MCA - II

Sem - III

Subject
Mobile Application Development [IT31L]

For Academic Year 2022-2023

Department of Master of Computer Application

CERTIFICATE

This is to certify that Mr. / Miss **FULARI AKASH KALLAPPA** of Class **MCA (SEM-III)**, Roll No. **MC21017**, Exam Seat No.   , has completed all the Term Work / Practical work in the subject **"Mobile Application Development" (IT31L)** satisfactorily in the Department **of MCA** as prescribed by **Savitribai Phule Pune University** in the academic year 2022-2023.

Coordinator   **Director**

Examiner1 Sign   **Examiner2 Sign**

ZEAL EDUCATION SOCIETY'S
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Assignment No. 1

Subject: - [IT31L] Mobile Application Development

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2	Write a Program to change text of the button on the click of button.				
3	Write a Program which changes the color of the text given by user.				
4	Write a Program to find Addition, Multiplication, Division and Subtraction of two numbers.				
5	Write a Program to find whether the given number is odd or even.				
6	Write a Program to find greater number among three given numbers.				
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9	Write a Program to display simple list view.				

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Assignment No. 2

Subject: - [IT31L] Mobile Application Development

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8	Write a Program to create Toggle button				

Assignment: 01

Class : MCA - II
Roll No. : MC21017
Date :

Q 1 : Create a graphical layout for registration having fields Name, Address, Contact Number, E-mail id and submit button.

activity_register.xml

```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=".RegisterActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:padding="20dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        tools:ignore="MissingConstraints">
        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:paddingTop="10dp"
            android:paddingBottom="25dp"
            android:text="Register FORM"
            android:textColor="@color/purple_500"
            android:textAlignment="center"
            android:textAllCaps="true"
            android:textSize="20sp"
            android:textStyle="bold" />
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical"
            android:paddingBottom="15dp">
            <TextView
```

```xml
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginBottom="3dp"
      android:text="First Name" />
    <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:inputType="textPersonName"
      android:text=""
      android:hint="Enter First Name" />
  </LinearLayout>
  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:paddingBottom="15dp">
    <TextView
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginBottom="3dp"
      android:text="Second Name" />
    <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:inputType="textPersonName"
      android:text=""
      android:hint="Enter Second Name" />
  </LinearLayout>
  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:paddingBottom="15dp">
    <TextView
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginBottom="3dp"
      android:text="Last Name" />
    <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:inputType="textPersonName"
      android:text=""
      android:hint="Enter Last Name" />
  </LinearLayout>
  <LinearLayout
```

```xml
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="vertical"
      android:paddingBottom="15dp">
      <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="3dp"
        android:text="Email ID" />
      <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:inputType="textPersonName"
        android:text=""
        android:hint="Enter Email Id" />
  </LinearLayout>
  <LinearLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="vertical"
      android:paddingBottom="15dp">
      <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="3dp"
        android:text="Contact Number" />
      <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:inputType="textPersonName"
        android:text=""
        android:hint="Enter Contact Number" />
  </LinearLayout>
  <LinearLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="vertical"
      android:paddingBottom="15dp">
      <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="3dp"
        android:text="Address" />
      <EditText
        android:layout_width="match_parent"
        android:layout_height="95dp"
```

```
            android:layout_gravity="top"
            android:gravity="start"
            android:inputType="textMultiLine"
            android:text=""
            android:hint="Enter Address Line"
            android:textAlignment="textStart" />
    </LinearLayout>
    <com.google.android.material.button.MaterialButton
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="REGISTER NOW"
        android:padding="15dp"
        app:cornerRadius="100dp"
        android:layout_margin="7dp"/>
  </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

RegisterActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class RegisterActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_register);
        getSupportActionBar().setTitle("Register");
        getSupportActionBar().setSubtitle("Fulari A. K");
    }
}
```

Outputs :

Register
Fulari A. K

REGISTER FORM

First Name

Enter First Name

Second Name

Enter Second Name

Last Name

Enter Last Name

Email ID

Enter Email Id

Contact Number

Enter Contact Number

Address

Enter Address Line

REGISTER NOW

Register
Fulari A. K

REGISTER FORM

First Name

Akash

Second Name

Kallappa

Last Name

Fulari

Email ID

akashfulari31@gmail.com

Contact Number

7887545834

Address

Pune

REGISTER NOW

Q 2 : Write a program to change text of the button on the click of button.

activity_text_change.xml

```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=".TextChangeActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        android:gravity="center_vertical"
        tools:ignore="MissingConstraints"
        android:padding="20dp">

        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="WEL COME"
            android:padding="30dp"
            android:textStyle="bold"
            android:textSize="20dp"
            android:textAlignment="center"/>

        <com.google.android.material.button.MaterialButton
            android:id="@+id/button2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            app:cornerRadius="100dp"
            android:paddingTop="20dp"
            android:paddingBottom="20dp"
            android:text="Change Text" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

TextChangeActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class TextChangeActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_text_change);
        getSupportActionBar().setTitle("Text Change");
        getSupportActionBar().setSubtitle("Fulari A. K");
        TextView tv = findViewById(R.id.textView2);
        Button btn = findViewById(R.id.button2);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                tv.setText("TO MCA DEPARTMENT");
            }
        });

    }
}
```
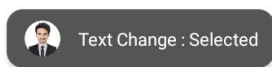
Outputs :

Text Change
Fulari A. K

Text Change
Fulari A. K

WEL COME

TO MCA DEPARTMENT

CHANGE TEXT

CHANGE TEXT

Text Change : Selected

Q 3 : Write a program which changes the color of the text given by user.

activity_color_change.xml

```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=".ColorChangeActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        android:gravity="center_vertical"
        tools:ignore="MissingConstraints"
        android:padding="20dp">
        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="20dp"
            android:padding="10dp"
            android:text="WEL COME TO MCA DEPARTMENT"
            android:textAlignment="center"
            android:textStyle="bold"
            android:textSize="18dp" />
        <EditText
            android:id="@+id/edittext"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:textSize="16dp"
            android:layout_marginBottom="20dp"
            android:hint="Enter color name"
            android:inputType="text" />
        <com.google.android.material.button.MaterialButton
            android:id="@+id/button2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            app:cornerRadius="100dp"
```

```
            android:paddingTop="20dp"
            android:paddingBottom="20dp"
            android:text="Validate Color" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

ColorChangeActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;
import kotlin.jvm.Throws;
import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class ColorChangeActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_color_change);
        getSupportActionBar().setTitle("Text Change");
        getSupportActionBar().setSubtitle("Fulari A. K");
        TextView tv = findViewById(R.id.textView2);
        EditText et = findViewById(R.id.edittext);
        Button btn = findViewById(R.id.button2);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int clr = getColor(et.getText().toString());
                tv.setTextColor(clr);
            }
        });
    }
    public int getColor(String clr){
        int colr = Color.BLACK;
        clr = clr.toLowerCase();
        switch (clr){
            case "white":
```
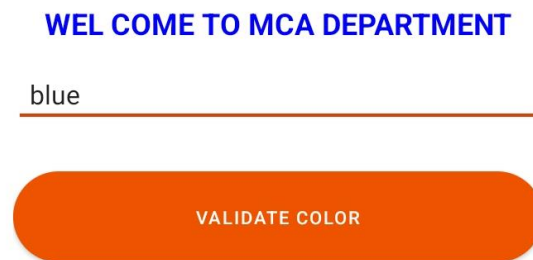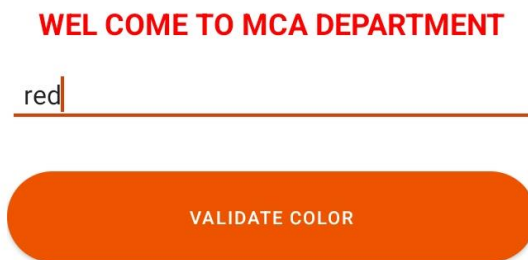
```java
          colr= Color.WHITE;
          break;
        case "green":
          colr= Color.GREEN;
          break;
        case "gray":
          colr= Color.GRAY;
          break;
        case "red":
          colr= Color.RED;
          break;
        case "blue":
          colr= Color.BLUE;
          break;
        case "yellow":
          colr= Color.YELLOW;
          break;
        case "megenta":
          colr= Color.MAGENTA;
          break;
        case "lightgray":
          colr= Color.LTGRAY;
          break;
        case "darkgray":
          colr= Color.DKGRAY;
          break;
        default:
          Toast.makeText(this, "Invalid Color entered", Toast.LENGTH_SHORT).show();
          break;
    }
    return colr;
  }
}
```

