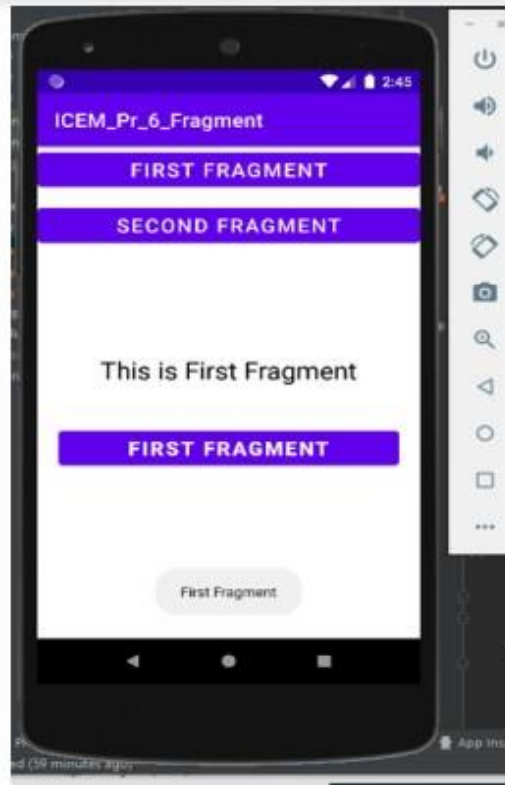
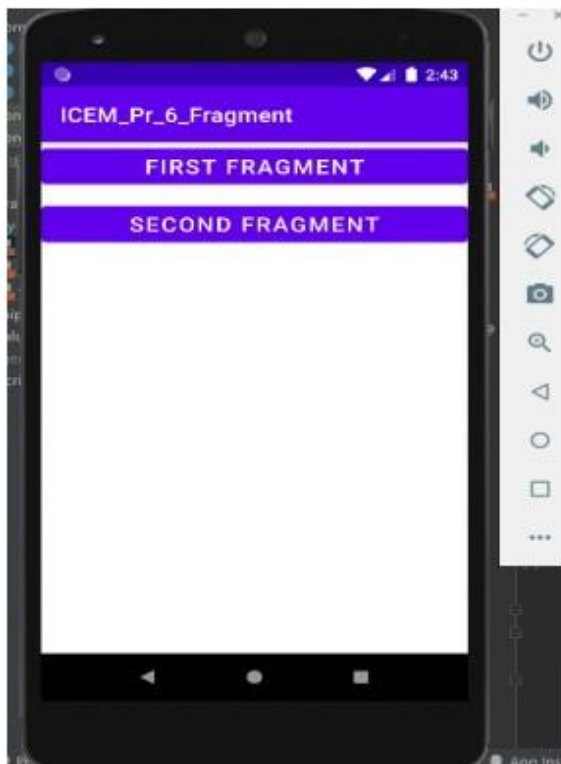
```

```

SecondFragment.java ::      package
com.example.icem_pr_6_fragment;      import
android.app.Fragment;      import
android.os.Bundle;      import
android.view.LayoutInflater;      import
android.view.View;      import
android.view.ViewGroup;      import
android.widget.Button;      import
android.widget.Toast;
public class SecondFragment extends Fragment {
    View view;
    Button secondButton;
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup
container,
                                Bundle savedInstanceState) {
// Inflate the layout for this fragment
    view = inflater.inflate(R.layout.fragment_second, container,
false); // get the reference of Button      secondButton =
(Button)
        view.findViewById(R.id.secondButton);
    secondButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Toast.makeText(getActivity(), "Second Fragment",
                Toast.LENGTH_LONG).show();
        }
    });      return
view;

```

OUTPUT:



Q7. Demonstrate ArrayAdapter using ListView to display list of fruits.

Java File:

```
package com.example.a07_arrayadapter_listview; //file name import
import androidx.appcompat.app.AppCompatActivity;
```

```

import android.os.Bundle; import
android.view.View; import
android.widget.AdapterView; import
android.widget.AdapterView; import
android.widget.AdapterView; import
android.widget.AdapterView; import
android.widget.AdapterView; import
android.widget.AdapterView; import
public class MainActivity extends AppCompatActivity {
    ListView listview;
    String listitems[];
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);    listview =
        findViewById(R.id.listViewfruits);
        listitems = getResources().getStringArray(R.array.fruits);
        ArrayAdapter listadapter =
            ArrayAdapter.createFromResource(this, R.array.fruits,
                android.R.layout.simple_list_item_1);
        listview.setAdapter(listadapter);
        listview.setOnItemClickListener(new
            AdapterView.OnItemClickListener() {
                @Override
                public void onItemClick(AdapterView<?> parent, View
                    view, int position, long id) {
                    TextView txt = (TextView) view;
                    Toast.makeText(getApplicationContext(),
                        txt.getText() + " Fruit is selected",
                        Toast.LENGTH_SHORT).show();
                }
            });
    }
}

```

XML File:

```

<?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/listViewfruits"
android:layout_width="286dp"
android:layout_height="419dp"
tools:layout_editor_absoluteX="46dp"
tools:layout_editor_absoluteY="74dp" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

String File:

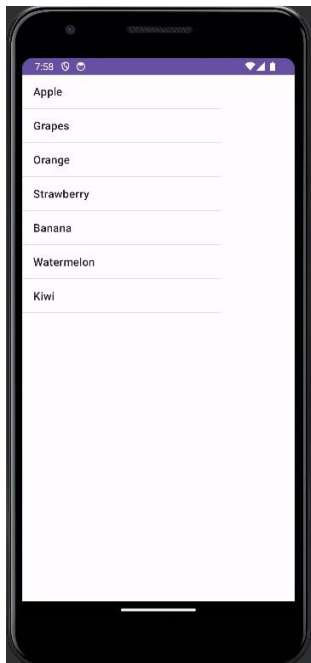
//copy this code in res folder -> values folder -> inside string.xml file -> inside resources element

```

<string-array name="fruits">
    <item>Apple</item>
    <item>Grapes</item>
    <item>Orange</item>
    <item>Strawberry</item>
    <item>Banana</item>
    <item>Watermelon</item>
    <item>Kiwi</item>
</string-array>

```

OUTPUT:



Q8. Write an application to demonstrate AlertDialogBox in android.

