



Shree Chankya Education Society's

Indira College of Engineering and Management, Pune

Department of MCA

Laboratory Journal

**Subject: Mobile Application
Development**

Course: MCA II - [Sem: III]

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Q. 1 Demonstrate different Layouts with different views in android Layouts-
ConstraintLayout, RelativeLayout, TableLayout Views- Button, TextView, EditText, WebView,
CheckBox, RadioButton, ToggleButton, ImageButton, RatingBar, ProgressBar, SeekBar,
VideoView, DatePicker, CalendarView, Spinner

1. ConstraintLayout with Button, RadioButton, ToggleButton, ImageButton

Activity man.xml ::

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

    <Button
        android:id="@+id/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>
```

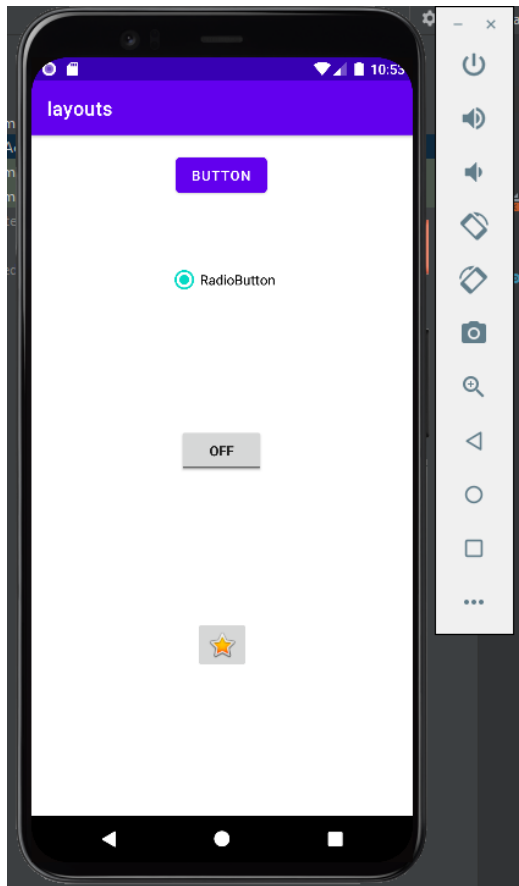
MainActivity.java ::

```
package com.example.icem_pr_1_layouts;
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);
    }
}
```

Output ::



2. Relative Layout with TextView

Activity man.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"
    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>
```

MainActivity.java ::

```
package com.example.icem_pr_1_relative;
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) {
```

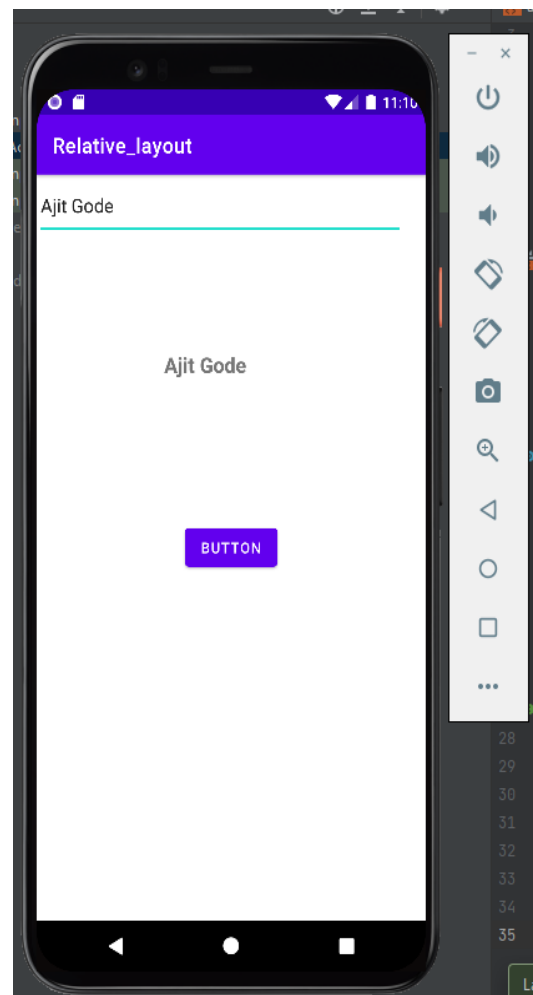
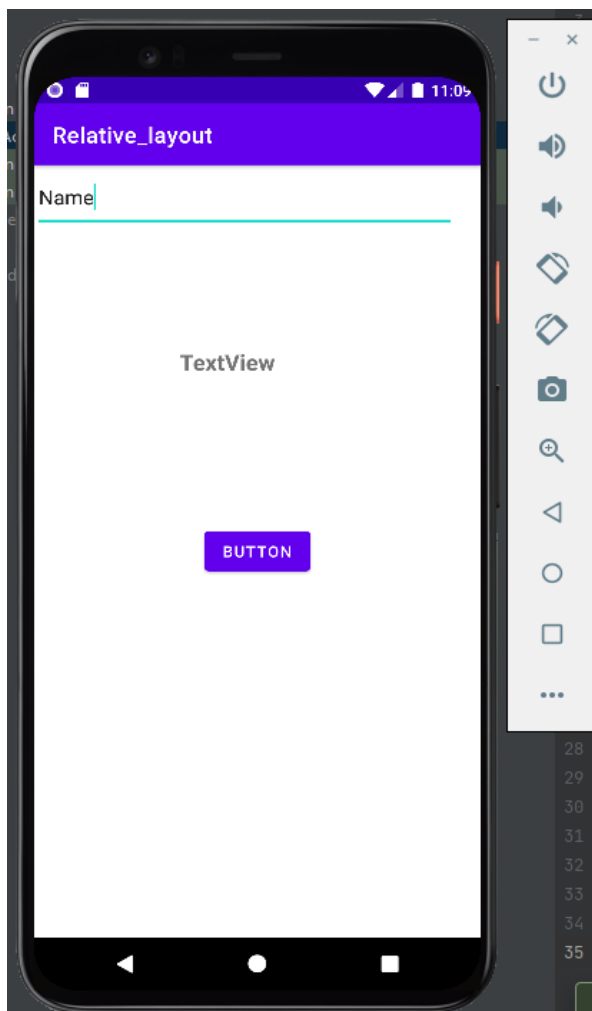
```

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);
    }
});
}
}

```

Output ::



3. CheckBox

Activity man.xml ::

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

    <TextView
        android: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>

```

MainActivity.java ::

```

package com.example.checkbox;
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);
    }
}

```



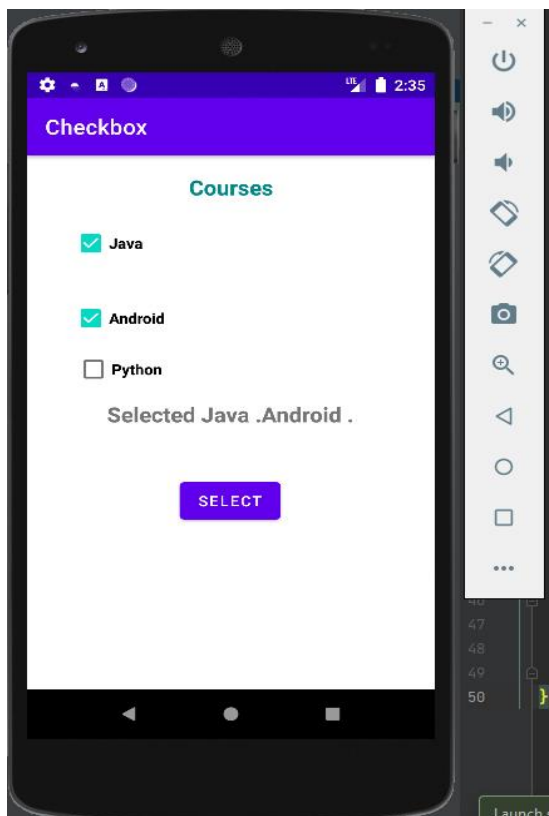
```

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);
        }
    }
});
}
}

```

Output ::



4. TableLayout

Activity man.xml ::

```
<?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="Sumedh Chavan" />
        <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="Sanket Modhe" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Mumbai" />
</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="Ajit Gode" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Hyderabad" />
</TableRow>
</TableLayout>

```

MainActivity.java ::

```

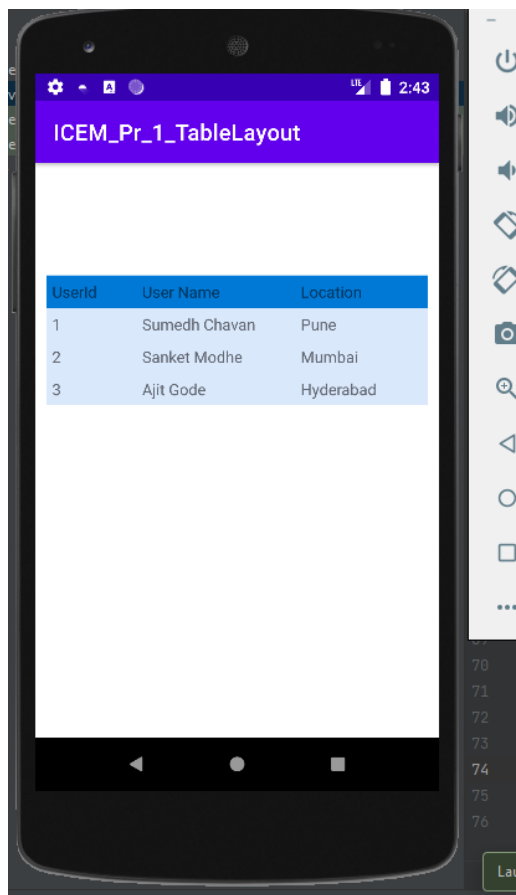
package com.example.icem_pr_1_tablelayout;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

```

Output ::



5. LinearLayout with ProgressBar, SeekBar and RatingBar.

Activity man.xml ::

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