Outputs :

WEL COME TO MCA DEPARTMENT

red

VALIDATE COLOR

WEL COME TO MCA DEPARTMENT

blue

VALIDATE COLOR

Q 4 : Write a program to add, multiply, division, subtraction of two numbers.

activity_math_operatons.xml

```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=".MathOperatonsActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        android:gravity="center_vertical"
        tools:ignore="MissingConstraints"
        android:padding="20dp">
        <EditText
            android:id="@+id/numA"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:textSize="16dp"
            android:layout_marginBottom="20dp"
            android:hint="Enter First Number"
            android:inputType="number" />
        <EditText
            android:id="@+id/numB"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:textSize="16dp"
            android:layout_marginBottom="20dp"
            android:hint="Enter Second Number"
            android:inputType="text" />
        <TextView
            android:id="@+id/msg"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:layout_marginBottom="5dp"
```

```
          android:text=""
          android:textAlignment="center"
          android:textSize="14dp" />
      <com.google.android.material.button.MaterialButton
          android:id="@+id/add"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
          app:cornerRadius="100dp"
          android:paddingTop="20dp"
          android:paddingBottom="20dp"
          android:text="ADDITION" />
      <com.google.android.material.button.MaterialButton
          android:id="@+id/sub"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
          app:cornerRadius="100dp"
          android:paddingTop="20dp"
          android:paddingBottom="20dp"
          android:text="SUBSTRACTION" />
      <com.google.android.material.button.MaterialButton
          android:id="@+id/multi"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
          app:cornerRadius="100dp"
          android:paddingTop="20dp"
          android:paddingBottom="20dp"
          android:text="MULTIPLICATION" />
      <com.google.android.material.button.MaterialButton
          android:id="@+id/div"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
          app:cornerRadius="100dp"
          android:paddingTop="20dp"
          android:paddingBottom="20dp"
          android:text="DIVISION" />
      <com.google.android.material.button.MaterialButton
          android:id="@+id/mod"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
          app:cornerRadius="100dp"
          android:paddingTop="20dp"
          android:paddingBottom="20dp"
          android:text="MODULE" />
  </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

MathOperatonsActivity.java

```java
package com.apaka.akashfulariassignment;

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 MathOperatonsActivity extends AppCompatActivity implements
View.OnClickListener{
    private TextView tv;
    private EditText a;
    private EditText b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_math_operatons);
        getSupportActionBar().setTitle("Math Operations");
        getSupportActionBar().setSubtitle("Fulari A. K");
        tv = findViewById(R.id.msg);
        a = findViewById(R.id.numA);
        b = findViewById(R.id.numB);
        Button add = findViewById(R.id.add);
        Button sub = findViewById(R.id.sub);
        Button multi = findViewById(R.id.multi);
        Button div = findViewById(R.id.div);
        Button mod = findViewById(R.id.mod);
        add.setOnClickListener(this);
        sub.setOnClickListener(this);
        multi.setOnClickListener(this);
        div.setOnClickListener(this);
        mod.setOnClickListener(this);
    }
    @Override
    public void onClick(View view) {
        float num1 = Float.parseFloat(a.getText().toString());
        float num2 = Float.parseFloat(b.getText().toString());
        switch (view.getId()){
            case R.id.add:
                tv.setText("Addition : "+ (num1+num2));
                break;
            case R.id.sub:
```

```java
                tv.setText("Substraction : "+ (num1-num2));
                break;
            case R.id.multi:
                tv.setText("Multiplication : "+ (num1*num2));
                break;
            case R.id.div:
                tv.setText("Divission : "+ (num1/num2));
                break;
            case R.id.mod:
                tv.setText("Modules : "+ (num1%num2));
                break;
        }
    }
}
```

Outputs :

Math Operations
Fulari A. K
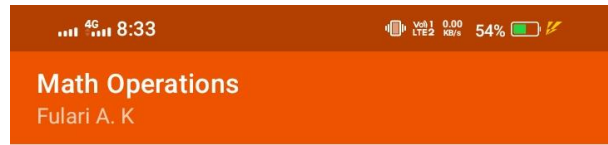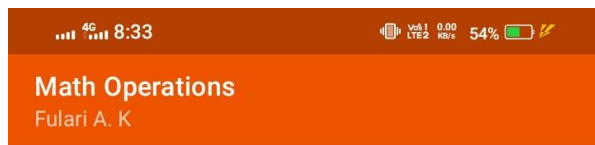
35

5

Addition : 40.0

ADDITION

SUBSTRACTION

MULTIPLICATION

DIVISION

MODULE

Math Operations
Fulari A. K

35

5

Substraction : 30.0

ADDITION

SUBSTRACTION

MULTIPLICATION

DIVISION

MODULE

Math Operations
Fulari A. K

35

5

Multiplication : 175.0

ADDITION

SUBSTRACTION

MULTIPLICATION

DIVISION

MODULE

Math Operations
Fulari A. K

35

5

Division : 7.0

ADDITION

SUBSTRACTION

MULTIPLICATION

DIVISION

MODULE

Q 5 : Write a program to find out a given number is odd or even.

activity_even_odd.xml

```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=".EvenOddActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        android:gravity="center_vertical"
        tools:ignore="MissingConstraints"
        android:padding="20dp">
        <EditText
            android:id="@+id/edittext"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:textSize="16dp"
            android:layout_marginBottom="20dp"
            android:hint="Enter Number"
            android:inputType="number" />
        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginBottom="20dp"
            android:padding="10dp"
            android:text=""
            android:textAlignment="center"
            android:textSize="14dp" />
        <com.google.android.material.button.MaterialButton
            android:id="@+id/button2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            app:cornerRadius="100dp"
```

```
            android:paddingTop="20dp"
            android:paddingBottom="20dp"
            android:text="Validate Number" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

EvenOddActivity.java

```java
package com.apaka.akashfulariassignment;

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 EvenOddActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_even_odd);
        getSupportActionBar().setTitle("Even Odd");
        getSupportActionBar().setSubtitle("Fulari A. K");
        TextView tv = findViewById(R.id.textView2);
        EditText et = findViewById(R.id.edittext);
        Button btn = findViewById(R.id.button2);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = et.getText().toString();
                if(str.length()>0) {
                    int num = Integer.parseInt(str);
                    if (num % 2 == 0)
                        tv.setText("Number is Even");
                    else
                        tv.setText("Number is Odd");
                }
                else{
                    tv.setText("Please Enter Number");
                }
            }
        });
```

```
        }
}
```

Outputs :

Q 6 : Write a program to find a greater number from given 3 numbers.

activity_greater_number.xml

```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=".GreaterNumberActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        android:gravity="center_vertical"
        tools:ignore="MissingConstraints"
        android:padding="20dp">
        <EditText
            android:id="@+id/edittext"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:textSize="16dp"
            android:layout_marginBottom="20dp"
            android:hint="Enter Numbers Seprate by COMMA"
            android:inputType="text" />
        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginBottom="5dp"
            android:padding="10dp"
            android:text=""
            android:textAlignment="center"
            android:textSize="14dp" />
        <com.google.android.material.button.MaterialButton
            android:id="@+id/button2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            app:cornerRadius="100dp"
            android:paddingTop="20dp"
```

```
            android:paddingBottom="20dp"
            android:text="Validate Greater Number" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

GreaterNumberActivity.java