Java File:

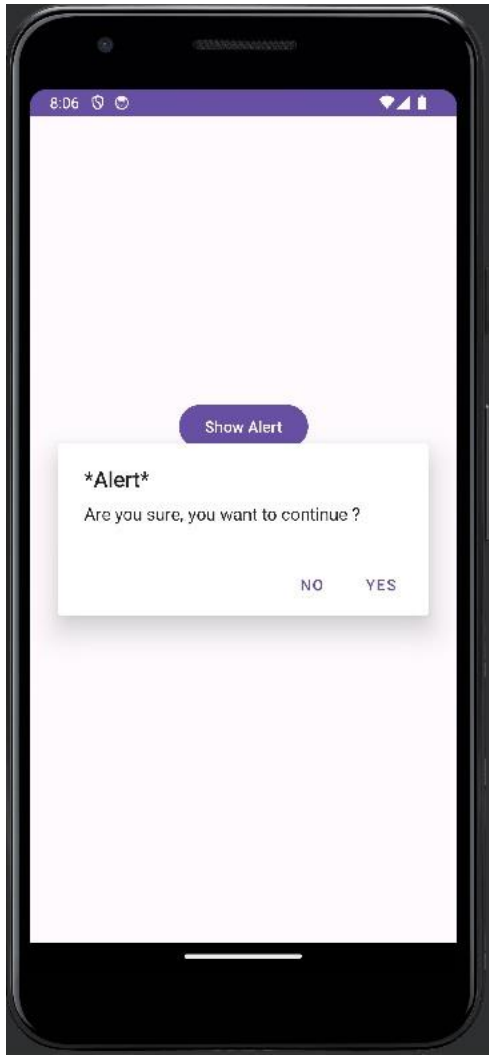
```
package com.example.a07_arrayadapter_listview; import
androidx.appcompat.app.AppCompatActivity;
import android.app.AlertDialog; import
android.content.DialogInterface; import
android.os.Bundle; import
android.view.View; import
android.widget.Button; import
android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);    Button btn
= (Button)findViewById(R.id.getBtn);
btn.setOnClickListener(new View.OnClickListener() {
    @Override    public void onClick(View
v) {        AlertDialog.Builder builder = new
AlertDialog.Builder(MainActivity.this);
builder.setTitle("**Alert**")
        .setMessage("Are you sure, you want to continue ?")
        .setCancelable(false)
        .setPositiveButton("Yes", new
            DialogInterface.OnClickListener() {
                @Override    public
void
onClick(DialogInterface
dialog, int which) {
                    Toast.makeText(MainActivity.this,"Selected Option:
YES",Toast.LENGTH_SHORT).show();
                }
            })
        .setNegativeButton("No", new
            DialogInterface.OnClickListener() {
                @Override    public
void
onClick(DialogInterface
dialog, int which) {
                    Toast.makeText(MainActivity.this,"Selected Option:
No",Toast.LENGTH_SHORT).show();
                }
            });
        //Creating dialog box
        AlertDialog dialog = builder.create();
        dialog.show();
    }
});
}
```

```
}
```

XML File:

```
<?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/getBtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Show Alert"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.367" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

OUTPUT:



Q9. Demonstrate Options Menu, Context Menu and Popup Menu in android

XML File:

```
<?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/btnContext"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
        android:text="Button"
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="0.377" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java File:

```

package com.example.menudemo; import
androidx.annotation.NonNull; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; import
android.view.ContextMenu; import
android.view.Menu; import
android.view.MenuInflater; import
android.view.MenuItem; import android.view.View;
import android.widget.Button; import
android.widget.Toast;
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.btnContext);    //Context Menu -
long press
    registerForContextMenu(btn);
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater m = getMenuInflater();
        m.inflate(R.menu.optionmenu, menu);
        return super.onCreateOptionsMenu(menu);
    }
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
switch(item.getItemId()){    case R.id.course1:
        Toast.makeText(this, item.getTitle() + " is
        selected", Toast.LENGTH_SHORT).show();
break;    case R.id.course2:
        Toast.makeText(this, item.getTitle() + " is
        selected", Toast.LENGTH_SHORT).show();
break;    case R.id.course3:
        Toast.makeText(this, item.getTitle() + " is
        selected", Toast.LENGTH_SHORT).show();
break;
        case R.id.cpp: //subitem
            Toast.makeText(this, item.getTitle() + " is
selected", Toast.LENGTH_SHORT).show();    break;
        case R.id.java: //subitem
            Toast.makeText(this, item.getTitle() + " is

```

```

        selected", Toast.LENGTH_SHORT).show();
break;
        case R.id.python: //subitem
            Toast.makeText(this, item.getTitle() + " is
                selected", Toast.LENGTH_SHORT).show();
break;
    }
    return super.onOptionsItemSelected(item);
}
@Override public void onCreateContextMenu(ContextMenu
menu, View v,
        ContextMenu.ContextMenuInfo menuInfo) {
    MenuInflater m = getMenuInflater();
    m.inflate(R.menu.optionmenu, menu);
    super.onCreateContextMenu(menu, v, menuInfo);
}
@Override
public boolean onOptionsItemSelected(@NonNull MenuItem item) {
switch(item.getItemId()) {
    case R.id.course1:
        Toast.makeText(this, item.getTitle() + " is
            selected", Toast.LENGTH_SHORT).show();
break;
    case R.id.course2:
        Toast.makeText(this, item.getTitle() + " is
            selected", Toast.LENGTH_SHORT).show();
break;
    case R.id.course3:
        Toast.makeText(this, item.getTitle() + " is
            selected", Toast.LENGTH_SHORT).show();
break;
    case R.id.cpp: //subitem
        Toast.makeText(this, item.getTitle() + " is
            selected", Toast.LENGTH_SHORT).show();
break;
    case R.id.java: //subitem
        Toast.makeText(this, item.getTitle() + " is
            selected", Toast.LENGTH_SHORT).show();
break;
    case R.id.python: //subitem
        Toast.makeText(this, item.getTitle() + " is
            selected", Toast.LENGTH_SHORT).show();
break;
    }
    return super.onOptionsItemSelected(item);
}
}

```

OptionMenu File:

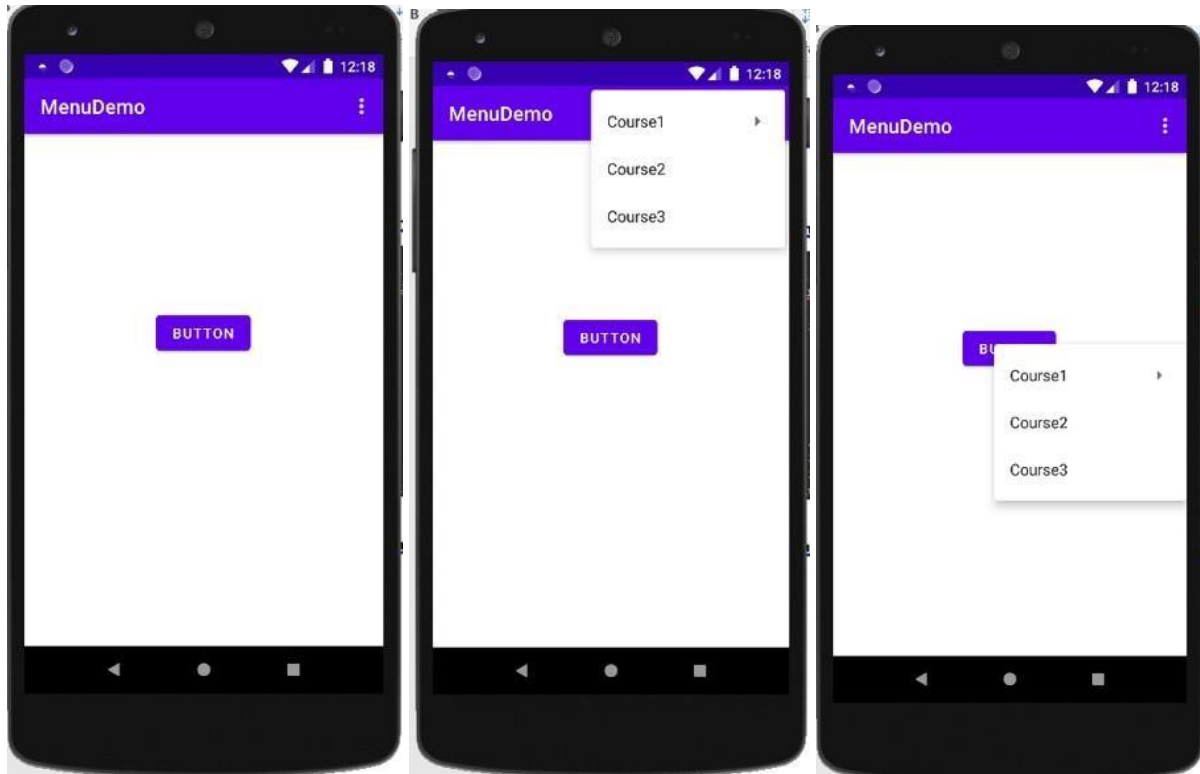
```
<?xml version="1.0" encoding="utf-8"?>
```

```

<menu xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:title="Course1" android:id="@+id/course1">
        <menu>
            <item android:title="CPP" android:id="@+id/cpp"/>
            <item android:title="Java" android:id="@+id/java"/>
            <item android:title="Python" android:id="@+id/python"/>
        </menu>
    </item>
    <item android:title="Course2" android:id="@+id/course2"/>
    <item android:title="Course3" android:id="@+id/course3"/>
</menu>

```

OUTPUT:



Q10. Write an application to produce Notification.

XML File:

```

<?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">

```

```

<TextView
    android:id="@+id/textView2"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
        android:text="your detail of notification..."

        android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.173"    tools:ignore="MissingConstraints"
    tools:layout_editor_absoluteX="16dp" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

        android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"    app:layout_constraintHorizontal_bias="0.177"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
        app:layout_constraintVertical_bias="0.229"
    tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java File:

```

package com.example.icem_pr_10_notification; import static
android.content.Context.NOTIFICATION_SERVICE; import
android.app.NotificationChannel ; import
android.app.NotificationManager ; import
android.graphics.BitmapFactory ; import android.os.Bundle ;
import android.view.View ;
import androidx.appcompat.app.AppCompatActivity; import
androidx.core.app.NotificationCompat; public class MainActivity
extends AppCompatActivity {    public static final String
NOTIFICATION_CHANNEL_ID = "10001" ;
    private final static String default_notification_channel_id =
        "default" ;
    @Override
    protected void onCreate (Bundle savedInstanceState) {
        super .onCreate(savedInstanceState) ;
        setContentView(R.layout. activity_main ) ;
    }
    public void createNotification (View view) {
NotificationManager mNotificationManager =
        (NotificationManager) getSystemService( NOTIFICATION_SERVICE ) ;

```

```

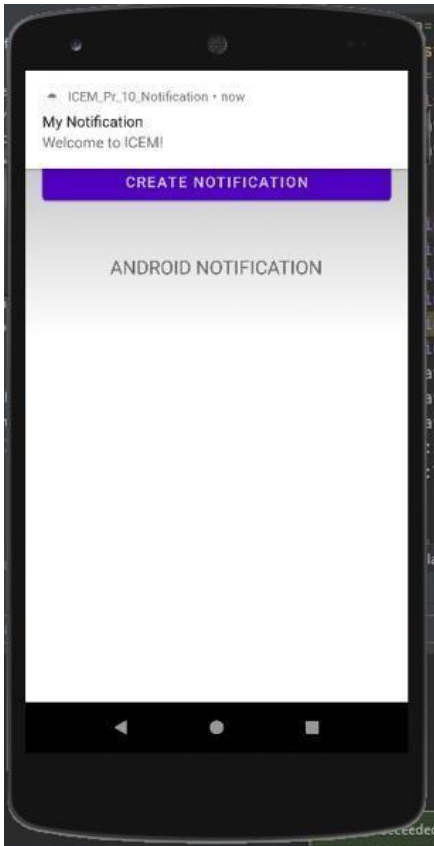
        NotificationCompat.Builder mBuilder = new
        NotificationCompat.Builder(MainActivity.this,
        default_notification_channel_id );    mBuilder.setTitle( "My
        Notification" );    mBuilder.setText( "Welcome to ICEM!" );
        mBuilder.setLargeIcon(BitmapFactory.decodeResource
        (getResources(), R.drawable.ic_launcher_foreground ));
        mBuilder.setSmallIcon(R.drawable.ic_launcher_foreground );
        mBuilder.setAutoCancel( true );    if
        (android.os.Build.VERSION.SDK_INT >=
        android.os.Build.VERSION_CODES.O ) {
            int importance = NotificationManager.IMPORTANCE_HIGH ;
            NotificationChannel notificationChannel = new
            NotificationChannel( NOTIFICATION_CHANNEL_ID ,
            "NOTIFICATION_CHANNEL_NAME" ,    importance)    ;
            mBuilder.setChannelId( NOTIFICATION_CHANNEL_ID );
            assert mNotificationManager != null;

            mNotificationManager.createNotificationChannel(notificationChannel)
            ;
        }
        assert mNotificationManager != null;
        mNotificationManager.notify(( int ) System.
        currentTimeMillis (), mBuilder.build());
    }
}

```

NotificationView Java File: package
com.example.icem_pr_10_notification; import
android.os.Bundle; import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class NotificationView extends AppCompatActivity {
 TextView textView;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.notification_view); textView
 = findViewById(R.id.textview);
 //getting the notification message
 String message=getIntent().getStringExtra("message");
 textView.setText(message);
 }
}

OUTPUT:



Q11. Write an android application using SQLite to create table and perform CRUD operations (Example. COURSE table (ID, Name, Duration, Description), perform ADD, UPDATE, DELETE and READ operations)

XML File:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    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/texttitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Registration Page"    android:textSize="24dp"
        android:layout_marginTop="20dp"/>
    <EditText
        android:id="@+id/fname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"    android:textSize="24dp"
        android:layout_below="@+id/texttitle"
        android:hint="FirstName"
```

```

        android:inputType="textPersonName" />
    <EditText
        android:id="@+id/lname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"        android:layout_below="@+id/fname"
        android:hint="LastName"
        android:inputType="textPersonName" />
    <EditText
        android:id="@+id/gender"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"        android:layout_below="@+id/lname"
        android:hint="Gender"
        android:inputType="text" />
    <EditText
        android:id="@+id/dob"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"        android:layout_below="@+id/gender"
        android:hint="Date Of Birth"
        android:inputType="text" />
    <EditText
        android:id="@+id/email"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"
        android:layout_below="@+id/dob"
        android:hint="Email Id"        android:inputType="text"
    />
    <Button        android:id="@+id/btnInsert"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"
        android:text="Insert Data"
        android:layout_marginTop="30dp"
        android:layout_below="@+id/email"/>
    <Button        android:id="@+id/btnUpdate"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"
        android:text="Update Data"
        android:layout_below="@+id/btnInsert"/>
    <Button        android:id="@+id/btnDelete"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"
        android:text="Delete Data"
        android:layout_below="@+id/btnUpdate"/>