```

MainActivity.java ::

```

package com.example.icem_pr_1_rating_bars;
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);

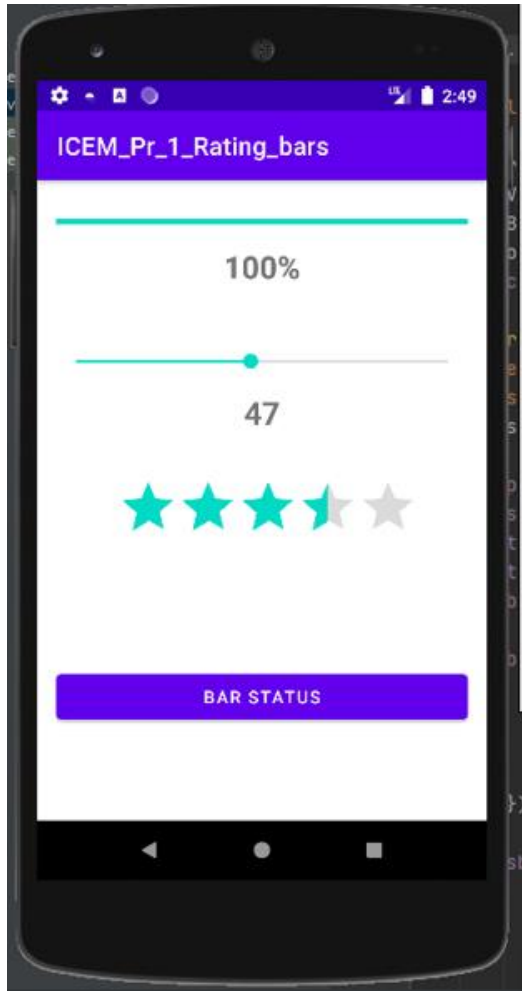
    btn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            progbar();
        }
    });

    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);
}

```

```
}
```

Output ::



6. DatePicker with different view like Calendar and Spinner

Activity man.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"
    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:id="@+id/in_time"
    android:layout_below="@+id/in_date"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true" />

<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>

```

MainActivity.java ::

```

package com.example.icem_1_datespinner;
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() {

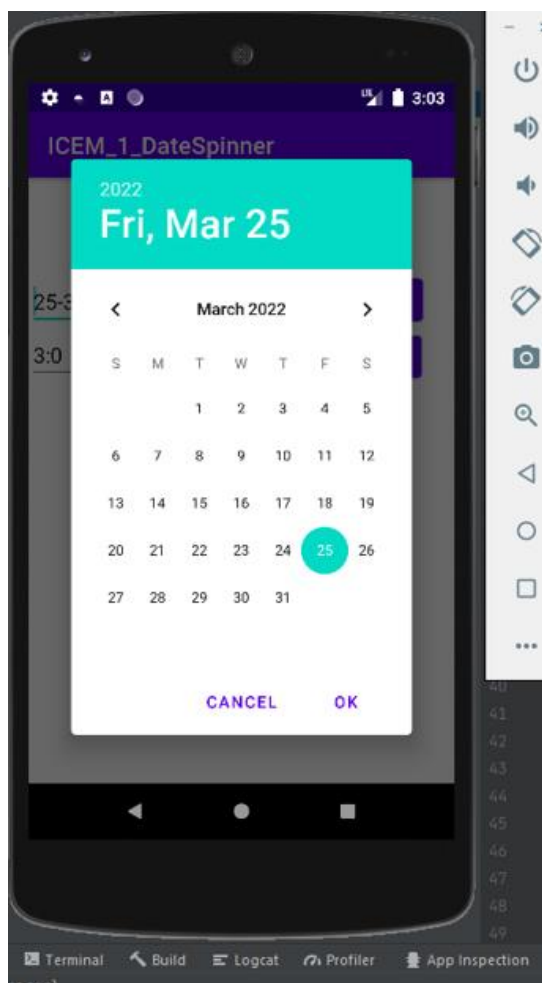
```

```

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

```

Output ::



7. VideoView

Activity man.xml ::

```

<?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>

```

MainActivity.java ::

```

package com.example.icem_pr_1_videoview;

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-videos-bucket/sample/BigBuckBunny.mp4",
"https://commondatastorage.googleapis.com/gtv-videos-
bucket/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;
        }
    });
}
}

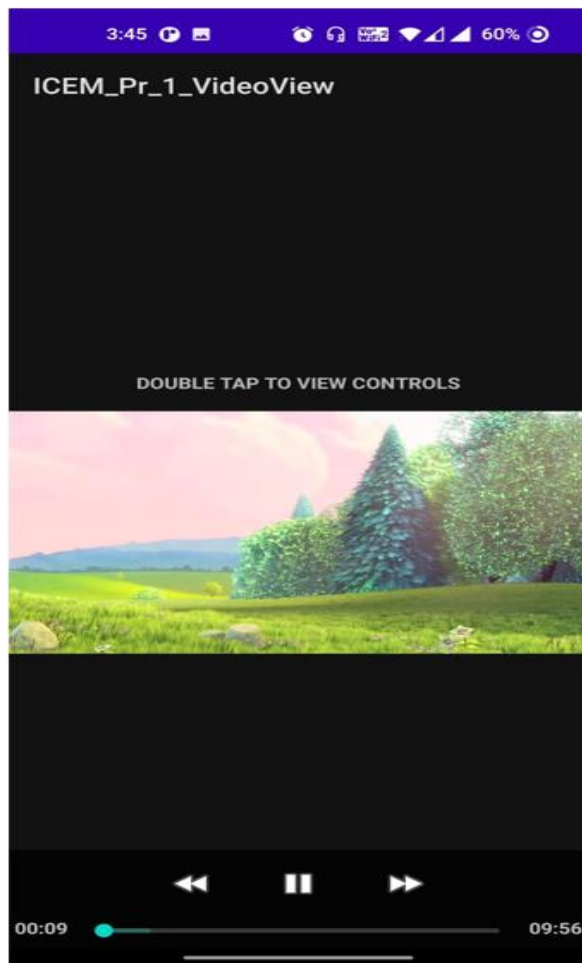
```

```

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

```

Output :



Q. 2 Write an android code to make phone call using Intent

Activity man.xml ::

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

    <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>

```

MainActivity.java ::

```

package com.example.icem_pr_2_phonecall;

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);
    }
});
}
}

```

AndroidManifest.xml ::

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.icem_pr_2_phonecall">

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

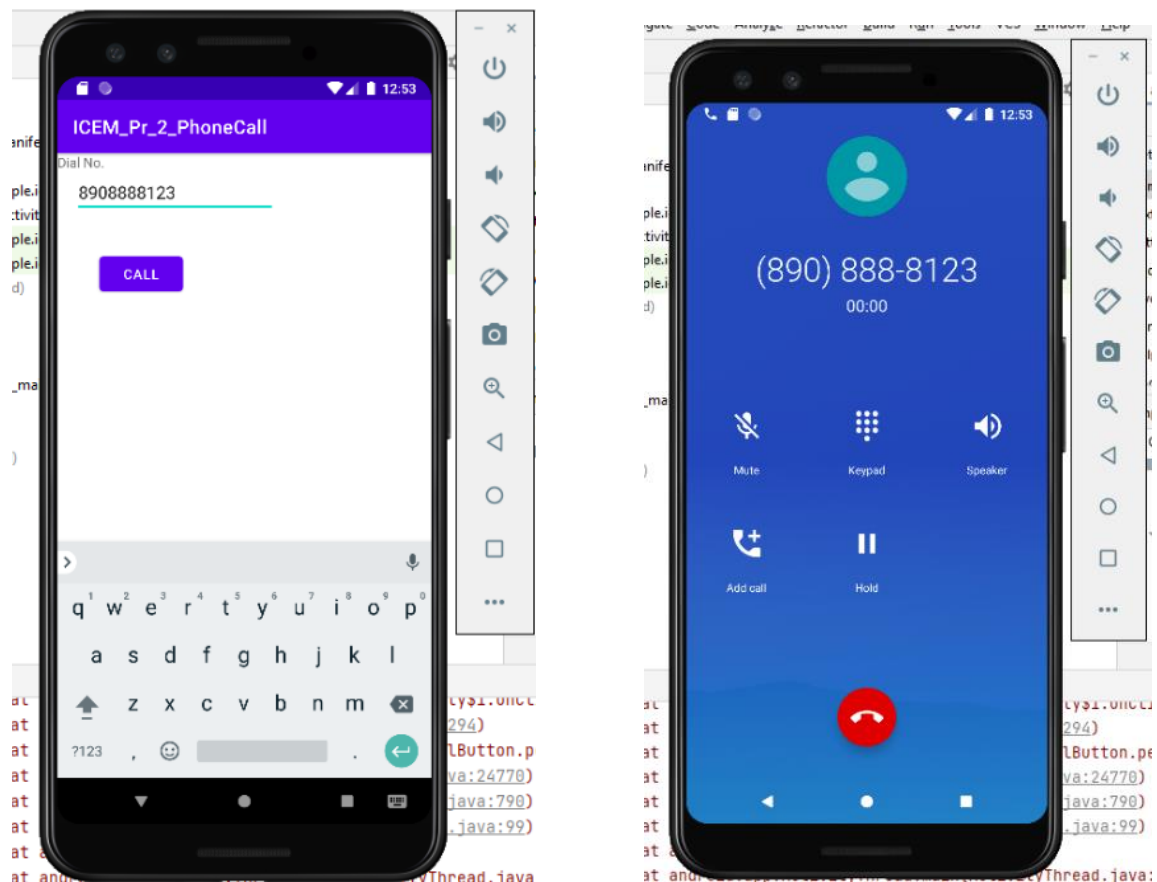
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/Theme.ICEM_Pr_2_PhoneCall">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category
android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>

```

Output :



Q. 3 Write an android code to turn ON/OFF Bluetooth

Activity man.xml ::

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

    <TextView
        android: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>