```java
package com.apaka.akashfulariassignment;

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;
import java.util.Arrays;

public class GreaterNumberActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_greater_number);
        getSupportActionBar().setTitle("Greate Number");
        getSupportActionBar().setSubtitle("Fulari A. K");
        TextView tv = findViewById(R.id.textView2);
        EditText et = findViewById(R.id.edittext);
        Button btn = findViewById(R.id.button2);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = et.getText().toString();
                if(str.indexOf(",")>0){
                    int[] ns = getNumberArray(str);
                    int max = getMaxFromArray(ns);
                    tv.setText("Maximum Number is : "+max);
                }
                else{
                    tv.setText("Invalid numbers given!!!.");
                }
            }
        });
    }
```

```java
    public int[] getNumberArray(String str){
        String[] sts = str.split(",");
        int[] nums = new int[sts.length];
        int i = 0;
        for(String st:sts) {
            if (st != "" && st != null) {
                int n = Integer.parseInt(st);
                nums[i] = n;
                i++;
            }
        }
        return nums;
    }
    public int getMaxFromArray(int[] arr){
        int a = 0;
        for(int i=0;i<arr.length;i++){
            if(arr[i]>a){
                a = arr[i];
                i = -1;
            }
        }
        return a;
    }
}
```

Outputs :

Greate Number	Greate Number
Fulari A. K	Fulari A. K
36,91,52,74,19,37,917,81,729,927,72,63,53	28,92,37,53,81
Maximum Number is : 927	Maximum Number is : 92
VALIDATE GREATER NUMBER	VALIDATE GREATER NUMBER

Q 7 : Create a simple calculator.

activity_calculator.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout
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=".CalculatorActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_gravity="bottom"
        android:gravity="bottom"
        android:orientation="vertical">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:orientation="vertical"
            android:gravity="top"
            android:padding="20dp"
            android:layout_marginBottom="20dp">
            <LinearLayout
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_gravity="center_vertical"
                android:gravity="center_vertical"
                android:orientation="horizontal">
                <TextView
                    android:id="@+id/firstView"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:textAlignment="textEnd"
                    android:textStyle="bold"
                    android:layout_weight="1"
                    android:textSize="22dp"/>
                <TextView
                    android:id="@+id/symbol"
                    android:layout_width="30dp"
                    android:layout_height="wrap_content"
                    android:textAlignment="textEnd"
```

```xml
                android:textStyle="bold"
                android:textColor="#FF6600"
                android:textSize="16dp"/>
        </LinearLayout>
        <EditText
            android:id="@+id/inputs"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:inputType="number"
            android:textAlignment="textEnd"
            android:hint="Enter Number"
            android:background="@android:color/transparent"
            android:textStyle="bold"
            android:textSize="25dp">
        </EditText>
    </LinearLayout>

    <LinearLayout
        android:id="@+id/views"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:layout_gravity="bottom"
        android:padding="20dp"
        android:background="#E3E3E3"
        android:gravity="bottom">
    </LinearLayout>
  </LinearLayout>

</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

CalculatorActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.EditText;
import android.widget.GridLayout;
import android.widget.LinearLayout;
import android.widget.TextView;
import com.google.android.material.button.MaterialButton;

public class CalculatorActivity extends AppCompatActivity implements View.OnClickListener{
    private String[][] btns = {{"AC","□","%","/"},{"7","8","9","×"},{"4","5","6","-
"},{"1","2","3","+"},{"0",".","="}};
    private LinearLayout lLayout;
    private EditText inputs;
    private String symbol = "";
    private TextView sview,firstView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_calculator);
        getSupportActionBar().setTitle("Calculator");
        getSupportActionBar().setSubtitle("Fulari A. K");
        lLayout = (LinearLayout) findViewById(R.id.views);
        inputs = (EditText) findViewById(R.id.inputs);
        sview = (TextView) findViewById(R.id.symbol);
        firstView = (TextView) findViewById(R.id.firstView);
        firstView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str  = firstView.getText().toString();
                if(str!=null){
                    firstView.setText("");
                    sview.setText("");
                    inputs.setText(str);
                }
            }
```

```java
        });
        createLayoutView();
    }
    public void createLayoutView(){
        int n = 4;
        for(int i=0;i<btns.length;i++) {
            LinearLayout ll = new LinearLayout(getApplicationContext());
            LinearLayout.LayoutParams layoutParams = new
LinearLayout.LayoutParams(LinearLayout.LayoutParams.MATCH_PARENT,
LinearLayout.LayoutParams.WRAP_CONTENT);
            ll.setLayoutParams(layoutParams);
            ll.setOrientation(LinearLayout.HORIZONTAL);
            if(i==4)
                n=3;
            for (int j=0;j<n;j++) {
                String str = btns[i][j];
                LinearLayout.LayoutParams btnParams = new LinearLayout.LayoutParams(140,160);
                btnParams.setMargins(10, 10, 10, 10);
                if(str.equals("=") || i<4)
                    btnParams.weight = 1.0f;
                MaterialButton btn = new MaterialButton(this);
                btn.setText(str);
                if(str.equals(btns[0][0])){
                    btn.setBackgroundColor(Color.RED);
                    btn.setTextColor(Color.WHITE);
                }
                else if(str.equals(btns[0][1])){
                    btn.setBackgroundColor(Color.parseColor("#FF6600"));
                    btn.setTextColor(Color.WHITE);
                }
                else if(str.equals(btns[4][2])){
                    btn.setBackgroundColor(Color.parseColor("#0da22a"));
                    btn.setTextColor(Color.WHITE);
                }
                else{
                    btn.setBackgroundColor(Color.WHITE);
                    btn.setTextColor(Color.parseColor("#FF6600"));
                }
                btn.setTextSize(30);
                btn.setCornerRadius(100);
                btn.setLayoutParams(btnParams);
                btn.setOnClickListener(this);
                ll.addView(btn);
            }
            lLayout.addView(ll);
        }
```

```java
        }
@Override
public void onClick(View view) {
    Button btn = (Button) view;
    String str = btn.getText().toString();
    // to add symbols
    if(str==btns[0][2] || str==btns[0][3] || str==btns[1][3] || str==btns[2][3] || str==btns[3][3]){
        symbol = str;
        sview.setText(symbol);
        if(firstView.getText().toString().length()==0)
            firstView.setText(inputs.getText().toString());
        inputs.setText("");
    }
    // for clear btn
    else if(str==btns[0][0]){
        inputs.setText("");
    }
    // for erase btn
    else if(str==btns[0][1]){
        String ipstr = inputs.getText().toString();
        if(ipstr.length()>0) {
            String nstr = ipstr.substring(0, ipstr.length() - 1);
            inputs.getText().replace(0, ipstr.length(), nstr);
        }
    }
    // for equal_to/calculate
    else if(str==btns[4][2]){
        String str_first = firstView.getText().toString();
        String str_second = inputs.getText().toString();
        if(str_first!="" && str_second!="") {
            float expression = 0;
            float a = Float.parseFloat(str_first);
            float b = Float.parseFloat(str_second);
            if (symbol.equals(btns[3][3]))
                expression = a + b;
            else if (symbol.equals(btns[2][3]))
                expression = a - b;
            else if (symbol.equals(btns[1][3]))
                expression = a * b;
            else if (symbol.equals(btns[0][3]))
                expression = a / b;
            else if (symbol.equals(btns[0][2]))
                expression = a % b;
            firstView.setText("");
            sview.setText("");
            inputs.setText(String.valueOf(expression));
```

```
            }
        }
        else{
            addText(str);
        }
    }
    public void addText(String str){
        int pos = inputs.getSelectionEnd();
        inputs.getText().insert(pos,str);
        inputs.setSelection(inputs.getText().length());
    }
}
```
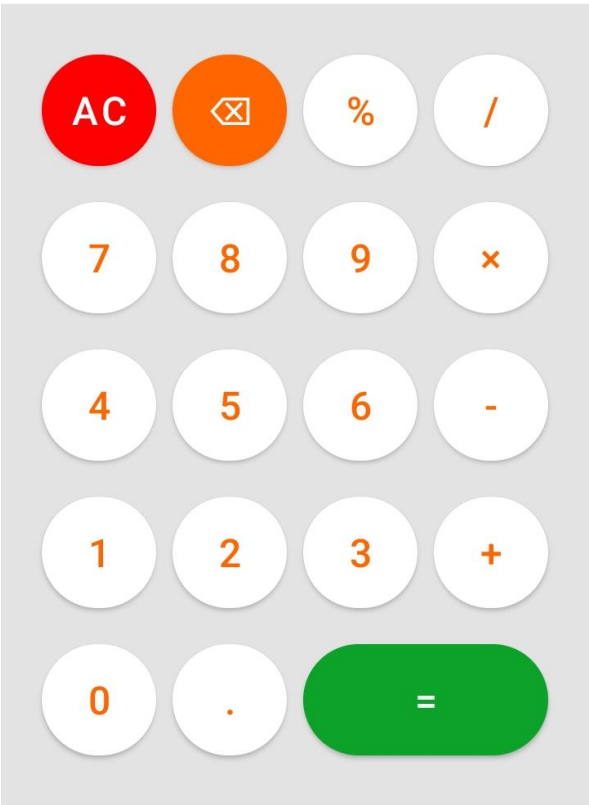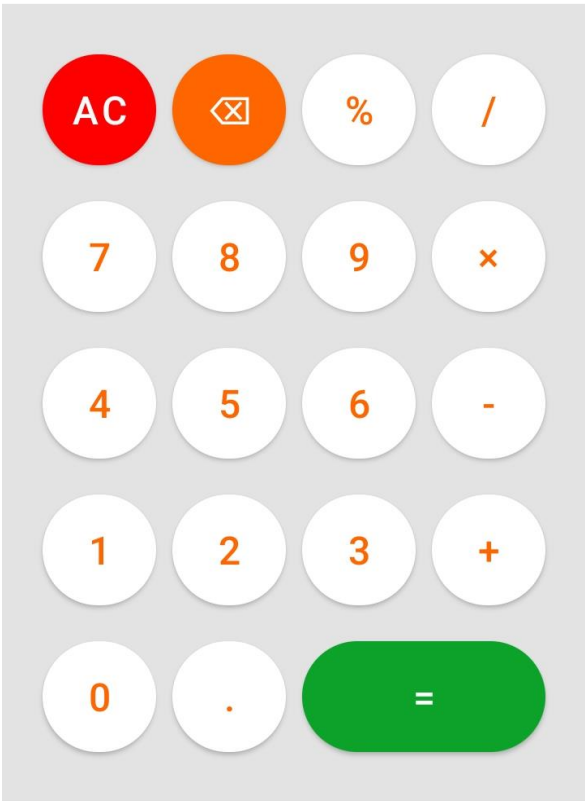
Outputs：