```

```

        <Button        android:id="@+id/btnView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"
        android:text="View Data"
        android:layout_below="@+id/btnDelete"/>
    </RelativeLayout>

```

Java File:

```

package com.example.icem_pr_12_sqlite_crud; import
androidx.appcompat.app.AppCompatActivity;
import android.app.AlertDialog;
import android.database.Cursor;
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 fname, lname, gender, dob, email;
    Button insert, update, delete, view;
    DBHelper DB;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);    fname =
        findViewById(R.id.fname);    lname = findViewById(R.id.lname);
        gender = findViewById(R.id.gender);    dob = findViewById(R.id.dob);
        email = findViewById(R.id.email);    insert =
        findViewById(R.id.btnInsert);    update =
        findViewById(R.id.btnUpdate);    delete =
        findViewById(R.id.btnDelete);    view = findViewById(R.id.btnView);
        DB = new DBHelper(this);
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String fnameTXT = fname.getText().toString();
                String lnameTXT = lname.getText().toString();
                String genderTXT = gender.getText().toString();
                String dobTXT = dob.getText().toString();
                String emailTXT = email.getText().toString();
                Boolean checkinsertdata =
                    DB.insertuserdata(fnameTXT, lnameTXT, genderTXT, dobTXT, emailTXT);
                if (checkinsertdata==true)
                    Toast.makeText(MainActivity.this,"New Entry
                    Inserted",Toast.LENGTH_SHORT).show();                else
                    Toast.makeText(MainActivity.this,"Data Not
                    Inserted ",Toast.LENGTH_SHORT).show();
            }
        });
    }
}

```

```

    }
});
update.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String fnameTXT = fname.getText().toString();
        String lnameTXT = lname.getText().toString();
        String genderTXT = gender.getText().toString();
        String dobTXT = dob.getText().toString();
        String emailTXT = email.getText().toString();
        Boolean checkupdatedata =
            DB.updateuserdata(fnameTXT, lnameTXT, genderTXT, dobTXT,emailTXT);
        if (checkupdatedata==true)
            Toast.makeText(MainActivity.this,"Entry
Updated",Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this,"Data Not
Updated ",Toast.LENGTH_SHORT).show();
    }
});
delete.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String fnameTXT = fname.getText().toString();
        Boolean checkdeletedata =
            DB.deleteuserdata(fnameTXT);
        if (checkdeletedata==true)
            Toast.makeText(MainActivity.this,"Data
Delted",Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this,"Data Not
Deleted ",Toast.LENGTH_SHORT).show();
    }
});
view.setOnClickListener(new View.OnClickListener() {
    @Override
    public
void onClick(View v) {
        Cursor res = DB.getdata();
        if (res.getCount()==0){
            Toast.makeText(MainActivity.this, " NO DATA ",
            Toast.LENGTH_SHORT).show();
            return;
        }
        StringBuffer buffer = new StringBuffer();
        while (res.moveToNext()){
            buffer.append("FirstName :"+res.getString(0)+"\n");
            buffer.append("LastName :"+res.getString(1)+"\n");
        }
    }
});

```

```

        buffer.append("Gender :"+res.getString(2)+"\n");
buffer.append("Date Of Birth :"+res.getString(3)+"\n");
buffer.append("Email
:"+res.getString(4)+"\n\n\n");
    }
    AlertDialog.Builder builder = new
AlertDialog.Builder(MainActivity.this);
builder.setCancelable(true);        builder.setTitle("User
Entries");        builder.setMessage(buffer.toString());
        builder.show();
    }
    });
}
}
}

```

DBHelper Java File: package

```

com.example.icem_pr_12_sqlite_crud; import
android.content.ContentValues; import
android.content.Context; import
android.database.Cursor; import
android.database.sqlite.SQLiteDatabase; import
android.database.sqlite.SQLiteOpenHelper; import
androidx.annotation.Nullable; public class
DBHelper extends SQLiteOpenHelper {    public
DBHelper(@Nullable Context context) {
    super(context, "dbmca.db", null, 1);
}
@Override
public void onCreate(SQLiteDatabase DB) {
    DB.execSQL("create Table stud_registration(firstname Text
primary key, lastname Text, gender Text, dob Text, emailid Text)");
}
@Override    public void onUpgrade(SQLiteDatabase
DB, int i, int i1) {
    DB.execSQL("drop Table if exists stud_registration");
}
    public Boolean insertuserdata(String firstname,String
        lastname,String gender,String dob,String emailid)
    {
        SQLiteDatabase DB = this.getWritableDatabase();
ContentValues contentValues = new ContentValues();
contentValues.put("firstname", firstname);
contentValues.put("lastname", lastname);
contentValues.put("gender", gender);
contentValues.put("dob", dob);
contentValues.put("emailid", emailid);        long
result=DB.insert("stud_registration",null,
        contentValues);
if(result!=-1){

```

```

return false;    }else{
return true;
    }
}
public Boolean updateuserdata(String firstname,String
    lastname,String gender,String dob,String emailid)
{
    SQLiteDatabase DB = this.getWritableDatabase();
    ContentValues contentValues = new ContentValues();
    contentValues.put("lastname", lastname);
    contentValues.put("gender", gender);
    contentValues.put("dob", dob);    contentValues.put("emailid",
    emailid);
    Cursor cursor = DB.rawQuery("Select * from stud_registration
    where firstname =?", new String[]{firstname});    if
    (cursor.getCount()>0)
    {
        long result=DB.update("stud_registration",
            contentValues, "firstname=?", new String[] {firstname});
        if(result!=-1){            return false;        }else{            return
        true;
        }
    }else
    {
        return false;
    }
}
public Boolean deleteuserdata(String firstname)
{
    SQLiteDatabase DB = this.getWritableDatabase();    Cursor
    cursor = DB.rawQuery("Select * from stud_registration
    where firstname =?", new String[]{firstname});
    if (cursor.getCount()>0)
    {
        long result=DB.delete("stud_registration",
        "firstname=?", new String[] {firstname});
        if(result!=-1){
        return        false;
        }else{        return
        true;
        }
    }else
    {
        return false;
    }
}
public Cursor getdata()
{

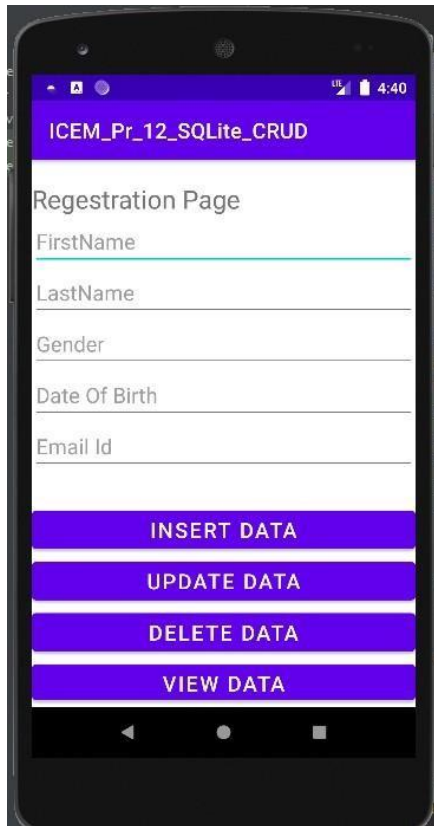
```

```

        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from
stud_registration", null);    return cursor;
    }
}