```

MainActivity.java ::

```

package com.example.icem_pr_3_bluetooth;
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

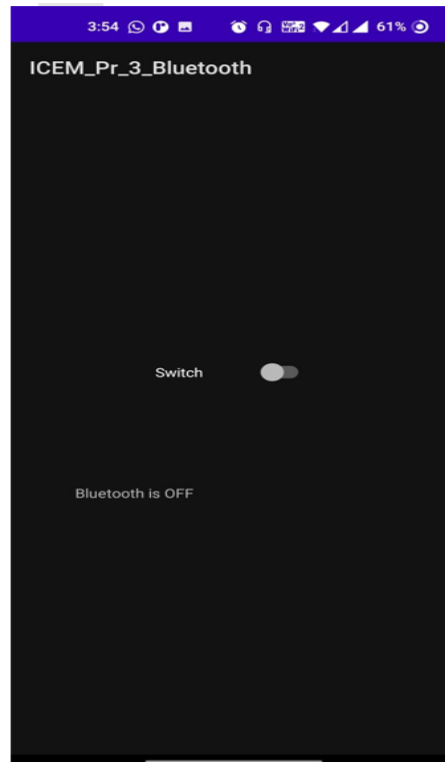
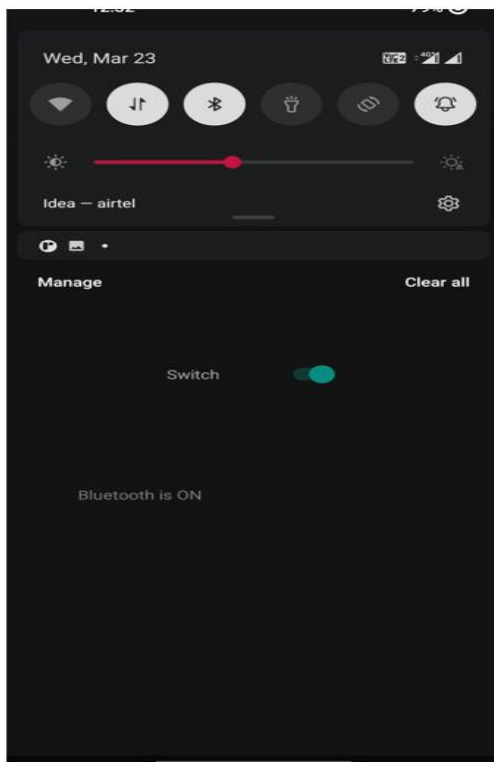
```

```
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");
}
}
```

AndroidManifest.xml ::

```
<uses-permission android:name="android.permission.BLUETOOTH"/>
<uses-permission android:name="android.permission.BLUETOOTH_ADMIN"/>
<uses-permission android:name="android.permission.BLUETOOTH_CONNECT"
/>
```

Output ::



Q. 4 Write an android code to turn ON /OFF the Wi-Fi

Activity man.xml ::

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

    <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>
```

MainActivity.java ::

```
package com.example.icem_pr_4_wifi;
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);
        }
    }
}

```

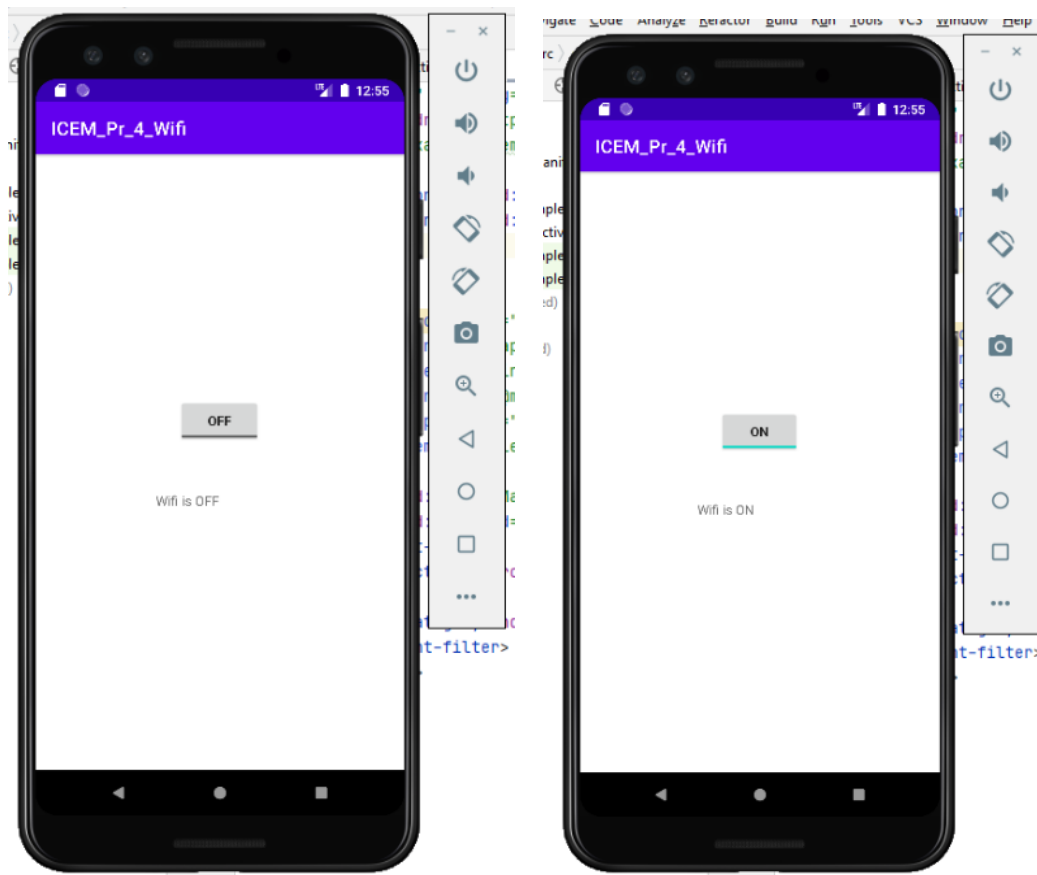
AndroidManifest.xml ::

```

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

```

Output ::



Q. 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.

Activity man.xml ::

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

    <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>

```

MainActivity.java ::

```

package com.example.icem_pr_5_login;
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);
    }
}