8:31 Calculator Fulari A. K	8:31 Calculator Fulari A. K
45 × 2	90.0

AC	⌫	%	/
7	8	9	×
4	5	6	-
1	2	3	+
0	.	=	

Q 8 : Write a program to find out given number is prime or not.

activity_prime_number.xml

```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=".PrimeNumberActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        android:gravity="center_vertical"
        tools:ignore="MissingConstraints"
        android:padding="20dp">
        <EditText
            android:id="@+id/edittext"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:textSize="16dp"
            android:layout_marginBottom="20dp"
            android:hint="Enter Number"
            android:inputType="number" />
        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginBottom="20dp"
            android:padding="10dp"
            android:text=""
            android:textAlignment="center"
            android:textSize="14dp" />
        <com.google.android.material.button.MaterialButton
            android:id="@+id/button2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            app:cornerRadius="100dp"
            android:paddingTop="20dp"
```

```
            android:paddingBottom="20dp"
            android:text="Validate Number" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

PrimeNumberActivity.java

```java
package com.apaka.akashfulariassignment;

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 PrimeNumberActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_prime_number);
        getSupportActionBar().setTitle("Prime Number");
        getSupportActionBar().setSubtitle("Fulari A. K");
        TextView tv = findViewById(R.id.textView2);
        EditText et = findViewById(R.id.edittext);
        Button btn = findViewById(R.id.button2);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = et.getText().toString();
                if(str.length()>0) {
                    int num = Integer.parseInt(str);
                    boolean bool = checkPrime(num);
                    if (bool)
                        tv.setText("Number is Prime");
                    else
                        tv.setText("Number is Not Prime");
                }
                else{
                    tv.setText("Please Enter Number");
                }
            }
        });
    }
    public boolean checkPrime(int num){
```

```
    boolean bool = true;
    if (num == 0 || num == 1)
        bool = false;
    for(int i=2;i<num/2;i++){
        if(num%i==0) {
            bool =false;
            break;
        }
    }
    return bool;
  }
}
```

Outputs :

Q 9 : Write a programme to display simple listview.

activity_list_view.xml

```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=".ListViewActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:padding="20dp"
        tools:ignore="MissingConstraints">
        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="My ListView"
            android:textSize="15dp"
            android:layout_marginBottom="10dp"/>
        <ListView
            android:id="@+id/items"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:scrollbars="vertical"/>
    </LinearLayout>

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

ListViewActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;

public class ListViewActivity extends AppCompatActivity {
    private ListView lv;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_list_view);
        getSupportActionBar().setTitle("List View");
        getSupportActionBar().setSubtitle("Fulari A. K");

        lv = (ListView) findViewById(R.id.items);
        String[] str = {"Calculator","Register","Text Change","Color Change","Math
Operations","EvenOdd","GreaterNo","PrimeNo","ListView"};
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,str);
        lv.setAdapter(adapter);
        lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {
                Toast.makeText(getApplicationContext(), adapter.getItem(i)+" : Selected",
Toast.LENGTH_SHORT).show();
            }
        });