```

OUTPUT:



Q12. Create an Android app, powered by Firebase Realtime database that supports: Adding Data to Firebase Realtime database, Retrieving Data from Firebase and deleting data from firebase data.

XML File:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
    <Button
android:id="@+id/btn_CreateMain"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="btn_Create"
android:gravity="center"
android:layout_gravity="center"

```

```

android:background="@drawable/btn"
android:layout_marginBottom="10dp"/>
<androidx.recyclerview.widget.RecyclerView
android:layout_height="match_parent"
    android:layout_width="match_parent" android:id="@+id/list"/>
</LinearLayout>

```

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=".SecondActivity">
<EditText
android:id="@+id/editTxtUsername"
android:layout_width="281dp"
android:layout_height="48dp"
android:background="@drawable/text"
    android:ems="10"    android:hint="User Name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.481"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.208"
tools:ignore="MissingConstraints" />
<EditText
    android:id="@+id/editTxtEmail"
android:layout_width="283dp"    android:layout_height="42dp"
android:layout_marginTop="60dp"
android:background="@drawable/text"
    android:ems="10"    android:hint="Email"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.507"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editTxtUsername"
    app:layout_constraintVertical_bias="0.0"
tools:ignore="MissingConstraints" />
<EditText
android:id="@+id/editTxtNumber"
android:layout_width="280dp"
android:layout_height="47dp"
android:background="@drawable/text"
    android:ems="10"
android:hint="Number"

```



```

    app:layout_constraintBottom_toTopOf="@+id/btnSubmit"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.496"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editTxtEmail"
    app:layout_constraintVertical_bias="0.331"
tools:ignore="MissingConstraints" />
<Button    android:id="@+id/btnSubmit"
    android:layout_width="123dp"
    android:layout_height="48dp"
    android:background="@drawable/btn"
        android:text="Submit"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.465"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.756"
tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

List_items.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">
    <androidx.cardview.widget.CardView
        android:layout_width="match_parent"
        android:layout_height="match_parent"    android:elevation="10dp"
    >
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="horizontal"
            android:divider="@drawable/spaceing"
            android:showDividers="middle"
            android:paddingBottom="50dp"
                android:gravity="center"
            >
                <TextView
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:id="@+id/textItem"
                    android:paddingLeft="20dp"
                    android:textSize="20dp"
                    android:paddingRight="10dp"
                    android:layout_marginLeft="10dp"
                    android:layout_weight="1"

```

```

        android:background="@drawable/text"
        android:textColor="#000000"
    />
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_gravity="center"
        android:layout_weight="1"
        android:gravity="center"
        android:orientation="horizontal">
        <Button
            android:id="@+id/editList_items"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="@drawable/btn"
            android:paddingRight="10dp"
            android:text="Edit" />
            <Button
                android:id="@+id/deleteList_items"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_marginLeft="10dp"
                android:background="@drawable/btn"
                android:paddingRight="10dp"
                android:text="Delete"
            />
        <Button
            android:id="@+id/readList_items"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="10dp"
            android:background="@drawable/btn"
            android:paddingRight="10dp"
            android:text="Read"
        />
    </LinearLayout>
</LinearLayout>
</androidx.cardview.widget.CardView>
</LinearLayout>

```

Java File:

```

package com.example.icem_12_pr_firebase; import
androidx.annotation.NonNull; import
androidx.appcompat.app.AppCompatActivity; import
androidx.recyclerview.widget.DividerItemDecoration; import
androidx.recyclerview.widget.LinearLayoutManager; import
androidx.recyclerview.widget.RecyclerView; import
android.app.Activity; import android.content.Intent; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import
com.example.icem_12_pr_firebase.DBHelper; import
com.google.firebase.database.DataSnapshot; import

```

```

com.google.firebase.database.DatabaseError; import
com.google.firebase.database.DatabaseReference; import
com.google.firebase.database.FirebaseDatabase; import
com.google.firebase.database.ValueEventListener; import
java.util.ArrayList; public class MainActivity extends
AppCompatActivity {    private FirebaseDatabase
firebaseDatabase;    private DatabaseReference
databaseReference;
    private static ArrayList<DBHelper> arrayList = new
        ArrayList<>();
private RecyclerView list;
private Button btnCreate;
public static Activity Fa;
@Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        arrayList.clear();
Fa =this;
        firebaseDatabase = FirebaseDatabase.getInstance();
        databaseReference =firebaseDatabase.getReference("Users");
getUsers();
        btnCreate = findViewById(R.id.btn_CreateMain);
list = findViewById(R.id.list);
        DividerItemDecoration dividerItemDecoration = new
DividerItemDecoration(list.getContext(),            new
LinearLayoutManager(this).getOrientation());
list.addItemDecoration(dividerItemDecoration);
list.setLayoutManager(new LinearLayoutManager(this));
list.setAdapter(new ListAdapter(arrayList,this ));
btnCreate.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent i = new
            Intent(MainActivity.this,SecondActivity.class);
        String s;
s="Create";
        i.putExtra("Button",s);
startActivity(i);            finish();
    }
});
}
    public void getUsers(){
databaseReference.addValueEventListener(new
        ValueEventListener() {
            String userName, email, number;
            @Override
            public void onDataChange(@NonNull DataSnapshot snapshot)
            {

```

```

        for (DataSnapshot dataSnapshot:
            snapshot.getChildren()){
            userName
                =dataSnapshot.child("userName").getValue().toString();
            email =
                dataSnapshot.child("email").getValue().toString();
            number =
                dataSnapshot.child("number").getValue().toString();
            arrayList.add(new
                DBHelper(userName,email,number));;
        }
        list.setAdapter(new
            ListAdapter(arrayList,MainActivity.this));
    }
    @Override
    public void onCancelled(@NonNull DatabaseError error) {
    }
    });
}
@Override public void
onBackPressed() {
    super.onBackPressed();
}
public static void cleanList(){
    arrayList.clear();
}
}