```

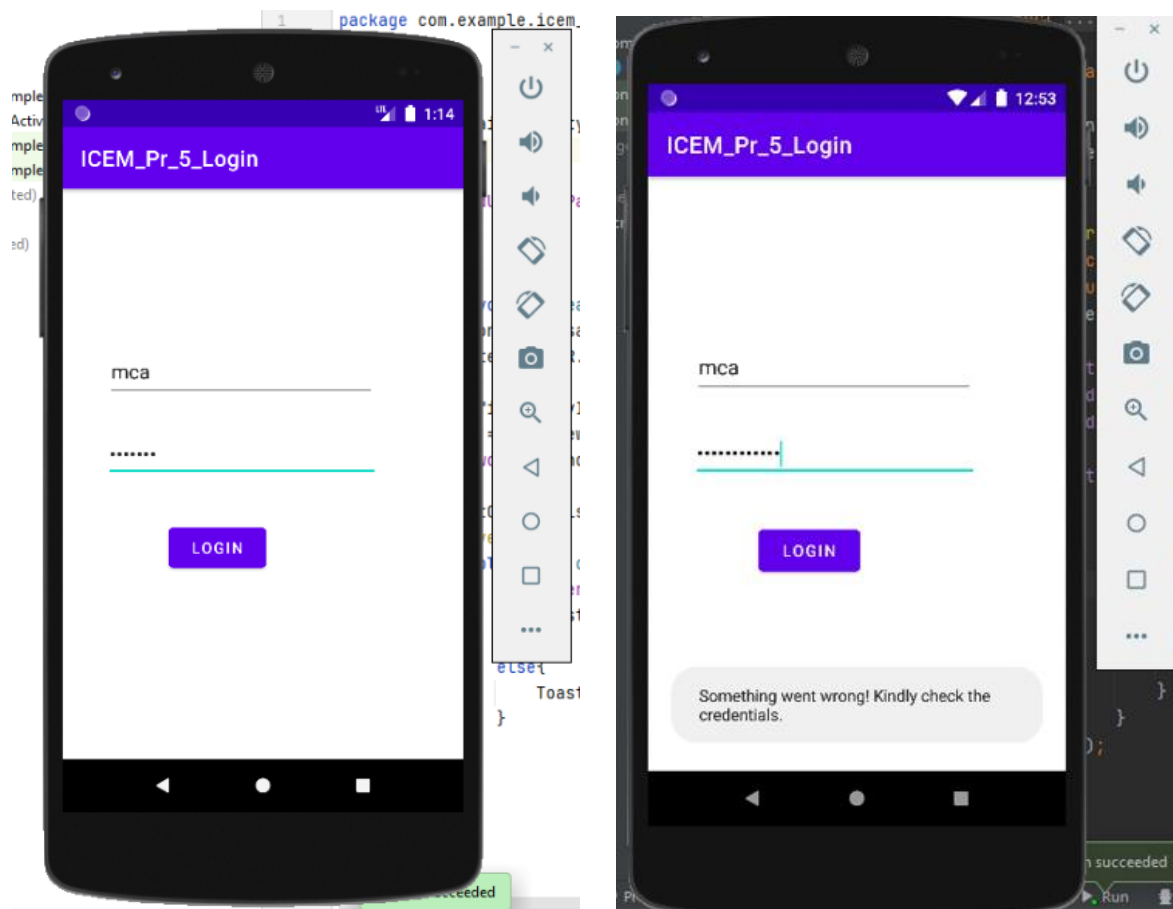
```

        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();
                }
            }
        });
    }
}

```

Output ::



Q. 6 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) {
// 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;
}
}

```

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 {

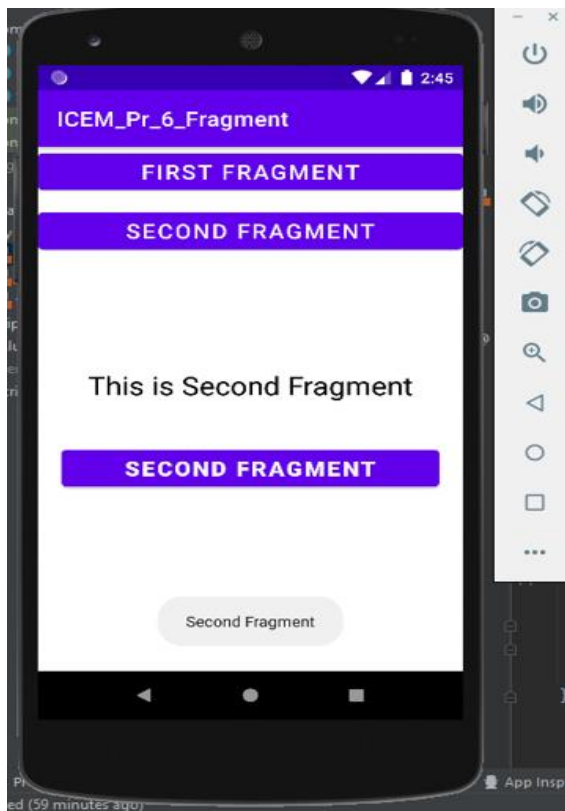
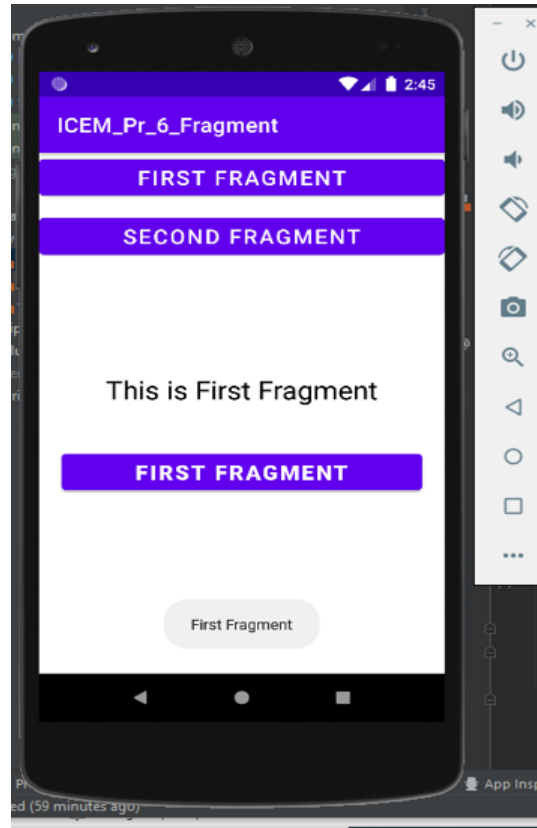
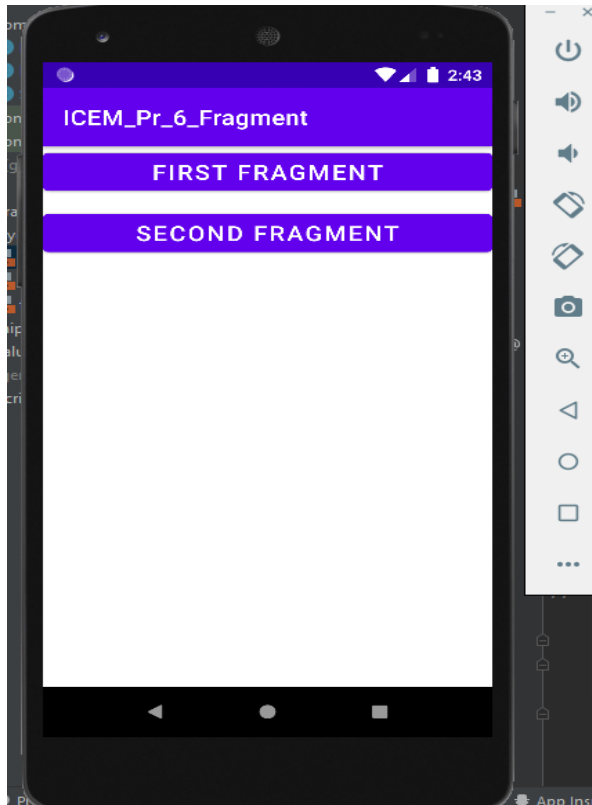
    View view;
    Button secondButton;

    @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);
// perform setOnClickListener on second Button
        secondButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
// display a message by using a Toast
                Toast.makeText(getActivity(), "Second Fragment",
Toast.LENGTH_LONG).show();
            }
        });
        return view;
    }
}

```

```
}  
}
```

Output ::



Q. 7 Demonstrate Array Adapter using List View to display list of fruits.

MainActivity.java ::

```
package com.example.a07_arrayadapter_listview;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

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();
            }
        });
    }
}
```

activity_main.xml:

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

```

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

```

Strings.xml :

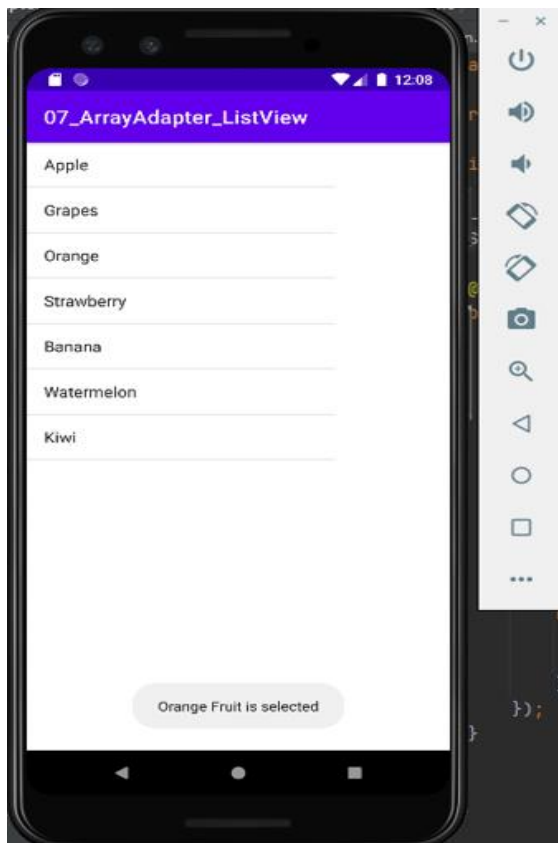
```

<resources>
    <string name="app_name">07_ArrayAdapter_ListView</string>

    <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>
</resources>

```

Output ::



Q. 8 Write an application to demonstrate Alert Dialog Box in android

Activity man.xml ::

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

    <Button
        android:id="@+id/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>
```

MainActivity.java ::

```
package com.example.icem_pr_8_alertdialogue;
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
```