    }
}
```
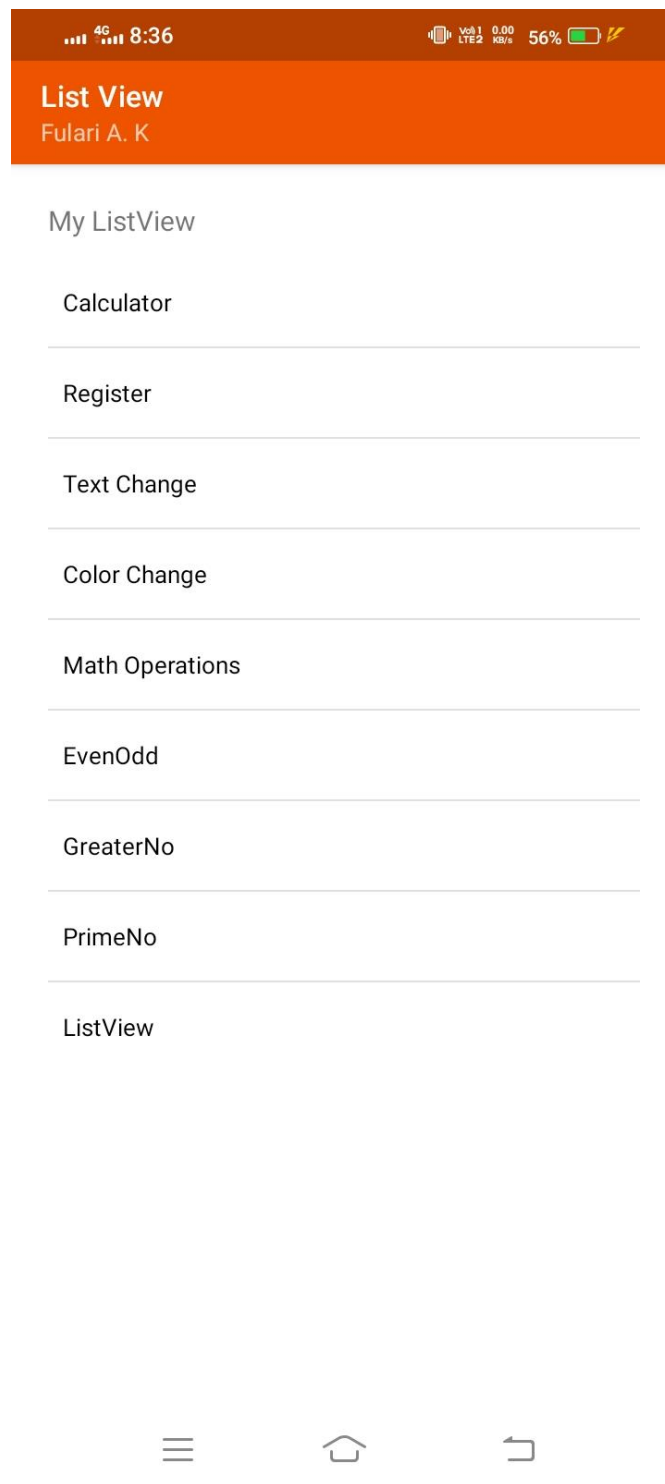
Outputs :

List View
Fulari A. K

My ListView

Calculator

Register

Text Change

Color Change

Math Operations

EvenOdd

GreaterNo

PrimeNo

ListView

Assignment: 02

Class   **: MCA - II**
Roll No.   **: MC21017**
Date   **:**

Q 1 : Create a login screen using Table layout.

activity_login_screen.xml

```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=".LoginScreenActivity">
   <TableLayout
      android:layout_width="match_parent"
      android:layout_height="match_parent"
      android:padding="40dp"
      tools:ignore="MissingConstraints">
      <TableRow
         android:layout_width="match_parent"
         android:layout_height="match_parent"
         android:gravity="center"
         android:layout_marginBottom="30dp">
         <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:text="LOGIN FORM"
            android:textSize="22dp"
            android:textStyle="bold"
            android:textColor="@color/purple_500"
            android:textAlignment="center"/>
      </TableRow>
      <TableRow
         android:layout_width="match_parent"
         android:layout_height="match_parent">
         <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
```

```xml
                android:layout_weight="1"
                android:drawableLeft="@android:drawable/sym_action_email"
                android:drawableTint="@color/purple_500"
                android:drawablePadding="10dp"
                android:gravity="center_vertical"
                android:textStyle="bold"
                android:padding="10dp"
                android:text="EMAIL ID"
                android:textSize="15dp"/>
        </TableRow>
        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:layout_marginBottom="20dp">
            <EditText
                android:padding="10dp"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:inputType="text"
                android:layout_weight="1"
                android:hint="Enter Email ID"/>
        </TableRow>
        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent">
            <TextView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:drawableLeft="@android:drawable/ic_lock_lock"
                android:drawableTint="@color/purple_500"
                android:drawablePadding="10dp"
                android:gravity="center_vertical"
                android:padding="10dp"
                android:textStyle="bold"
                android:text="PASSWORD"
                android:textSize="15dp"/>
        </TableRow>
        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:layout_marginBottom="20dp">
            <EditText
                android:padding="10dp"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
```

```xml
            android:inputType="textPassword"
            android:layout_weight="1"
            android:hint="Enter Password"/>
    </TableRow>
    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginBottom="10dp">
        <CheckBox
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Remember Me?"/>
    </TableRow>
    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginBottom="20dp">
        <com.google.android.material.button.MaterialButton
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            app:cornerRadius="100dp"
            android:padding="15dp"
            android:text="LOGIN"/>
    </TableRow>
    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginBottom="40dp">
        <TextView
            android:layout_weight="1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Forgote Password"/>
    </TableRow>
    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginBottom="20dp">
        <com.google.android.material.button.MaterialButton
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            app:cornerRadius="100dp"
            android:padding="15dp"
```

```
            android:backgroundTint="@color/black"
            android:textColor="@color/white"
            android:text="REGISTER NOW"/>
    </TableRow>
  </TableLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

LoginScreenActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class LoginScreenActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login_screen);
        getSupportActionBar().setTitle("Login Screen");
        getSupportActionBar().setSubtitle("Fulari A. K");
    }
}
```

Outputs :

Q 2 : Create a grid of A-Z alphabets.

activity_grid_view.xml

```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=".GridViewActivity">
    <GridView
        android:id="@+id/grid"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:background="#d4dafc"
        android:gravity="center"
        android:horizontalSpacing="2dp"
        android:stretchMode="columnWidth"
        android:verticalSpacing="2dp"
        android:numColumns="3"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

GridViewActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.GridView;
import android.widget.Toast;
public class GridViewActivity extends AppCompatActivity{
    private String[] strs = ("abcdefghijklmnopqrstuvwxyz").toUpperCase().split("");
    private GridView gv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_grid_view);
        getSupportActionBar().setTitle("Grid View");
```

```java
        getSupportActionBar().setSubtitle("Fulari A. K");
        gv = findViewById(R.id.grid);
        ArrayAdapter<String> adapter = new ArrayAdapter<>(getApplicationContext(),
R.layout.gridviewitemlayout,strs);
        gv.setAdapter(adapter);
        gv.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {
            @Override
            public void onItemSelected(AdapterView<?> adapterView, View view, int i, long l) {
                Toast.makeText(getApplicationContext(), adapter.getItem(i)+" : Selected",
Toast.LENGTH_SHORT).show();
            }
            @Override
            public void onNothingSelected(AdapterView<?> adapterView) {}
        });
    }
}
```

Outputs :

activity_spinner_date_picker.xml

```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=".SpinnerDatePickerActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:gravity="center_vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        tools:ignore="UselessLeaf">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="20dp"
            android:orientation="vertical">
            <TextView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:textAlignment="center"
                android:textSize="20dp"
                android:textStyle="bold"
                android:text="Date Picker"/>
        </LinearLayout>
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="20dp"
            android:orientation="horizontal"
            android:layout_gravity="center_vertical">
            <Spinner
                android:id="@+id/day"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:padding="8dp"
                android:layout_margin="5dp"/>
```

```xml
        <Spinner
            android:id="@+id/month"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:padding="8dp"
            android:layout_margin="5dp"/>
        <Spinner
            android:id="@+id/year"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:padding="8dp"
            android:layout_margin="5dp"/>
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="20dp"
        android:orientation="horizontal"
        android:layout_gravity="center_vertical">
        <Spinner
            android:id="@+id/hour"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:padding="8dp"
            android:layout_margin="5dp"/>
        <Spinner
            android:id="@+id/minute"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:padding="8dp"
            android:layout_margin="5dp"/>
        <Spinner
            android:id="@+id/second"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:padding="8dp"
            android:layout_margin="5dp"/>
        <Spinner
            android:id="@+id/pm"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
```

```xml
                android:layout_weight="1"
                android:padding="8dp"
                android:layout_margin="5dp"/>
        </LinearLayout>
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="20dp"
            android:orientation="vertical">
            <TextView
                android:id="@+id/tv"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:textAlignment="center"
                android:textSize="20dp"
                android:textStyle="bold"
                android:textColor="@color/purple_500"
                android:text=""/>
        </LinearLayout>
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

SpinnerDatePickerActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Adapter;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.TextView;

public class SpinnerDatePickerActivity extends AppCompatActivity implements
AdapterView.OnItemSelectedListener{
    private String[] days = getRange(1,32),years = getRange(1971,2051),months =
getRange(1,13),hours=getRange(1,25),minutes=getRange(1,61),seconds=getRange(1,61),pms={"
AM","PM"};
    private ArrayAdapter<String> adptr1,adptr2,adptr3,adptr4,adptr5,adptr6,adptr7;
    private Spinner sp1,sp2,sp3,sp4,sp5,sp6,sp7;
    private TextView tv;
```