```

```

ListAdapter.java ::    package
com.example.icem_12_pr_firebase;    import
android.annotation.SuppressLint;    import
android.content.Context;    import android.content.Intent;
import android.view.LayoutInflater;    import
android.view.View;    import android.view.ViewGroup;
import android.widget.Button;    import
android.widget.TextView;    import android.widget.Toast;
import androidx.annotation.NonNull;    import
androidx.recyclerview.widget.RecyclerView;    import
com.example.icem_12_pr_firebase.DBHelper;    import
com.google.android.gms.tasks.OnCompleteListener;    import
com.google.android.gms.tasks.Task;
    import com.google.firebase.database.DatabaseReference;
import com.google.firebase.database.FirebaseDatabase;
    import java.util.ArrayList; public
class ListAdapter extends
    RecyclerView.Adapter<ListAdapter.ListHolder> {
private ArrayList<DBHelper> arrayList; private
Context context; private DBHelper dbHelper;

```

```

private FirebaseDatabase firebaseDatabase;
private DatabaseReference databaseReference;
private int position;
public ListAdapter(ArrayList<DBHelper> arrayList,Context
context) {    this.arrayList = arrayList;
    this.context= context;
}
@NonNull
@Override
public ListHolder onCreateViewHolder(@NonNull ViewGroup parent,
int viewType) {
    LayoutInflater inflater =
        LayoutInflater.from(parent.getContext());
    View view =
        inflater.inflate(R.layout.list_items,parent,false);
    return new ListHolder(view);
}
@Override public void onBindViewHolder(@NonNull
ListHolder holder,
        @SuppressWarnings("RecyclerView") int position) {
    Intent i = new Intent(context, SecondActivity.class);
    String s1 = arrayList.get(position).getUserName();
    holder.textList.setText(s1);
    holder.editList_items.setOnClickListener(new
        View.OnClickListener() {
            @Override
            public void onClick(View v) {
                dbHelper = arrayList.get(position);
                i.putExtra("Button","Edit");
                i.putExtra("userName",dbHelper.getUserName());
                i.putExtra("email",dbHelper.getEmail());
                i.putExtra("number",dbHelper.getNumber());
                context.startActivity(i);
                MainActivity.Fa.finish();
            }
        });
    holder.readList_item.setOnClickListener(new
        View.OnClickListener() {
            @Override
            public void onClick(View v) {
                dbHelper = arrayList.get(position);
                i.putExtra("Button","Read");
                i.putExtra("userName",dbHelper.getUserName());
                i.putExtra("email",dbHelper.getEmail());
                i.putExtra("number",dbHelper.getNumber());
                context.startActivity(i);
                MainActivity.Fa.finish();
            }
        });
}
}

```

```

        holder.deleteList_items.setOnClickListener(new
            View.OnClickListener() {
                @Override
                public void onClick(View v) {
dbHelper = arrayList.get(position);
                    firebaseDatabase = FirebaseDatabase.getInstance();
databaseReference
                        =firebaseDatabase.getReference("Users");
String temp =dbHelper.getUserName();

databaseReference.child(temp).removeValue().addOnCompleteListener(ne
                    w OnCompleteListener<Void>() {
                        @Override
                        public void onComplete(@NonNull Task<Void> task)
                        {
                            if (task.isSuccessful()){
                                Toast.makeText(context,"Data
                                    Removed",Toast.LENGTH_SHORT).show();
                            }else {
                                Toast.makeText(context,"Failed to remove
data",Toast.LENGTH_SHORT).show();
                            }
                        }
                    });
                    MainActivity.cleanList();
                }
            });
    }

    @Override    public int
getItemCount() {    return
arrayList.size();
    }

    public class ListHolder extends RecyclerView.ViewHolder{
        private TextView textList;    private Button
editList_items,deleteList_items,readList_item;
    public ListHolder(@NonNull View itemView ) {
        super(itemView);
textList =(TextView)
        itemView.findViewById(R.id.textItem);
editList_items =(Button)
        itemView.findViewById(R.id.editList_items);
deleteList_items = (Button)
        itemView.findViewById(R.id.deleteList_items);
readList_item = (Button)
        itemView.findViewById(R.id.readList_items);
    }
}

```

```

}
DBHelper.java :    package
com.example.icem_12_pr_firebase; public class
DBHelper {    private String userName;    private
String email;    private String number;
    public DBHelper(String userName, String email, String number) {
this.userName = userName;    this.email = email;
    this.number = number;
    }
    public String getUser_name() {
    return userName;
    }
    public String getEmail() {
return email;
    }
    public String getNumber() {
    return number;
    }
}
}

```

OUTPUT:



Q13. Demonstrate WebView to display the web pages in an android application.

XML File:

```

<?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="ANDROID NOTIFICATION"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"    app:layout_constraintVertical_bias="0.188"
/>
    <Button
    android:id="@+id/btn"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_centerInParent="true"
android:layout_margin="16dp"
android:onClick="createNotification"
android:text="create notification"
tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Notification_view.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">
<TextView
    android:id="@+id/textView2"
android:layout_width="fill_parent"
android:layout_height="wrap_content"    android:gravity="center"
    android:text="your detail of notification..."

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.173"    tools:ignore="MissingConstraints"

```



```

tools:layout_editor_absoluteX="16dp" />
<TextView
android:id="@+id/textView"
android:layout_width="wrap_content"
    android:layout_height="wrap_content"

    android:textAppearance="@style/Base.TextAppearance.AppCompat.Medium"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"    app:layout_constraintHorizontal_bias="0.177"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView2"
    app:layout_constraintVertical_bias="0.229"
tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java File:

```

package com.example.icem_pr_10_notification; import static
android.content.Context.NOTIFICATION_SERVICE; import
android.app.NotificationChannel ; import
android.app.NotificationManager ; import
android.graphics.BitmapFactory ; import android.os.Bundle ;
import android.view.View ; import
androidx.appcompat.app.AppCompatActivity; import
androidx.core.app.NotificationCompat; public class MainActivity
extends AppCompatActivity {    public static final String
NOTIFICATION_CHANNEL_ID = "10001" ;
    private final static String default_notification_channel_id =
        "default" ;
    @Override
    protected void onCreate (Bundle savedInstanceState) {
super .onCreate(savedInstanceState) ;
        setContentView(R.layout. activity_main ) ;
    }
    public void createNotification (View view) {
NotificationManager mNotificationManager =
        (NotificationManager) getSystemService( NOTIFICATION_SERVICE ) ;
        NotificationCompat.Builder mBuilder = new
NotificationCompat.Builder(MainActivity. this,
default_notification_channel_id ) ;    mBuilder.setContentTitle( "My
Notification" ) ;    mBuilder.setText( "Welcome to ICEM!" ) ;
mBuilder.setLargeIcon(BitmapFactory. decodeResource
(getResources() , R.drawable. ic_launcher_foreground )) ;
mBuilder.setSmallIcon(R.drawable. ic_launcher_foreground ) ;
        mBuilder.setAutoCancel( true ) ;    if
(android.os.Build.VERSION. SDK_INT >=
android.os.Build.VERSION_CODES. O ) {
            int importance = NotificationManager. IMPORTANCE_HIGH ;
NotificationChannel notificationChannel = new

```