```

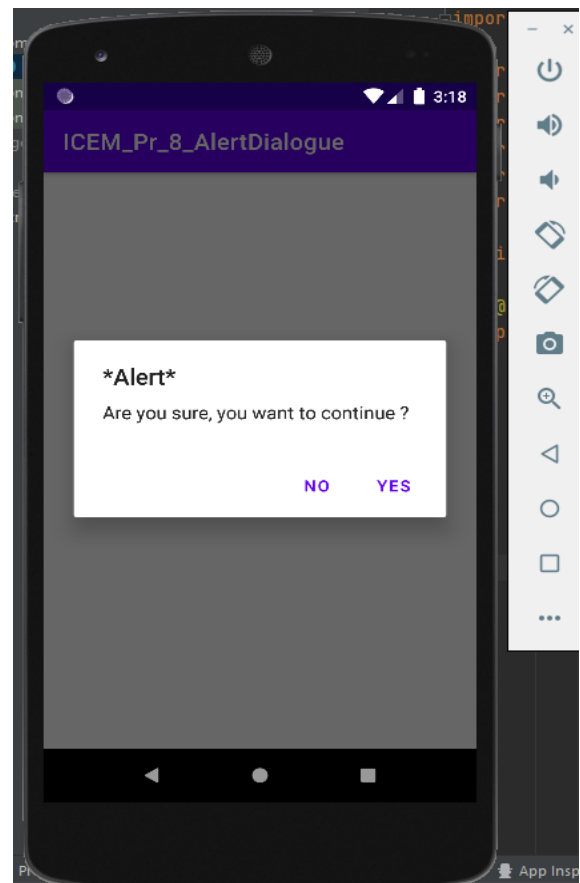
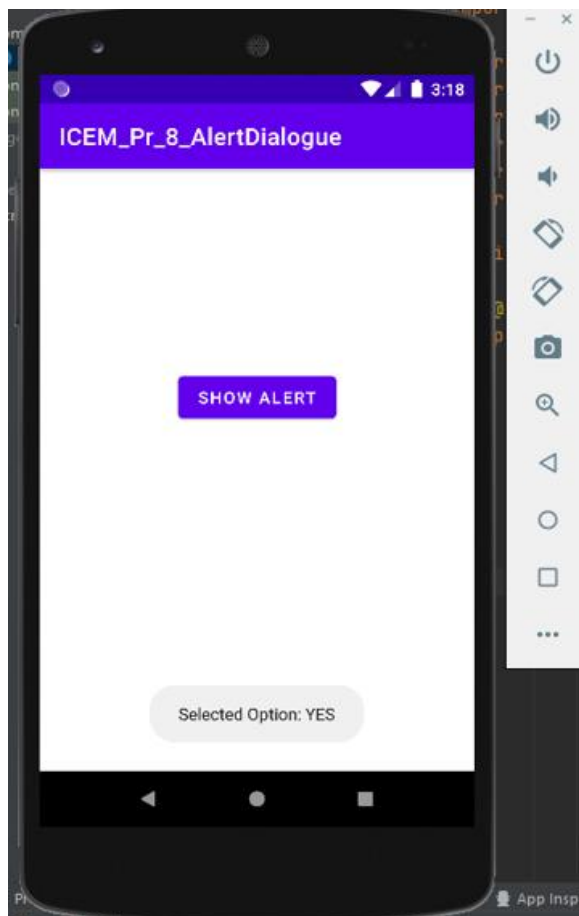
DialogInterface.OnClickListener() {
    @Override
    public void onClick(DialogInterface
dialog, int which) {

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();
}
});
}
}

```

Output ::



Q. 9 Demonstrate Options Menu, Context Menu and Popup Menu in android

Option Menu and Context Menu

Activity man.xml ::

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

    <Button
        android:id="@+id/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>
```

MainActivity.java ::

```
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 onContextItemSelected(@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.onContextItemSelected(item);
}
}

```

optionmenu.xml ::

```

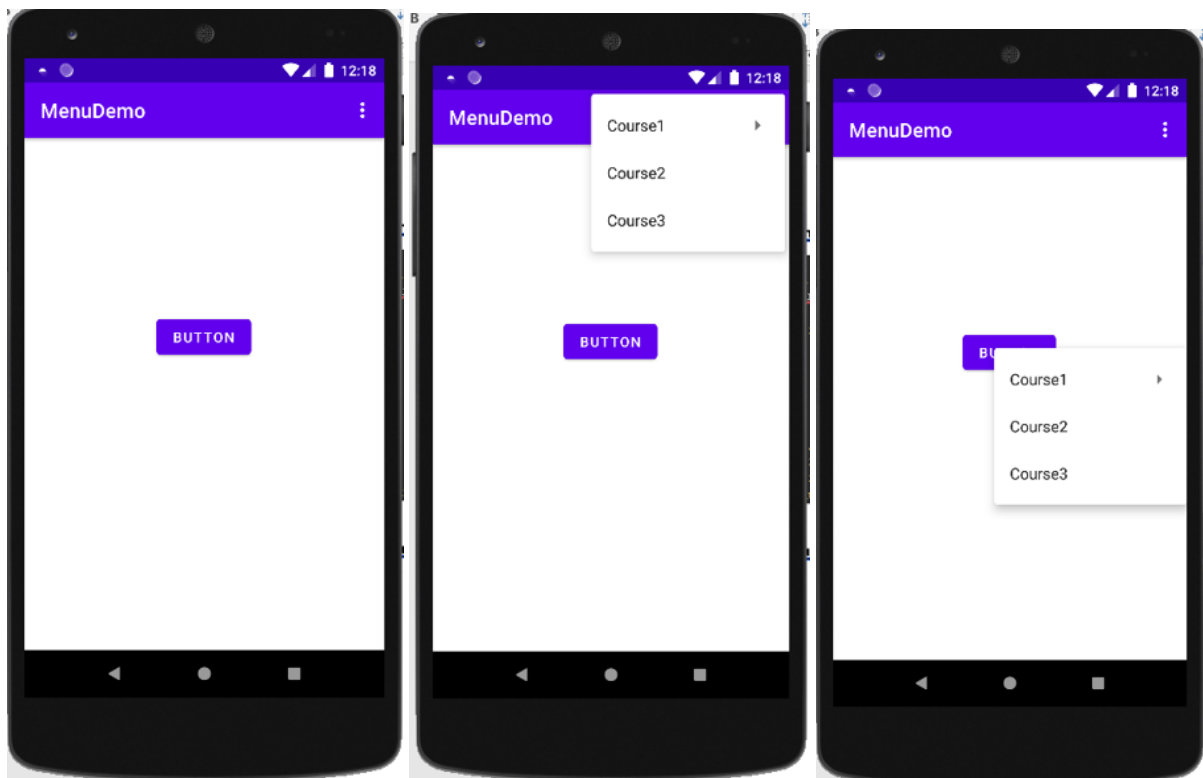
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:android="http://schemas.android.com/apk/res/android">

    <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 ::



Popup Menu

Activity main.xml ::

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

    <Button
        android:id="@+id/btnpop"
        android:layout_width="121dp"
        android:layout_height="61dp"
        android:text="Popup"
        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="0.272" />

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

MainActivity.java ::

```
package com.example.popupmenudemo;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.PopupMenu;
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.btnpop);

        btn.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View v) {
                //Creating the instance of PopupMenu
                PopupMenu menu = new PopupMenu(MainActivity.this, btn);
                //Inflating the Popup using xml file
                menu.getMenuInflater().inflate(R.menu.popup,
menu.getMenu());

                //registering popup with OnMenuItemClickListener
                menu.setOnMenuItemClickListener(new
PopupMenu.OnMenuItemClickListener() {
                    @Override
                    public boolean onMenuItemClick(MenuItem item) {
                        Toast.makeText(MainActivity.this, "You have selected
: " + item.getTitle(), Toast.LENGTH_SHORT).show();

                        return false;
                    }
                });
                menu.show();
            }
        });
    }
}
```

popup.xml ::

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">

    <item
        android:id="@+id/course1"
        android:title="course_1" />

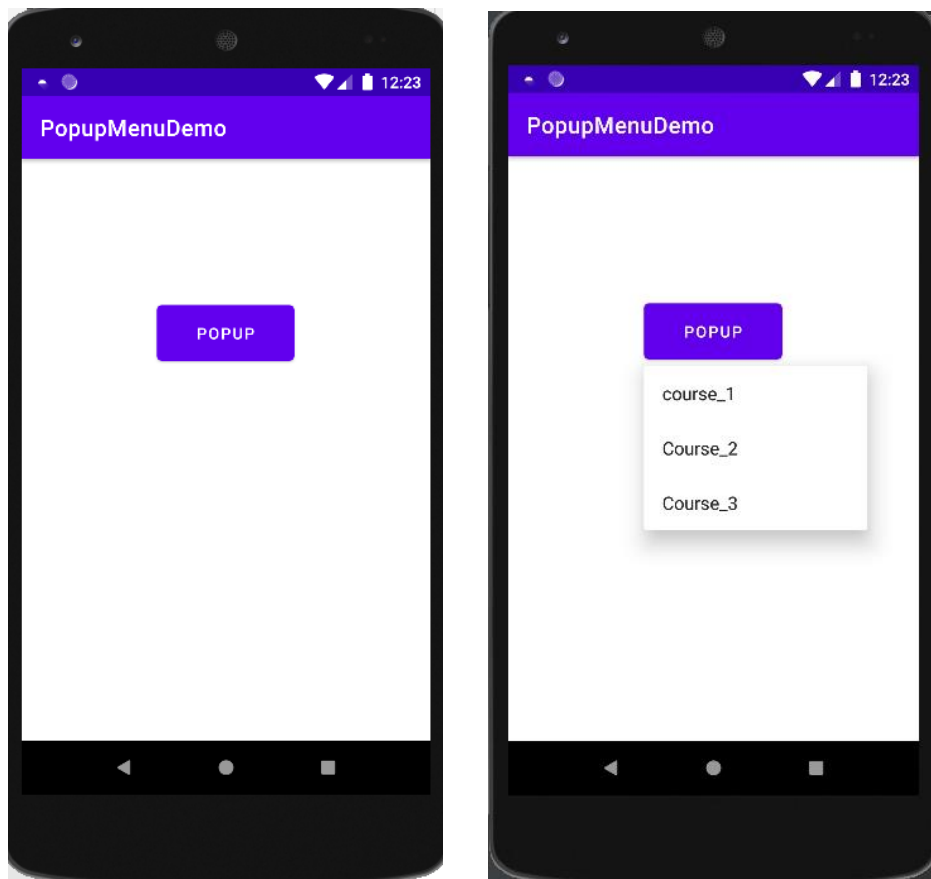
</menu>
```

```

<item
    android:id="@+id/course2"
    android:title="Course_2" />
<item
    android:id="@+id/course3"
    android:title="Course_3" />
</menu>

```

Output ::



Q. 10 Write an application to produce Notification

Activity man.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>

```

MainActivity.java ::

```

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.setContentText( "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 :

```

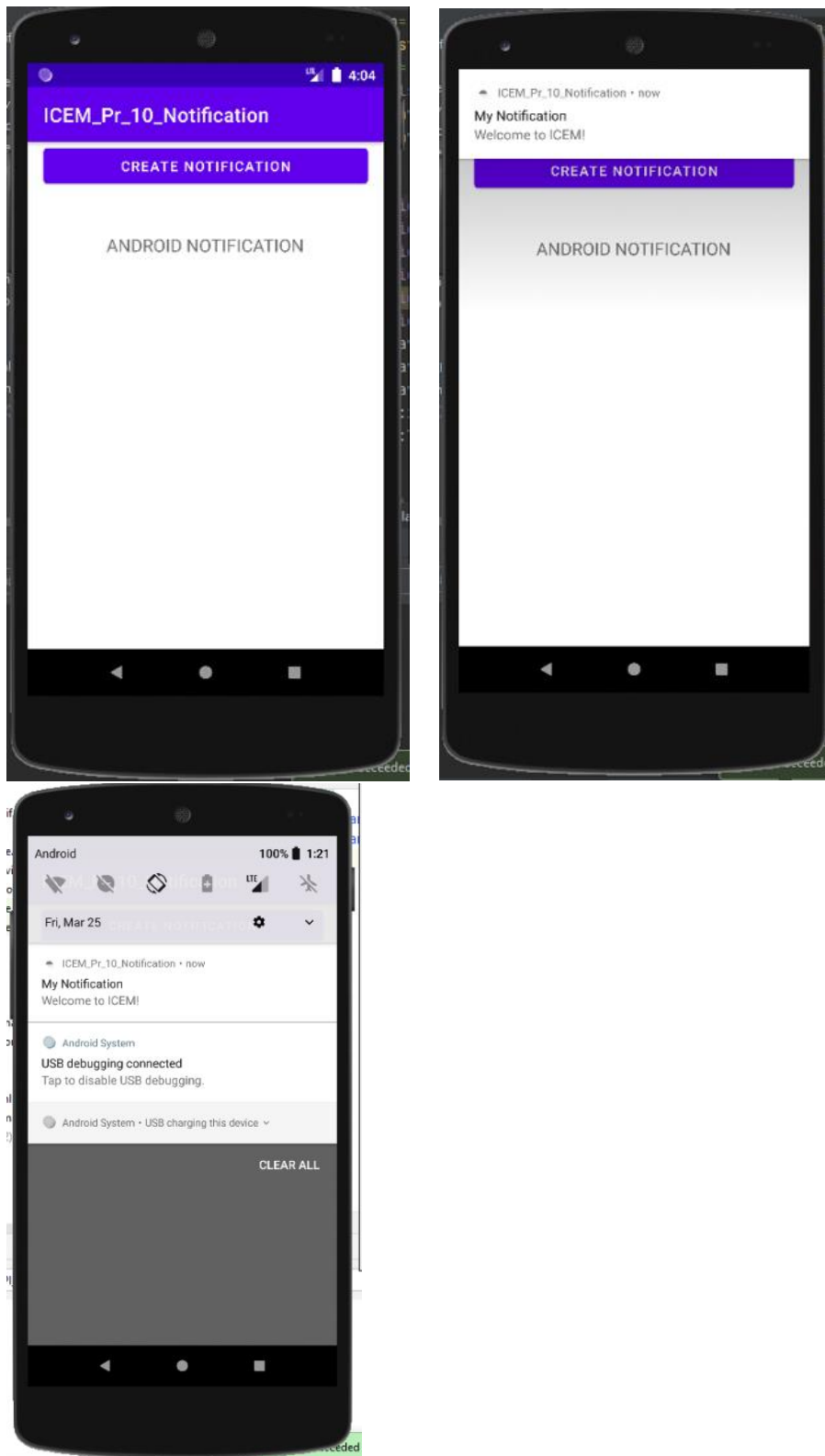
package com.example.icem_pr_10_notification;
import android.os.Bundle;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

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::



Q. 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)

Activity man.xml ::

```
<?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/textttitle"
        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/textttitle"
        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>

```

MainActivity.java ::

```

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,"Entery
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 ::

```
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;
        }
    }

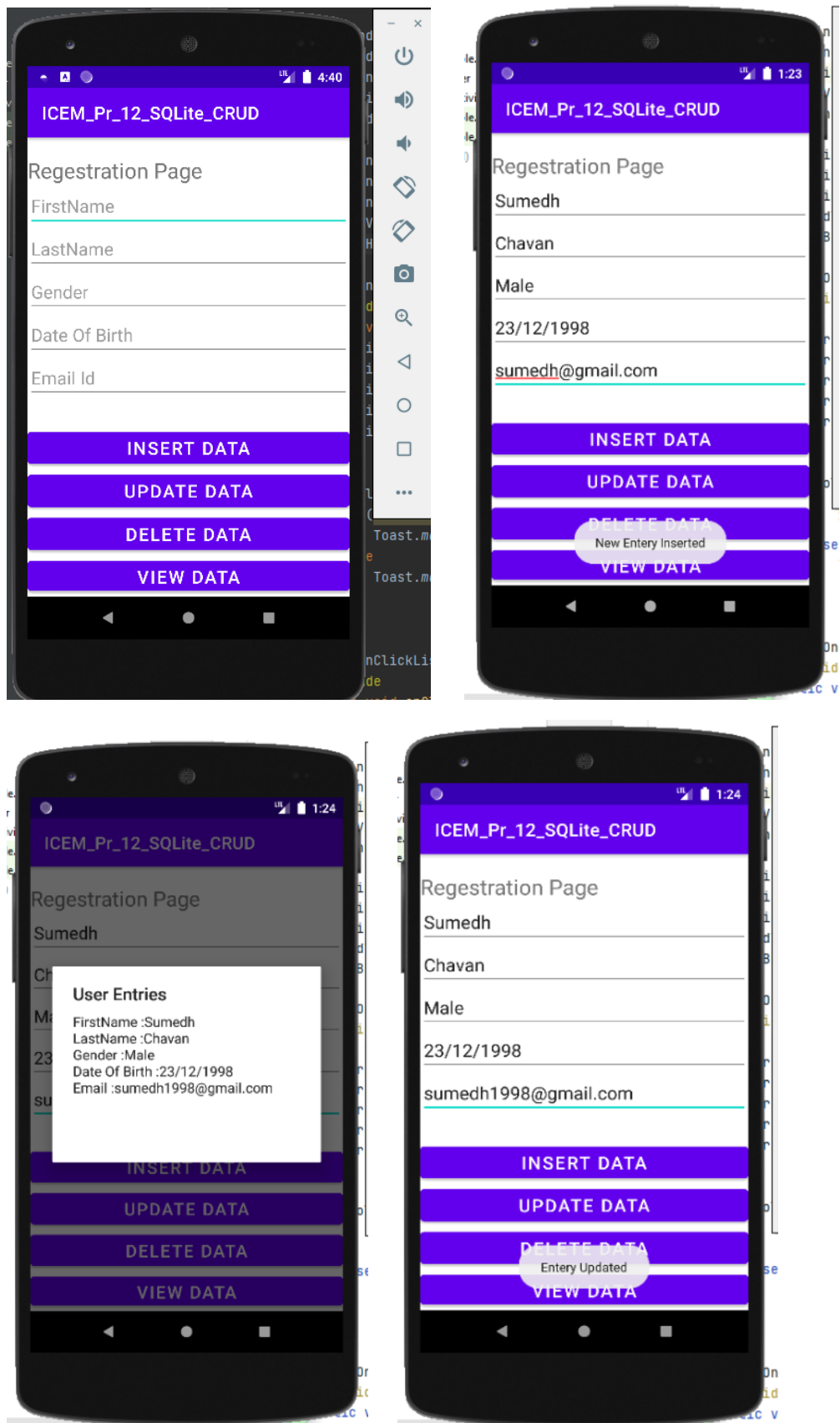
    public Boolean deleteuserdata(String firstname)
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from stud_registration
where firstname=?", new String[]{firstname});
        if (cursor.getCount()>0)
        {

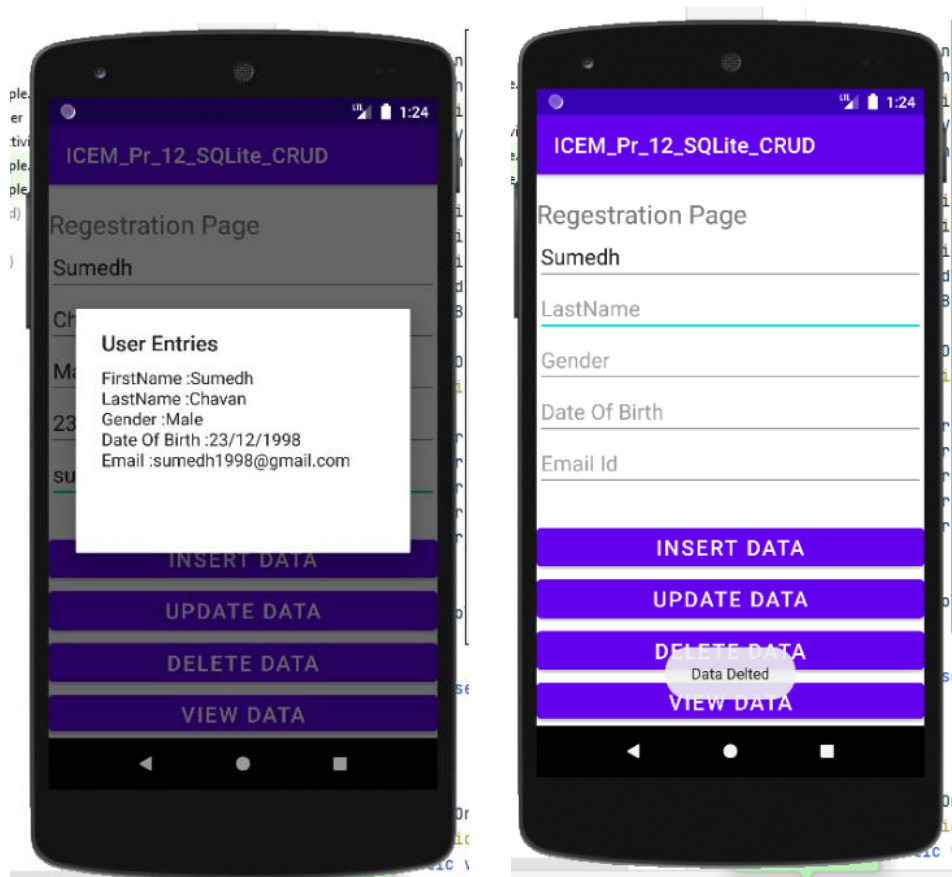
            long result=DB.delete("stud_registration",
"firstname=?", new String[] {firstname});
            if(result!=-1){
                return false;
            }else{
                return true;
            }
        }else
        {
            return false;
        }
    }

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

```

Output ::





Q. 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.

Activity man.xml ::

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

```

MainActivity.java ::

```

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;
}
@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,
@SuppressLint("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(new 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;
}

```

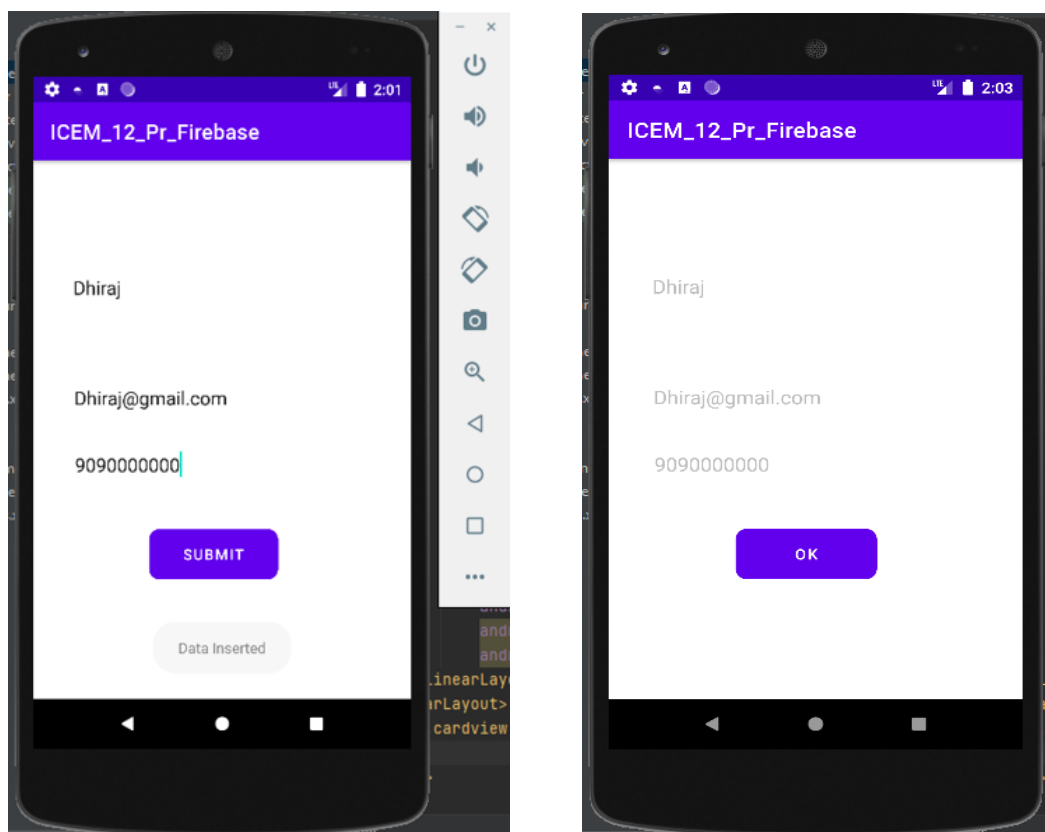


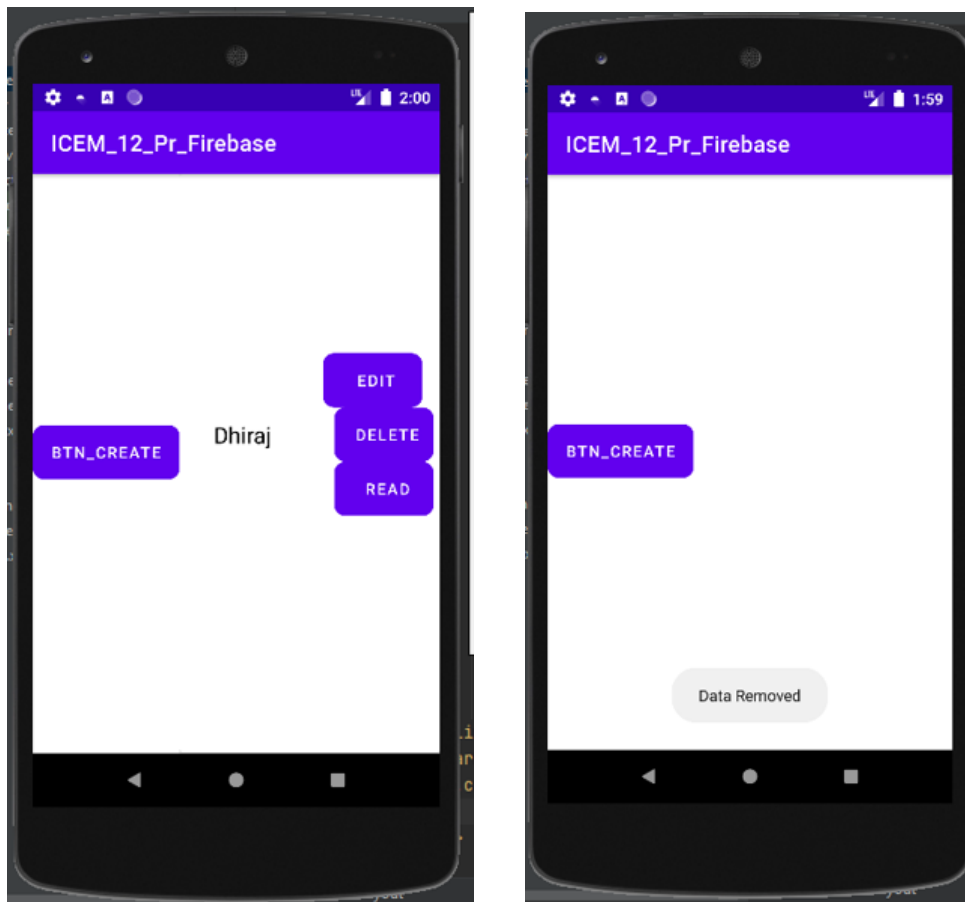
```

public DBHelper(String userName, String email, String number) {
    this.userName = userName;
    this.email = email;
    this.number = number;
}
public String getUserName() {
    return userName;
}
public String getEmail() {
    return email;
}
public String getNumber() {
    return number;
}
}

```

Output ::





Q. 13 Demonstrate WebView to display the web pages in an android application.

Activity man.xml ::

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="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>

```

MainActivity.java ::

```

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.setContentText( "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;

```

```

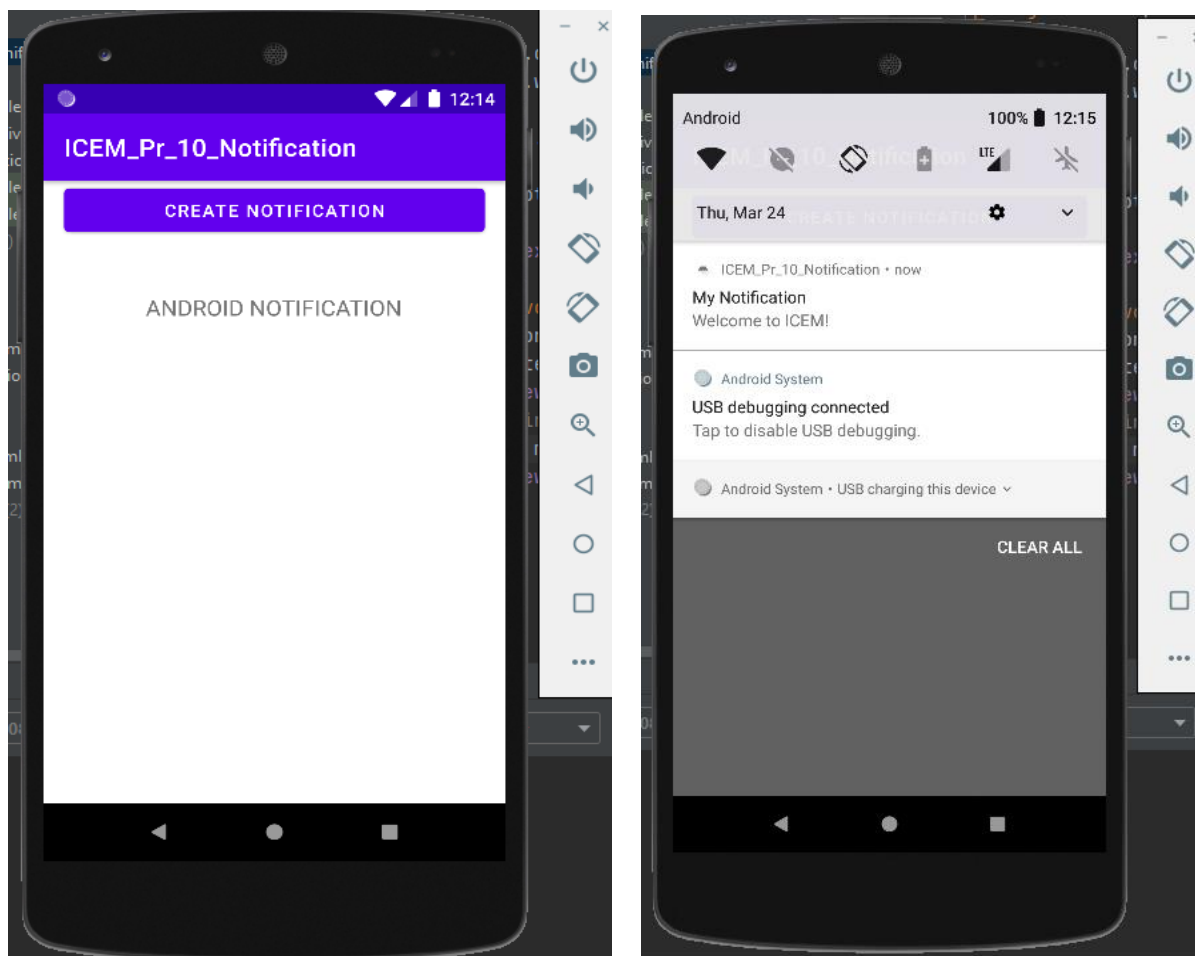
import androidx.appcompat.app.AppCompatActivity;

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.text_view);
        //getting the notification message
        String message=getIntent().getStringExtra("message");
        textView.setText(message);
    }
}

```

Output ::



Q. 14 Write an android app to write JSON data into a file and read JSON data from created file.

Activity_main.xml ::

```
<?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>
```

MainActivity.java ::

```
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;
```

```

@SuppressLint("SetTextI18n")

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

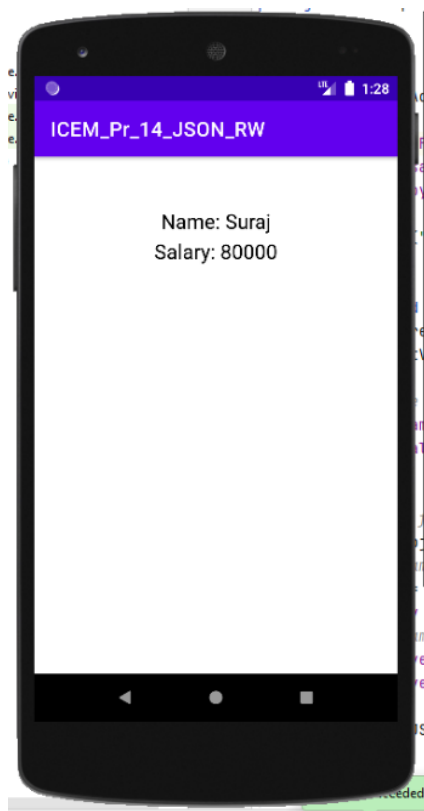
    // get the reference of TextView's
    employeeName = findViewById(R.id.name);
    employeeSalary = findViewById(R.id.salary);

    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 ::



Q. 15 Write an application to display a PDF as an image in React app using URL

App.js :

```
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 :

```
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
  first page

  function onDocumentLoadSuccess({ numPages }) {
    setNumPages(numPages);
    setPageNumber(1);
  }

  function changePage(offset) {
    setPageNumber(prevPageNumber => prevPageNumber + offset);
  }

  function previousPage() {
    changePage(-1);
  }

  function nextPage() {
```



```

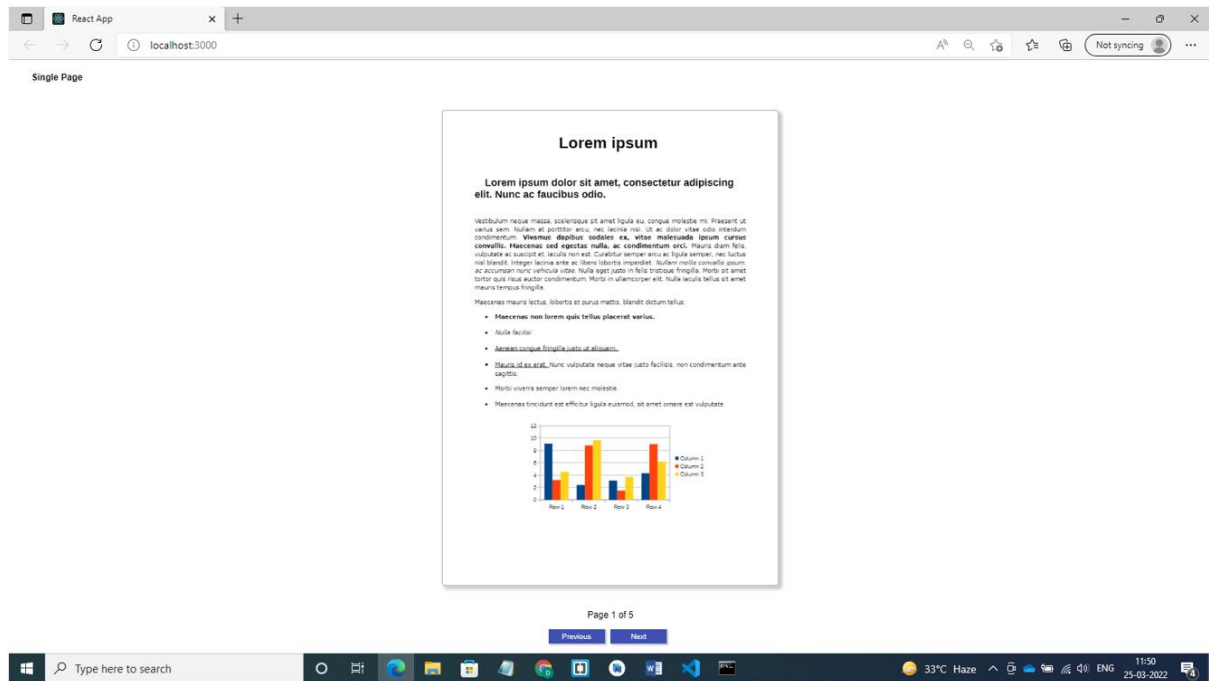
    changePage(1);
  }

  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 :



Q. 16 Develop simple flutter application to open a browser using Android SDK

Main.dart :

```
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 ::