```java
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_spinner_date_picker);
        getSupportActionBar().setTitle("Spinner Date Picker");
        getSupportActionBar().setSubtitle("Fulari A. K");
        sp1 = findViewById(R.id.day);
        sp2 = findViewById(R.id.month);
        sp3 = findViewById(R.id.year);
        sp4 = findViewById(R.id.hour);
        sp5 = findViewById(R.id.minute);
        sp6 = findViewById(R.id.second);
        sp7 = findViewById(R.id.pm);
        tv = findViewById(R.id.tv);
        adptr1 = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,days);
        adptr2 = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,months);
        adptr3 = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,years);
        adptr4 = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,hours);
        adptr5 = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,minutes);
        adptr6 = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,seconds);
        adptr7 = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,pms);
        sp1.setAdapter(adptr1);
        sp2.setAdapter(adptr2);
        sp3.setAdapter(adptr3);
        sp4.setAdapter(adptr4);
        sp5.setAdapter(adptr5);
        sp6.setAdapter(adptr6);
        sp7.setAdapter(adptr7);

        sp1.setOnItemSelectedListener(this);
        sp2.setOnItemSelectedListener(this);
        sp3.setOnItemSelectedListener(this);
        sp4.setOnItemSelectedListener(this);
        sp5.setOnItemSelectedListener(this);
        sp6.setOnItemSelectedListener(this);
        sp7.setOnItemSelectedListener(this);
    }

    @Override
```

```java
    public void onItemSelected(AdapterView<?> adapterView, View view, int i, long l) {
        String m = adptr2.getItem(sp2.getSelectedItemPosition());
        String h = adptr4.getItem(sp4.getSelectedItemPosition());
        String str =
adptr1.getItem(sp1.getSelectedItemPosition())+"/"+m+"/"+adptr3.getItem(sp3.getSelectedItemPo
sition())+"
"+h+":"+adptr5.getItem(sp5.getSelectedItemPosition())+":"+adptr6.getItem(sp6.getSelectedItem
Position())+" "+adptr7.getItem(sp7.getSelectedItemPosition());
        tv.setText(str);
        if(m.equals("2"))
            updateAdapter(sp1.getAdapter(),0);
        else if(m.equals("4") || m.equals("6") ||  m.equals("9") || m.equals("11"))
            updateAdapter(sp1.getAdapter(),1);
        else if(m.equals("1") || m.equals("3") || m.equals("5") || m.equals("7") || m.equals("8") ||
m.equals("10") || m.equals("12"))
            updateAdapter(sp1.getAdapter(),2);

        if(Integer.parseInt(h)>12){
            sp7.setSelection(1);
        }
        else{
            sp7.setSelection(0);
        }
    }

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

    public String[] getRange(int s,int e){
        String[] arr = new String[(e-s)];
        int j =0;
        for(int i=s;i<e;i++){
            arr[j] = String.valueOf(i);
            j++;
        }
        return arr;
    }

    public void updateAdapter(Adapter adptr,int i){
        if(i==0){
            if(adptr.getCount()>28){
                ArrayAdapter<String> adtr = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,getRange(1,29));
                sp1.setAdapter(adtr);
            }
        }
```

```java
        else if(i==1){
            if(adptr.getCount()>30 || adptr.getCount()<30){
                ArrayAdapter<String> adtr = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,getRange(1,31));
                sp1.setAdapter(adtr);
            }
        }
        else if(i==2){
            if(adptr.getCount()<31){
                ArrayAdapter<String> adtr = new ArrayAdapter<>(this,
androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,getRange(1,32));
                sp1.setAdapter(adtr);
            }
        }
    }
}
```

Outputs :
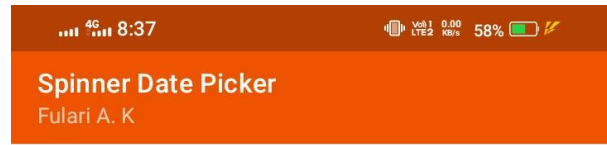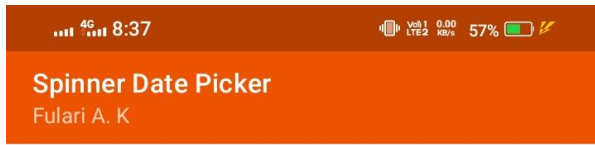
Q 4 : Write a program to create webview.

activity_web_view.xml

```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=".WebViewActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal"
            android:gravity="center_vertical"
            android:background="#E3E3E3"
            android:paddingLeft="5dp"
            android:paddingRight="5dp"
            tools:ignore="MissingConstraints">
            <ImageButton
                android:id="@+id/backward"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:src="@drawable/ic_baseline_keyboard_arrow_left_24"
                app:tint="@color/purple_500"
                android:padding="10dp"/>
            <ImageButton
                android:id="@+id/fordward"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:src="@drawable/ic_baseline_keyboard_arrow_right_24"
                app:tint="@color/purple_500"
                android:padding="10dp"/>
            <ImageButton
                android:id="@+id/home"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:src="@drawable/ic_baseline_home_24"
                app:tint="@color/purple_500"
                android:padding="10dp"/>
```

```xml
        <ImageButton
          android:id="@+id/refresh"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:src="@drawable/ic_baseline_refresh_24"
          app:tint="@color/purple_500"
          android:padding="10dp"/>
        <EditText
          android:id="@+id/url"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_weight="1"
          android:text="https://www.apaka.in"
          android:singleLine="true"
          android:ellipsize="end"
          android:padding="10dp"/>
        <ImageButton
          android:id="@+id/search"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:src="@drawable/ic_baseline_search_24"
          app:tint="@color/purple_500"
          android:padding="10dp"/>
      </LinearLayout>
      <WebView
        android:id="@+id/webview"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:scrollbars="vertical"
        android:layout_weight="1"/>
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

WebViewActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.webkit.WebView;
import android.webkit.WebViewClient;
import android.widget.EditText;
import android.widget.ImageButton;
import android.widget.Toast;
import java.net.URL;

public class WebViewActivity extends AppCompatActivity implements View.OnClickListener{
    private final String DEFAULT_URL = "https://www.w3schools.com";
    private ImageButton backward,forward,home,refresh,search;
    private EditText urlBar;
    private WebView webview;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_web_view);
        getSupportActionBar().setTitle("WebView");
        getSupportActionBar().setSubtitle("Fulari A. K");

        backward = findViewById(R.id.backward);
        forward = findViewById(R.id.fordward);
        home = findViewById(R.id.home);
        refresh = findViewById(R.id.refresh);
        search = findViewById(R.id.search);
        webview = findViewById(R.id.webview);
        urlBar = findViewById(R.id.url);
        urlBar.setText(DEFAULT_URL);

        backward.setOnClickListener(this);
        forward.setOnClickListener(this);
        home.setOnClickListener(this);
        refresh.setOnClickListener(this);
        search.setOnClickListener(this);

        webview.setWebViewClient(new WebViewClient());
        webview.getSettings().setJavaScriptEnabled(true);
        webview.getSettings().setUseWideViewPort(true);
```