```

        NotificationChannel( NOTIFICATION_CHANNEL_ID ,
"NOTIFICATION_CHANNEL_NAME"      ,      importance)      ;
mBuilder.setChannelId( NOTIFICATION_CHANNEL_ID )      ;
assert mNotificationManager != null;

        mNotificationManager.createNotificationChannel(notificationChannel)
        ;
    }
    assert mNotificationManager != null;
    mNotificationManager.notify(( int ) System.
currentTimeMillis () , mBuilder.build()) ;
    }
}

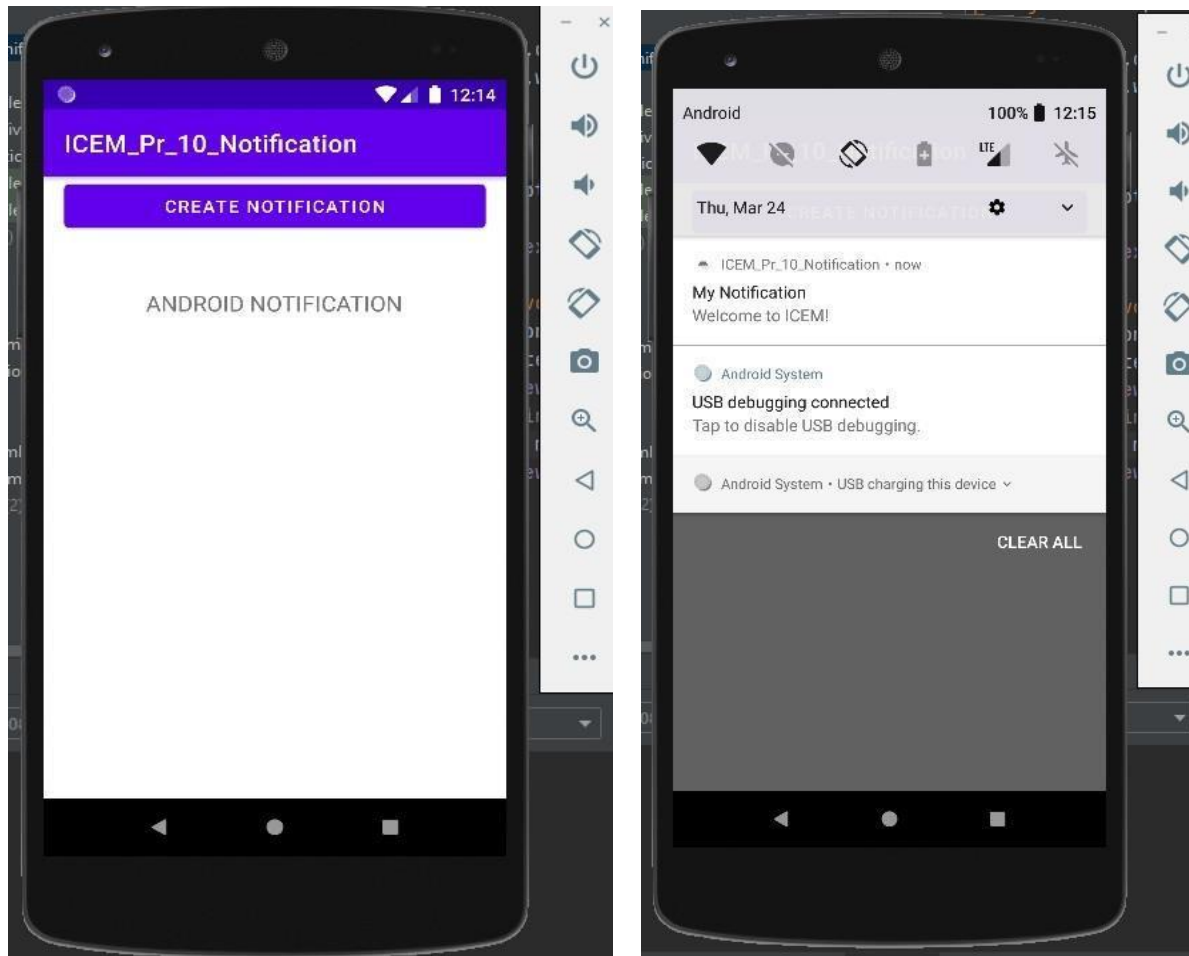
```

```

NotificationView.java ::    package
com.example.icem_pr_10_notification;
    import android.os.Bundle;    import
android.widget.TextView;    import
androidx.appcompat.app.AppCompatActivity; public class
NotificationView extends AppCompatActivity {
    TextView textView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.notification_view);    textView
= findViewById(R.id.textView);
        //getting the notification message
        String message=getIntent().getStringExtra("message");
textView.setText(message);
    }
}

```

OUTPUT:



Q14. Write an android app to write JSON data into a file and read JSON data from created file.

XML File:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    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/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="50dp"
        android:text="Name"        android:textColor="#000"
        android:textSize="20sp" />
    <TextView
        android:id="@+id/salary"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```

        android:layout_centerHorizontal="true"
        android:layout_marginTop="80dp"
            android:text="Salary"
        android:textColor="#000"
            android:textSize="20sp"
        />
</RelativeLayout>

```

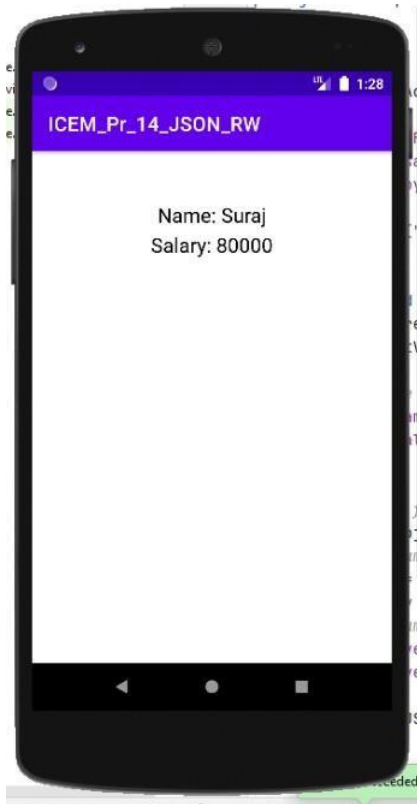
Java File:

```

package com.example.icem_pr_14_json_rw; import
androidx.appcompat.app.AppCompatActivity; import
android.annotation.SuppressLint; import
android.os.Bundle; import android.widget.TextView;
import org.json.JSONException; import
org.json.JSONObject;
public class MainActivity extends AppCompatActivity {
    String JSON_STRING =
        "{\"employee\":{\"name\":\"Suraj\",\"salary\":100000}}";
    String name, salary;
    TextView employeeName, employeeSalary;
    @SuppressWarnings("SetTextI18n")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);    // get the
reference of TextView's    employeeName =
findViewById(R.id.name);    employeeSalary =
findViewById(R.id.salary);
        try {
// get JSONObject from JSON file
        JSONObject obj = (new
            JSONObject(JSON_STRING)).getJSONObject("employee");
// get employee name and salary
name = obj.getString("name");
        salary = obj.getString("salary");
// set employee name and salary in TextView's
employeeName.setText("Name: "+name);
employeeSalary.setText("Salary: "+salary);    }
catch (JSONException e) { e.printStackTrace();
    }
}
}

```

OUTPUT:



Q15. Write an application to display a PDF as an image in React app using URL.