```java
        webview.getSettings().setJavaScriptCanOpenWindowsAutomatically(true);
        webview.getSettings().setSupportMultipleWindows(true);
        webview.getSettings().setSupportMultipleWindows(true);

        loadUrl(DEFAULT_URL);
    }
    @Override
    public void onClick(View view) {
        switch (view.getId()){
            case R.id.home:
                loadUrl(DEFAULT_URL);
                urlBar.setText(DEFAULT_URL);
              break;
            case R.id.backward:
                webview.goBack();
                urlBar.setText(webview.getUrl());
              break;
            case R.id.fordward:
                webview.goForward();
                urlBar.setText(webview.getUrl());
              break;
            case R.id.refresh:
                webview.reload();
                urlBar.setText(webview.getUrl());
              break;
            case R.id.search:
                String str = urlBar.getText().toString();
                if(str.length()>0) {
                    loadUrl(str);
                }
                else{
                    Toast.makeText(this, "Please Enter URL", Toast.LENGTH_SHORT).show();
                }
              break;
        }
    }
    public void loadUrl(String str){
        webview.loadUrl(str);
        backward.setEnabled(webview.canGoBack());
        forward.setEnabled(webview.canGoForward());
    }
}
```

AndroidManifest.xml

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


    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.AkashFulariAssignment"
        tools:targetApi="31">

        <activity
            android:name=".WebViewActivity"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>

    </application>

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

</manifest>
```

Outputs：
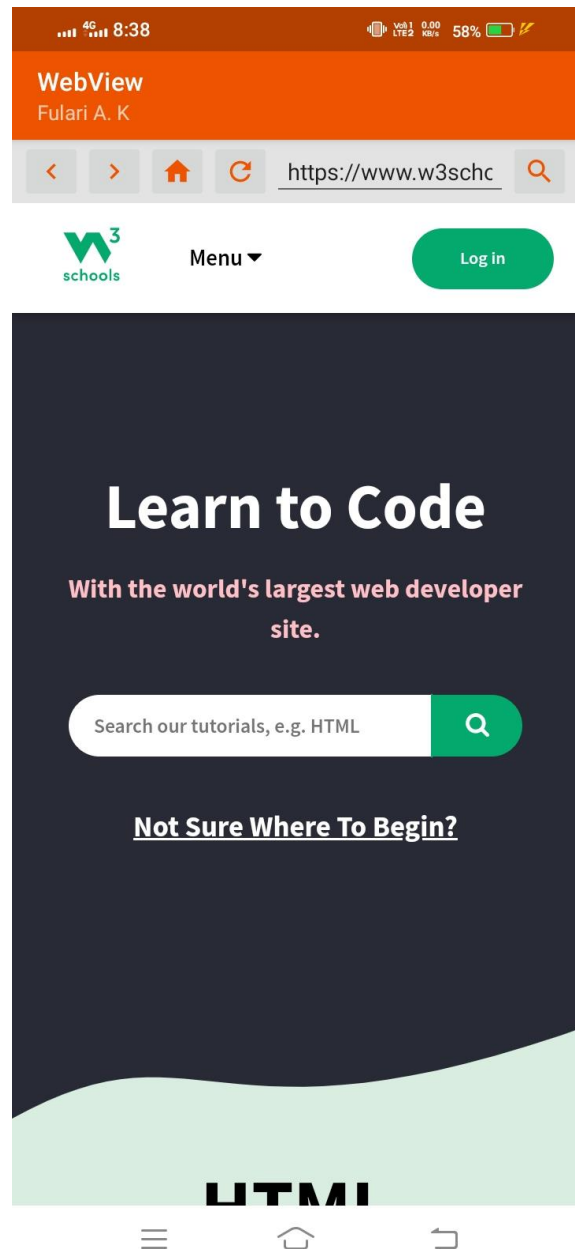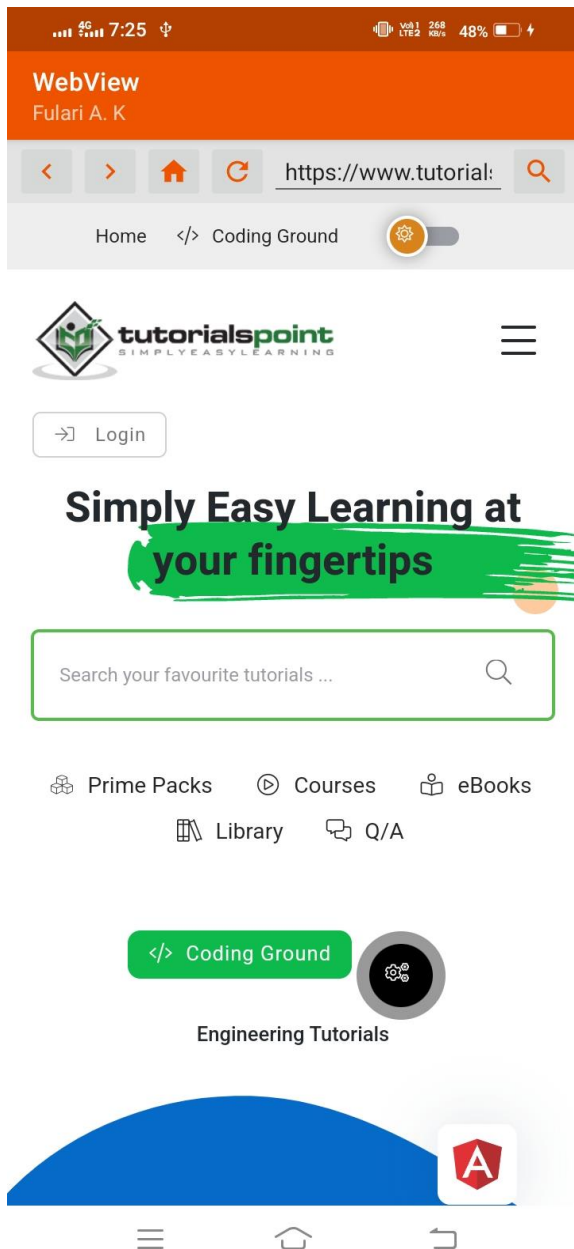
Q 5 : Write a program for Autochanging text.

activity_auto_change_text.xml

```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=".AutoChangeTextActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:gravity="center_vertical"
        android:orientation="vertical"
        tools:ignore="MissingConstraints">

        <TextView
            android:id="@+id/tv"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text=""
            android:textAlignment="center"
            android:padding="30dp"
            android:lineHeight="40dp"
            android:textSize="22dp"
            android:textAllCaps="true"
            android:textStyle="bold"/>
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

AutoChangeTextActivity.java
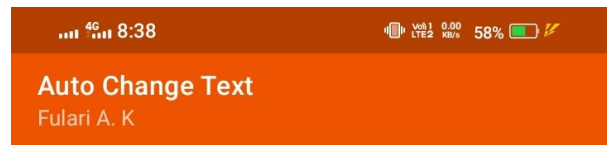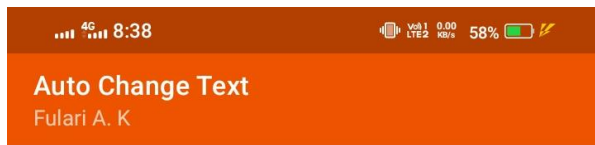
```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.os.Handler;
import android.widget.TextView;

public class AutoChangeTextActivity extends AppCompatActivity {
    private final String TEXT[] =("wel come to mca-ii\nby akash fulari ").split("");
    private TextView tv;
    int i = 0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_auto_change_text);
        getSupportActionBar().setTitle("Auto Change Text");
        getSupportActionBar().setSubtitle("Fulari A. K");
        tv = findViewById(R.id.tv);
        callMethod();
    }
    public void callMethod(){
        new Handler().postDelayed(new Runnable() {
            @Override
            public void run() {
                tv.setText(tv.getText().toString()+TEXT[i]);

                if(i==TEXT.length-1) {
                    i = -1;
                    tv.setText("");
                }
                i++;
                callMethod();
            }
        },100);
    }
}
```
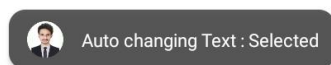
Outputs :

.ıll ⁴ᴳ.ıll 8:38   Vol1 0.00 LTE2 KB/s 58% 🔋⚡

Auto Change Text
Fulari A. K

WEL COME T

WEL COME TO MCA-II

BY AKASH FULARI

Auto changing Text : Selected

Q 6 : Write a program to create Alert dialog.

activity_alert_dialog.xml

```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=".AlertDialogActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:gravity="center"
        android:padding="30dp"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <com.google.android.material.button.MaterialButton
            android:id="@+id/btn"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            app:cornerRadius="100dp"
            android:padding="15dp"
            android:text="OPEN DIALOG" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

AlertDialogActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

import com.google.android.material.dialog.MaterialAlertDialogBuilder;

public class AlertDialogActivity extends AppCompatActivity {
    private Button btn;
    private AlertDialog.Builder adb;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_alert_dialog);
        getSupportActionBar().setTitle("Alert Dialog");
        getSupportActionBar().setSubtitle("Fulari A. K");
        btn = findViewById(R.id.btn);
        adb = new AlertDialog.Builder(this);
        adb.setTitle("Simple Dialog");
        adb.setMessage("While wait Content loading....");
        adb.setCancelable(false);
        adb.setPositiveButton("OK", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                Toast.makeText(AlertDialogActivity.this, "Ok Pressed!!!.",
Toast.LENGTH_SHORT).show();
            }
        });
        adb.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                Toast.makeText(AlertDialogActivity.this, "Cancel Pressed!!!.",
Toast.LENGTH_SHORT).show();
            }
        });
        AlertDialog ad = adb.create();
        btn.setOnClickListener(new View.OnClickListener() {
```
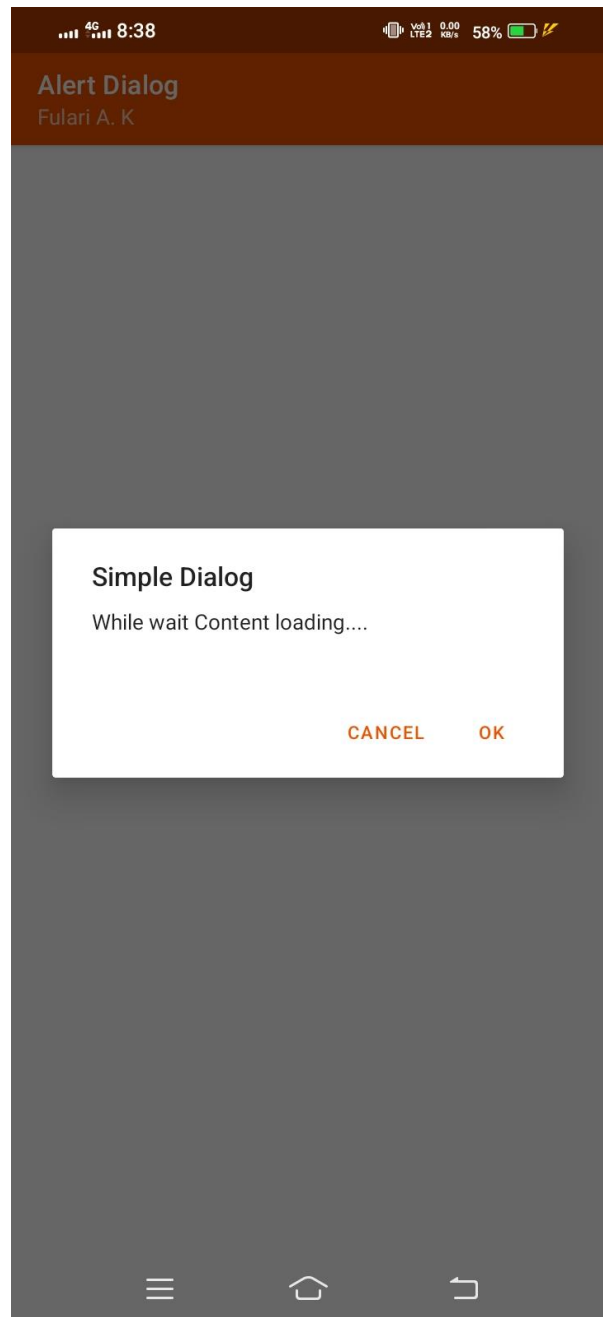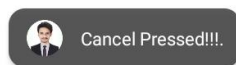
```java
            @Override
            public void onClick(View view) {
                ad.show();
            }
        });
    }
}
```

Outputs :

Q 7 : Write a program to create Context Menu.

activity_context_menu.xml

```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=".ContextMenuActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:gravity="center"
        android:padding="30dp"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">
        <TextView
            android:id="@+id/tv"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="30dp"
            android:textAlignment="center"
            android:layout_marginBottom="10dp"
            android:textSize="22dp"
            android:textStyle="bold"/>
        <com.google.android.material.button.MaterialButton
            android:id="@+id/btn"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            app:cornerRadius="100dp"
            android:padding="15dp"
            android:text="LONG PRESS" />
    </LinearLayout>

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

ContextMenuActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

public class ContextMenuActivity extends AppCompatActivity {
    private Button btn;
    private TextView tv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_context_menu);
        getSupportActionBar().setTitle("Context Menu");
        getSupportActionBar().setSubtitle("Fulari A. K");
        btn = findViewById(R.id.btn);
        tv = findViewById(R.id.tv);

        registerForContextMenu(btn);
    }
    @Override
    public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuInfo menuInfo) {
        super.onCreateContextMenu(menu, v, menuInfo);
        menu.add(0,v.getId(),0,"Create");
        menu.add(0,v.getId(),0,"Delete");
        menu.add(0,v.getId(),0,"Find");
        menu.add(0,v.getId(),0,"Replace");
        menu.add(0,v.getId(),0,"Goto");
        menu.add(0,v.getId(),0,"Copy");
        menu.add(0,v.getId(),0,"Paste");
        menu.add(0,v.getId(),0,"Select All");
        menu.add(0,v.getId(),0,"Exit");
    }
    @Override
```

```java
    public boolean onContextItemSelected(@NonNull MenuItem item) {
        Toast.makeText(this, item.getTitle()+" : Selected", Toast.LENGTH_SHORT).show();
        tv.setText(item.getTitle());
        return super.onContextItemSelected(item);
    }
}
```

Outputs :

Q 8 : Write a program to create Toggle button.

activity_toggle_button.xml

```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=".ToggleButtonActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:gravity="center"
        android:padding="30dp"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">
        <ImageView
            android:id="@+id/lamp"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@drawable/offbulb"
            android:layout_gravity="center"/>
        <TextView
            android:id="@+id/tv"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="30dp"
            android:textAlignment="center"
            android:layout_marginBottom="10dp"
            android:text="Status : OFF"
            android:textSize="22dp"
            android:textStyle="bold"/>
        <ToggleButton
            android:id="@+id/btn"
            android:layout_width="match_parent"
            android:layout_height="wrap_content" />
    </LinearLayout>

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

ToggleButtonActivity.java

```java
package com.apaka.akashfulariassignment;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
import android.widget.ToggleButton;

public class ToggleButtonActivity extends AppCompatActivity {
    private ToggleButton btn;
    private TextView tv;
    private ImageView iv;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_toggle_button);
        getSupportActionBar().setTitle("Toggle Button");
        getSupportActionBar().setSubtitle("Fulari A. K");
        btn = findViewById(R.id.btn);
        tv = findViewById(R.id.tv);
        iv = findViewById(R.id.lamp);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(ToggleButtonActivity.this, "Status : "+btn.getText(),
Toast.LENGTH_SHORT).show();
                tv.setText("Status : "+btn.getText());
                if(btn.getText().equals("ON")){
                    iv.setImageDrawable(getDrawable(R.drawable.onbulb));
                }
                else{
                    iv.setImageDrawable(getDrawable(R.drawable.offbulb));
                }
            }
        });
    }
}
```

Outputs :

Toggle Button
Fulari A. K

Status : OFF

OFF

Toogle Button : Selected

Toggle Button
Fulari A. K

Status : ON

ON

Status : ON