App.js File:

```
import React from "react";
import SinglePagePDFViewer from "./components/pdf/single-page";
/* This is required only if the project file is located
inside the app. Otherwise you can use the external link of the pdf file*/
import samplePDF from "./sample.pdf";
import "./styles.css"; export
default function App() {
  return (
<div className="App">
  <h4>Single Page</h4>
  <SinglePagePDFViewer pdf={samplePDF} />
</div>
);
}
```

Single-page.js File:

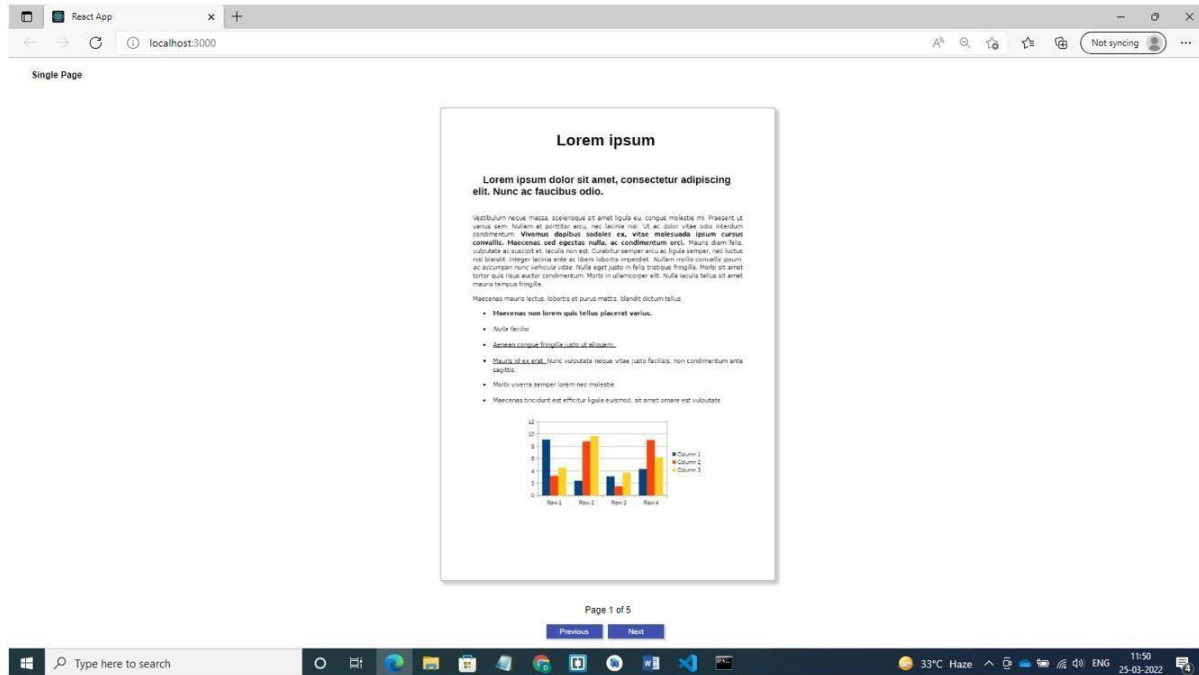
```
import React, { useState }
from "react"; import { Document, Page } from
"react-pdf"; export default function
SinglePage(props) { const [numPages,
setNumPages] = useState(null);
const [pageNumber, setPageNumber] = useState(1); //setting 1 to show
firsrt page
function onDocumentLoadSuccess({ numPages }) {
setNumPages(numPages);
```

```

    setPageNumber(1);
  }
  function changePage(offset) {
    setPageNumber(prevPageNumber => prevPageNumber + offset);
  }
  function previousPage() {
    changePage(-1);
  }
  function nextPage() {
    changePage(1);
  }
  const { pdf } = props;
  return (
    <>
    <Document
      file={pdf}
      options={{ workerSrc: "/pdf.worker.js" }}
      onLoadSuccess={onDocumentLoadSuccess}
    >
    <Page pageNumber={pageNumber} />
    </Document>
    <div>
    <p>
      Page {pageNumber} | (numPages > 1 ? "--") of {numPages} | "--"
    </p>
    <button type="button" disabled={pageNumber <= 1}
      onClick={previousPage}>
    Previous
    </button> <button
      type="button"
      disabled={pageNumber >= numPages}
      onClick={nextPage}
    >
    Next
    </button>
    </div>
    </>
  );
}

```

OUTPUT:



Q16. Develop simple flutter application to open a browser using Android SDK.

```

Main.dart File: import
'package:flutter/material.dart';
void main() {  runApp(const
  MyApp());
}
class MyApp extends StatelessWidget {
  const MyApp({Key? key}) : super(key: key);
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Hello World Application',
      theme: ThemeData(

        primarySwatch: Colors.blue,
      ),
      home: const MyHomePage(title: 'ICEM Home Page'),
    );
  }
}
class MyHomePage extends StatefulWidget {  const
  MyHomePage({Key? key, required this.title}) : super(key:
  key);
  final String title;
  @override
  State<MyHomePage> createState() => _MyHomePageState();
}
class _MyHomePageState extends State<MyHomePage> {
  int _counter = 0;  void _incrementCounter() {

```

```

        setState(() {
    _counter++;
        });
    }
    @override
    Widget build(BuildContext context) {

        return Scaffold(
    appBar: AppBar(
        title: Text(widget.title),
    ),
        body: Center(
            child: Column(
                mainAxisAlignment: MainAxisAlignment.center,
                children: <Widget>[
    const Text(
        'Hello World',
    ),
        Text(
            '$_counter',
            style: Theme.of(context).textTheme.headline4,
        ),
    ],
        ),
    ),
        floatingActionButton: FloatingActionButton(
    onPressed: _incrementCounter,          tooltip:
    'Increment',
        child: const Icon(Icons.add),
    ), // This trailing comma makes auto-formatting nicer for
    build methods.
    );
    }
}

```

OUTPUT:

