

MALNAD COLLEGE OF ENGINEERING, HASSAN

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APPLICATION DEVELOPMENT LABORATORY

(21CS604)

Report On

“Laboratory Programs”

Submitted by

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1. Develop an android application which accepts the SGPA of all the six semesters and displays your CGPA.

```
package com.example.first;

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 {
    EditText e1,e2,e3,e4,e5,e6,e7,e8;
    Button b1;
    TextView t1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=(EditText) findViewById(R.id.ed1);
        e2=(EditText) findViewById(R.id.ed2);
        e3=(EditText) findViewById(R.id.ed3);
        e4=(EditText) findViewById(R.id.ed4);
        e5=(EditText) findViewById(R.id.ed5);
        e6=(EditText) findViewById(R.id.ed6);
        e7=(EditText) findViewById(R.id.ed7);
        e8=(EditText) findViewById(R.id.ed7);
        b1=(Button) findViewById(R.id.btn);
        t1=(TextView) findViewById(R.id.result) ;

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String n1,n2,n3,n4,n5,n6,n7,n8;
                n1=e1.getText().toString();
                n2=e2.getText().toString();
                n3=e3.getText().toString();
                n4=e4.getText().toString();
                n5=e5.getText().toString();
                n6=e6.getText().toString();
                n7=e7.getText().toString();
                n8=e8.getText().toString();

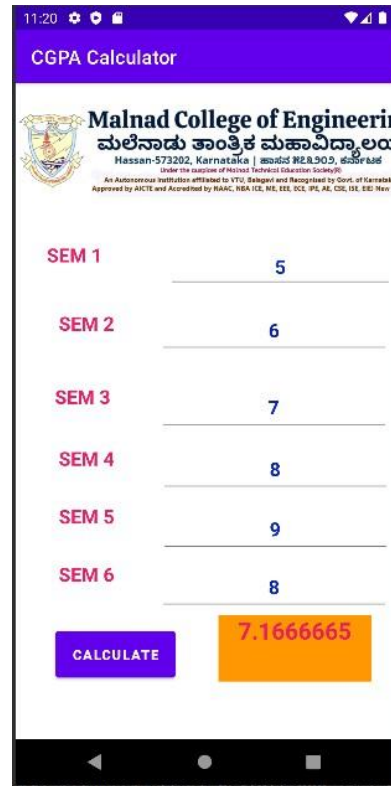
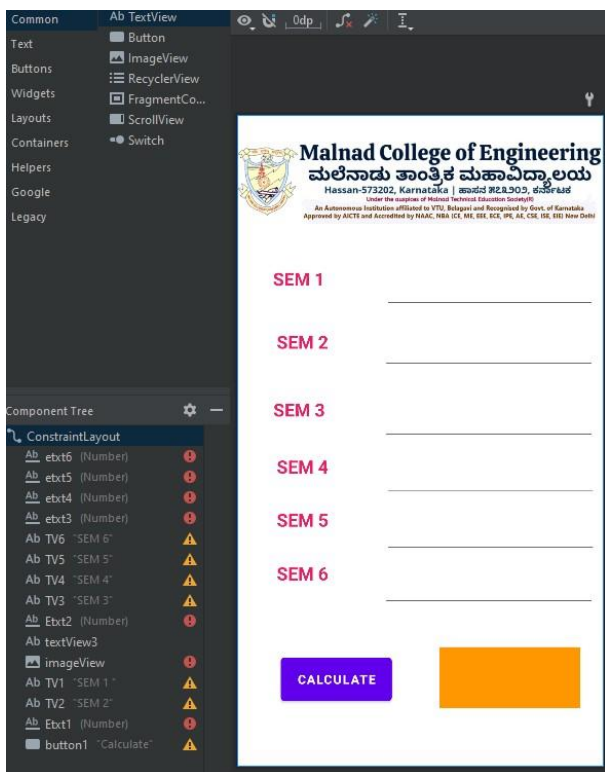
                float cgpa=(Float.parseFloat(n1)+Float.parseFloat(n2)+
Float.parseFloat(n3)+Float.parseFloat(n4)+Float.parseFloat(n5)+Float.parseFl
```

```

oat(n6)+Float.parseFloat(n7)+Float.parseFloat(n8))/8;
t1.setText(String.valueOf(cgpa));
    }
});
}
}
}

```

Output:



2. Develop an android application to login into a system which is redirected to the Home screen. The login should be successful on

email: admin@example.com

password: rtWi2p_10

If the email/password is invalid display a Toast with an error message

```
package com.example.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 {
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

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

```
        EditText e1=(EditText) findViewById(R.id.email);
```

```
        EditText e2=(EditText) findViewById(R.id.password);
```

```
        Button b1=(Button) findViewById(R.id.login);
```

```
        b1.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View view) {
```

```
                String username = "admin@example.com";
```

```
                String password = "admin123";
```

```
                String str=e1.getText().toString();
```

```
                String sub =e2.getText().toString();
```

```
                String successMsg = "Login Sucessfull";
```

```
                String failureMsg = "Invalid Credentials";
```

```
                if(str.equals(username) && sub.equals(password)){
```

```
                    Toast.makeText(getApplicationContext(),successMsg,  
Toast.LENGTH_LONG).show();
```

```
                }else {
```

```
                    Toast.makeText(getApplicationContext(),failureMsg,  
Toast.LENGTH_LONG).show();
```

```
                }
```

```
            }
```

```
        });
```

```
    }
```

Output:

3:50

Login Page

email binsushri2003@gmail.co

password 1234567890

submit

q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123 , .

3. Assume you are accepting employee details: Name, Designation, Salary, Phone number. Develop app that displays an alert message if phone number entered is more than 10 digits.

```
package com.example.third;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
    EditText e1;
    Button b1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);
        e1 = (EditText) findViewById(R.id.textPhone);
        b1 = (Button) findViewById(R.id.btn);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                AlertDialog.Builder alert = new
AlertDialog.Builder(MainActivity.this);
                alert.setTitle("Phone number format");
                alert.setCancelable(true);
                if (e1.length() == 10) {
                    alert.setMessage("Phone number is valid");
                } else {
                    alert.setMessage("Phone number is invalid");
                }
                alert.show();
            }
        });
    }
}
```

Output:

A mobile application interface with a dark grey background. At the top, a status bar shows the time 4:04 and various icons. Below the status bar, there are four input fields with labels: 'Name' (value: bindu), 'Designation' (value: software engineer), 'salary' (value: 60000), and 'Phone' (value: 9036482321). Below these fields is a white rectangular box containing the text 'Phone number format' and 'phone number is valid'. At the bottom, there is a numeric keypad with digits 1-9, *, #, 0, and a decimal point, along with a blue checkmark button.

Name

Designation

salary

Phone

Phone number format
phone number is valid

A mobile application interface with a dark grey background. At the top, a status bar shows the time 4:04 and various icons. Below the status bar, there are four input fields with labels: 'Name' (value: bindu), 'Designation' (value: software engineer), 'salary' (value: 60000), and 'Phone' (value: 903648231). Below these fields is a white rectangular box containing the text 'Phone number format' and 'phone number is invalid'. At the bottom, there is a numeric keypad with digits 1-9, *, #, 0, and a decimal point, along with a blue checkmark button.

Name

Designation

salary

Phone

Phone number format
phone number is invalid

4. Design an app that displays the names of all planets in our universe. Clicking on “Solar System” in first activity should display all the planet’s names in second activity and it should return the total number of planets to first activity.

MainActiviy1:

```
package com.example.second;

import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    Button b1;

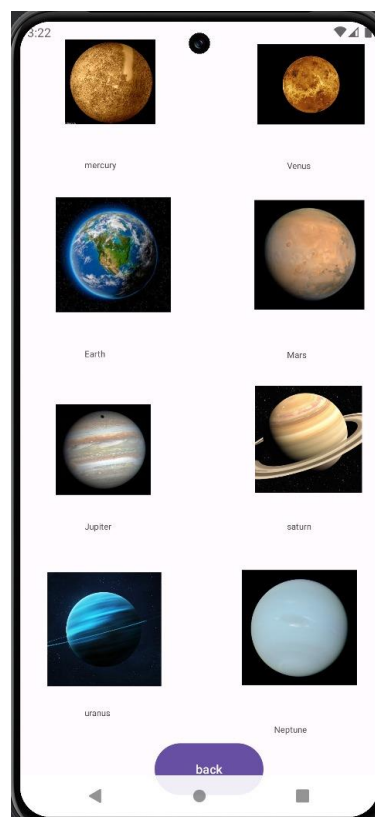
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        b1=(Button) findViewById(R.id.solar_page);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent conn = new
Intent(getApplicationContext(),MainActivity2.class);
                startActivity(conn);
                startActivityForResult(conn,1);
            }
        });
    }
    @Override
    protected void onActivityResult(int requestCode, int resultCode, @Nullable
Intent data) {
        super.onActivityResult(requestCode, resultCode, data);
        TextView t1=(TextView)findViewById(R.id.textDisplay);
        if (requestCode==1)
            if (resultCode==RESULT_OK){
                String res = data.getStringExtra("Planets");
                t1.setText(String.valueOf(res)); } } }
```


MainActivity2:

```
package com.example.second;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity2 extends AppCompatActivity {
    Button b2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        java.lang.String total="8";
        b2=(Button) findViewById(R.id.back);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent in=getIntent();
                in.putExtra("Planets",total);
                setResult(RESULT_OK,in);
                finish();
            }
        });
    }
}
```

Output:



5. Develop a QUIZ app that displays a question with four answers as options. Clicking an option should display whether the selected option is right or wrong.

```
package com.example.fifth;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.RadioButton;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    RadioButton rb1,rb2,rb3,rb4,rb21, rb22, rb23;
    ImageView img,img1;
    Button b1;
    @Override
    protected void onCreate(Bundle
        savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        rb1=(RadioButton) findViewById(R.id.opt1);
        rb2=(RadioButton) findViewById(R.id.opt2);
        rb3=(RadioButton) findViewById(R.id.opt3);
        rb4=(RadioButton) findViewById(R.id.opt4);
        rb21=(RadioButton) findViewById(R.id.opt21);
        rb22=(RadioButton) findViewById(R.id.opt22);
        rb23=(RadioButton) findViewById(R.id.opt23);
        img=(ImageView)findViewById(R.id.wrong);
        img1=(ImageView)findViewById(R.id.right);

        b1 = (Button) findViewById(R.id.button);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int cnt = 0;
                if(rb1.isChecked()){
                    img.setVisibility(View.VISIBLE);
                    img1.setVisibility(View.INVISIBLE);
                }

                if(rb2.isChecked()){
                    img.setVisibility(View.VISIBLE);
                    img1.setVisibility(View.INVISIBLE);
                }
            }
        })
    }
}
```

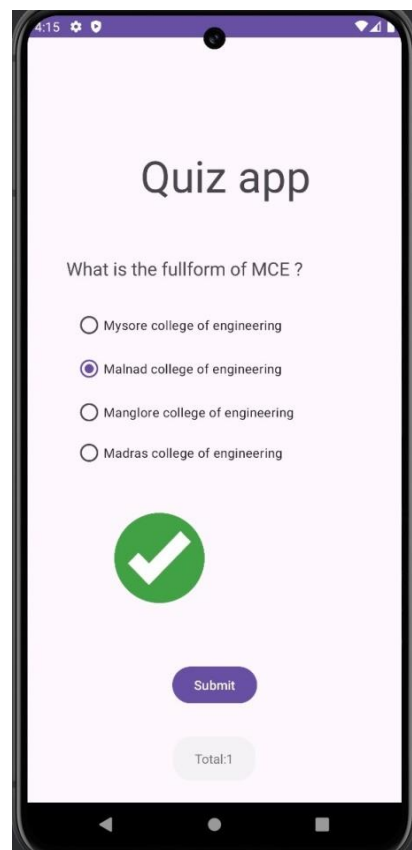
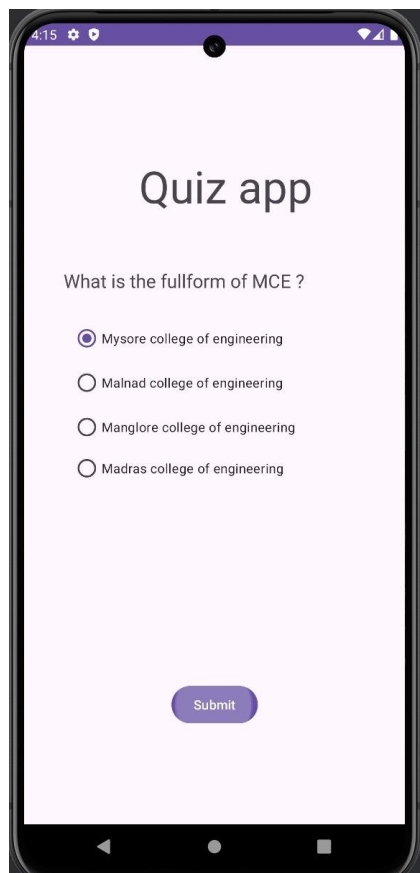
```

        rb4.isChecked()){
            img.setVisibility(View.VISIBLE);
            img1.setVisibility(View.INVISIBLE);
        }
        if(rb21.isChecked()){
            img.setVisibility(View.INVISIBLE);
            img1.setVisibility(View.VISIBLE);
            cnt = cnt + 1;
        }
        if(rb22.isChecked()){
            img.setVisibility(View.VISIBLE);
            img1.setVisibility(View.INVISIBLE);
        }
        if(rb23.isChecked()){
            img.setVisibility(View.VISIBLE);

            img1.setVisibility(View.INVISIBLE);
        }
        Toast.makeText(MainActivity.this, "Total"+ String.valueOf(cnt),
        Toast.LENGTH_SHORT).show();
    }
    });}}

```

Output:



6. Assume you need to accept order online for fast food items. Design an app such that it accepts the order for multiple items and displays the total amount to be paid on placing the order.

```
package com.example.sixth;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.TextView;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import org.w3c.dom.Text;

public class MainActivity extends AppCompatActivity {
    CheckBox c1, c2, c3;
    Button b1, b2;
    TextView tv1;

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

        c1 = (CheckBox)findViewById(R.id.cb1);
        c2 = (CheckBox)findViewById(R.id.cb2);
        c3 = (CheckBox)findViewById(R.id.cb3);

        b1 = (Button)findViewById(R.id.bill);
        b2 = (Button)findViewById(R.id.pay);

        tv1 = (TextView)findViewById(R.id.amount);

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int total = 0;
                if(c1.isChecked()){
```

```

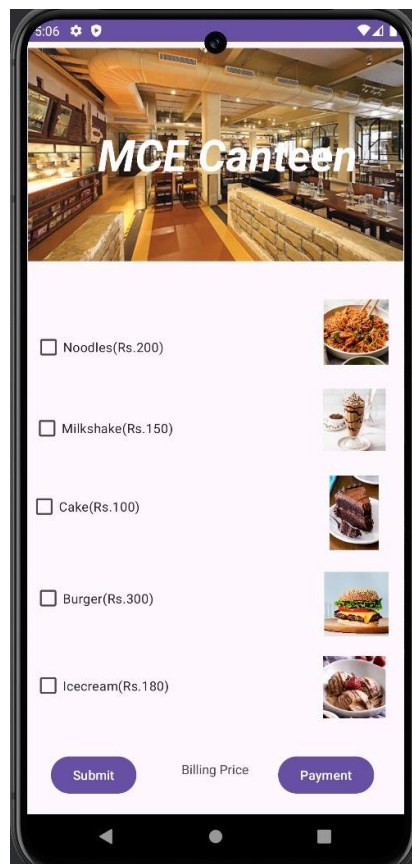
        total = total + 30;
    }
    if(c2.isChecked()){
        total = total + 50;
    }
    if(c3.isChecked()){
        total = total + 45;
    }

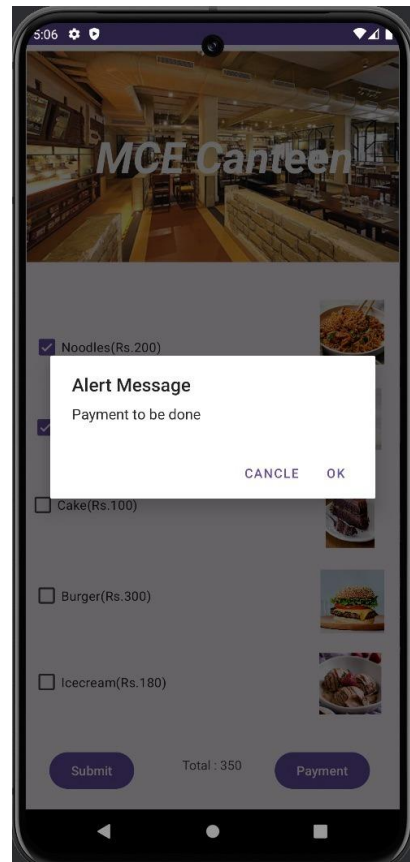
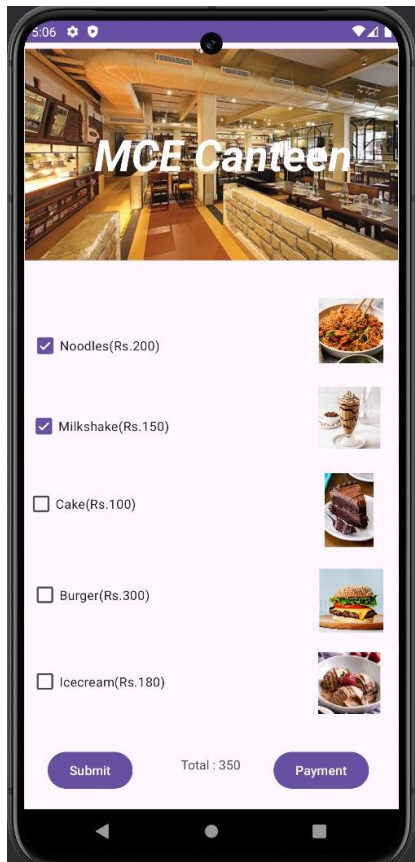
    tv1.setText("Total :"+String.valueOf(total));
}
});

b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Toast.makeText(MainActivity.this, "Redirecting to Payment",
        Toast.LENGTH_SHORT).show();
    }
});}}

```

Output:





7. Design an app to display menu options on clicking a button “FILE”. The menu options are: New, Open, Save, Save as, And Print. Clicking on any option should display the relevant information.

```
package com.example.seven;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.widget.Toast;
import androidx.appcompat.widget.Toolbar;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toolbar toolbar = findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);
    }

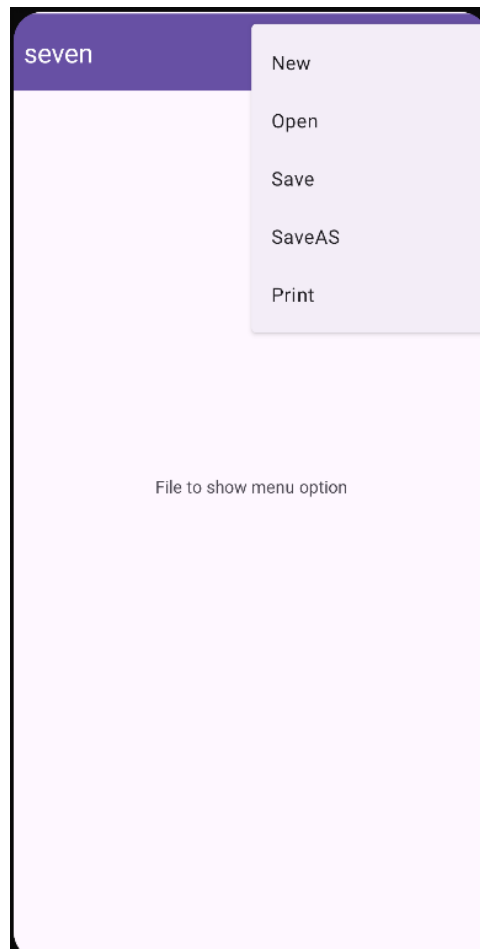
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater inflater = new MenuInflater(this);
        inflater.inflate(R.menu.menu, menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        super.onOptionsItemSelected(item);
        switch (item.getItemId())
        {
            case 0: Toast.makeText(getApplicationContext(),"Opens a New
File",Toast.LENGTH_LONG).show();
                return true;
            case 1: Toast.makeText(getApplicationContext(),"Opens the existing
file",Toast.LENGTH_LONG).show();
                return true;
            case 2: Toast.makeText(getApplicationContext(),"saves as a existing
file",Toast.LENGTH_LONG).show();
                return true;
            case 3: Toast.makeText(getApplicationContext(),"Saves with the
name",Toast.LENGTH_LONG).show();
```

```
        return true;
        case 4: Toast.makeText(getApplicationContext(),"Prints the existing
file",Toast.LENGTH_LONG).show();
        return true;

    }
    return false;
}
}
```

Output:



8. Design an app to accept your name, roll number and branch programmatically.

```
package com.example.eight;

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

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        EditText e1 = new EditText(this);
        e1.setText("Name: ");
        e1.setTextSize(20);

        EditText e2 = new EditText(this);
        e2.setText("USN: ");
        e2.setTextSize(20);

        EditText e3 = new EditText(this);
        e3.setText("Branch : ");
        e3.setTextSize(20);

        Button b1 = new Button(this);
        b1.setText("Submit");
        b1.setTextSize(20);

        TextView t1 = new TextView(this);
        t1.setText("NAME");
        t1.setTextSize(25);

        TextView t2 = new TextView(this);
        t2.setText("USN");
        t2.setTextSize(25);

        TextView t3 = new TextView(this);
        t3.setText("BRANCH");
        t3.setTextSize(25);
```

```

LinearLayout linear = new LinearLayout(this);
linear.setOrientation(LinearLayout.VERTICAL);

linear.addView(e1);
linear.addView(e2);
linear.addView(e3);
linear.addView(b1);
linear.addView(t1);
linear.addView(t2);
linear.addView(t3);
LinearLayout.LayoutParams params=new
LinearLayout.LayoutParams(LinearLayout.LayoutParams.MATCH_PARENT,LinearL
ayout.LayoutParams.WRAP_CONTENT);
this.addView(linear,params);

b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String str=e1.getText().toString();
        t1.setText(str);

        String str1=e2.getText().toString();
        t2.setText(str1);
        String str2=e3.getText().toString();
        t3.setText(str2);
    }
});

```

Output:



9. Develop an android application to list all the engineering branches of MCE and displays a brief information of any department which the user clicks on in a separate page.

```
package com.example.nine;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.Spinner;

public class MainActivity extends AppCompatActivity {
    String[] str={"Select Branch","CSE","ME"};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Spinner sp=(Spinner) findViewById(R.id.spinner);
        ArrayAdapter<String> adp=new ArrayAdapter<>(getApplicationContext(),
        android.R.layout.simple_dropdown_item_1line,str);
        sp.setAdapter(adp);
        sp.setOnItemClickListener(new AdapterView.OnItemClickListener()
        {
            @Override
            public void onItemClick(AdapterView<?> adapterView, View v, int i,
long l) {
                int index = adapterView.getSelectedItemPosition();
                if(index==1) {
                    Intent in1=new
Intent(getApplicationContext(),MainActivity2.class);
                    startActivity(in1);
                }
                if (index==2) {
                    Intent ME=new
Intent(getApplicationContext(),MainActivity3.class);
                    startActivity(ME);
                }
            }
        });
    }
    @Override
    public void onNothingSelected(AdapterView<?> adapterView) {
    }
}
```

```
}  
}
```

MainActivity2:

```
package com.example.nine;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
public class MainActivity2 extends AppCompatActivity {  
    Button b1;  
    TextView t1;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main2);  
        Button b1=(Button) findViewById(R.id.back);  
        TextView t1=(TextView) findViewById(R.id.tvview);  
        t1.setText("The department of Computer Science and Engineering was  
established in the year 1983. It offers the 4 years (8 Semesters) B.E. course with  
an intake of 180 students.");  
        b1.setOnClickListener(new View.OnClickListener() {  
            @Override  
            public void onClick(View view) {  
                finish();  
            }  
        });  
    }  
}
```

MainActivity3

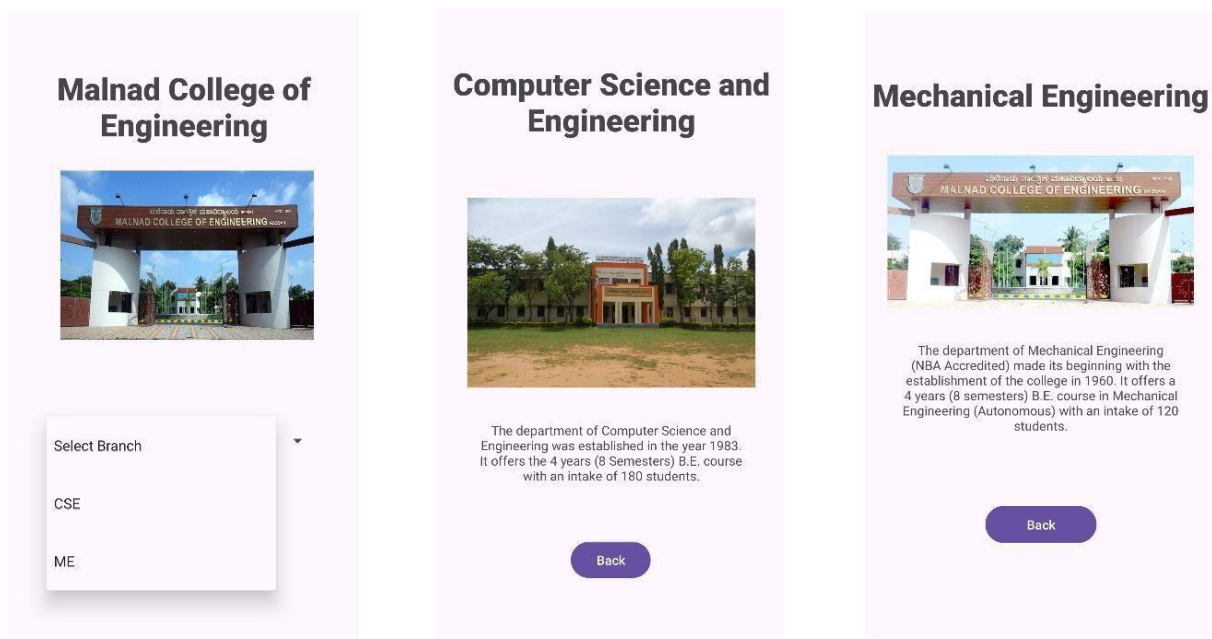
```
package com.example.nine;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
public class MainActivity3 extends AppCompatActivity {  
    Button b1;  
    TextView t1;  
    @Override
```

```

protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main3);
    Button b1=(Button) findViewById(R.id.back3);
    TextView t1=(TextView) findViewById(R.id.tview3);
    t1.setText("The department of Mechanical Engineering (NBA Accredited)
made its beginning with the establishment of the college in 1960. It offers a 4
years (8 semesters) B.E. course in Mechanical Engineering (Autonomous) with
an intake of 120 students.");
    b1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            finish();
        }
    });
}
}

```

Output:



10. Consider a scenario where you need to send an email to multiple users. Design an app to implement the same.

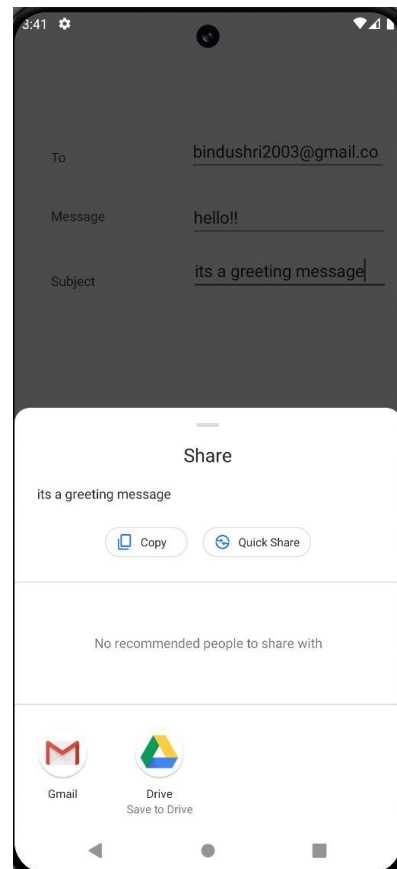
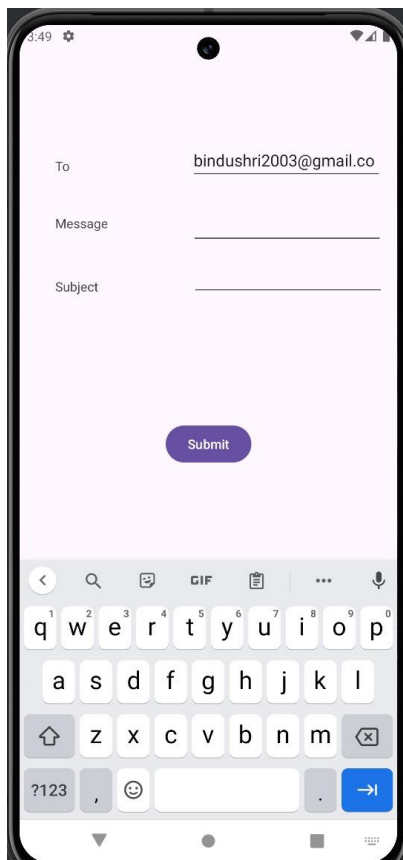
```
package com.example.tenth;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    EditText eToText;
    EditText eSubText;
    EditText eMsgText;
    Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);
        eToText=findViewById(R.id.email);
        eSubText=findViewById(R.id.eSubject);
        eMsgText = findViewById(R.id.eMsg);
        btn = findViewById(R.id.btnMsg);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String list = eToText.getText().toString();
                String[] rec=list.split(",");
                String Sub = eSubText.getText().toString();
                String msg = eMsgText.getText().toString();
                Intent it = new Intent(Intent.ACTION_SEND);
                it.putExtra(Intent.EXTRA_EMAIL,rec);
                it.putExtra(Intent.EXTRA_SUBJECT,Sub);
                it.putExtra(Intent.EXTRA_TEXT,msg);
                it.setType("message/rfc822");
                startActivity(Intent.createChooser(it,"Choose Mail App"));
            }
        });
    }
}
```

Output:



11. Develop an android application to display a gallery view (Grid View) of at least 10 images.

MainActivity.java

```
package com.example.gallery;

import android.os.Bundle;
import android.widget.GridView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private int[] imageIds = {
        R.drawable.image1, R.drawable.image2, R.drawable.image3,
        R.drawable.image1,
        R.drawable.image2, R.drawable.image3, R.drawable.image3,
        R.drawable.image2,
        R.drawable.image2, R.drawable.image1, R.drawable.image2,
        R.drawable.image3, R.drawable.image3, R.drawable.image2,
        R.drawable.image2
    };

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

        GridView gridView = findViewById(R.id.gridView);
        gridView.setAdapter(new ImageAdapter(this, imageIds));
    }
}
```

ImageAdapter.java

```
package com.example.gallery;
```



```

import android.content.Context;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.GridView;
import android.widget.ImageView;

public class ImageAdapter extends BaseAdapter {
    private Context mContext;
    private int[] mImageIds;

    public ImageAdapter(Context c, int[] imageIds) {
        mContext = c;
        mImageIds = imageIds;
    }

    public int getCount() {
        return mImageIds.length;
    }

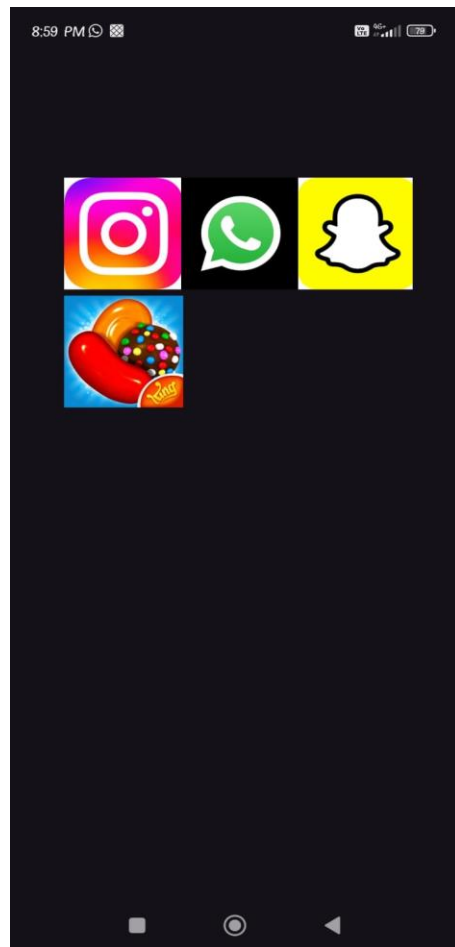
    public Object getItem(int position) {
        return mImageIds[position];
    }

    public long getItemId(int position) {
        return position;
    }

    public View getView(int position, View convertView, ViewGroup parent) {
        ImageView imageView;
        if (convertView == null) {
            imageView = new ImageView(mContext);
            imageView.setLayoutParams(new GridView.LayoutParams(300, 300));
            imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);
            imageView.setPadding(8, 8, 8, 8);
        } else {
            imageView = (ImageView) convertView;
        }
        imageView.setImageResource(mImageIds[position]);
        return imageView;
    }
}

```

Output:



12. Develop an android application to render the text data into Text View from the remote server. Show progress bar when the data is loading or Toast message if data fails to load.

```
package com.example.twelfth;

import android.annotation.SuppressLint;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.Button;
import android.widget.ProgressBar;
import android.widget.TextView;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    private int ps = 0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        Button b1 = (Button)findViewById(R.id.btn);
        TextView tv1 = (TextView)findViewById(R.id.tv1);
        TextView tv2 = (TextView)findViewById(R.id.tv2);
        ProgressBar p1 = (ProgressBar)findViewById(R.id.progressBar2);
        Handler handler = new Handler();

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                p1.setVisibility(v.VISIBLE);
                tv1.setVisibility(v.VISIBLE);
                tv2.setVisibility(v.VISIBLE);
                new Thread(new Runnable() {
                    @SuppressWarnings("SetTextI18n")
                    @Override
                    public void run() {
                        while(ps<100){
                            ps+=1;
                            handler.post(new Runnable() {
                                @Override
                                public void run() {
```

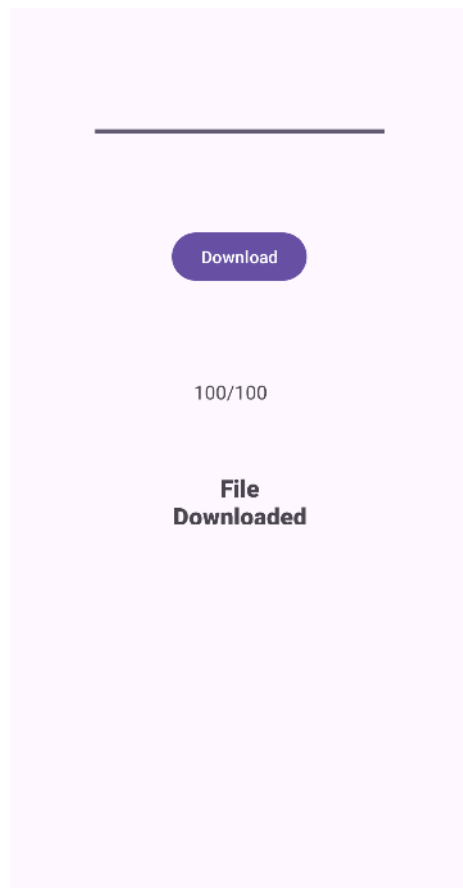
```

        p1.setProgress(ps);
        tv1.setText(ps+"/"+p1.getMax());
    }
});
try {
    Thread.sleep(10);
} catch (InterruptedException e) {
    e.printStackTrace();
}

}
tv2.setText("File Downloaded");
}
}).start();
}
});
}
}

```

Output:



Weather Forecasting App

Main_activity1

```
package com.example.weatherapptutorial;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;

import android.Manifest;
import android.content.Context;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.RelativeLayout;
import android.widget.TextView;
import android.widget.Toast;

import com.loopj.android.http.AsyncHttpClient;
import com.loopj.android.http.JsonHttpResponseHandler;
import com.loopj.android.http.RequestParams;

import org.json.JSONObject;

import cz.msebera.android.httpclient.Header;

public class MainActivity extends AppCompatActivity {

    final String APP_ID = "dab3af44de7d24ae7ff86549334e45bd";
    final String WEATHER_URL =
"https://api.openweathermap.org/data/2.5/weather";

    final long MIN_TIME = 5000;
    final float MIN_DISTANCE = 1000;
    final int REQUEST_CODE = 101;

    String Location_Provider = LocationManager.GPS_PROVIDER;

    TextView NameofCity, weatherState, Temperature;
    ImageView mweatherIcon;
```

```
RelativeLayout mCityFinder;  
LocationManager mLocationManager;  
LocationListener mLocationListner;
```

```
@Override
```

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

```
    weatherState = findViewById(R.id.weatherCondition);  
    Temperature = findViewById(R.id.temperature);  
    mweatherIcon = findViewById(R.id.weatherIcon);  
    mCityFinder = findViewById(R.id.cityFinder);  
    NameofCity = findViewById(R.id.cityName);
```

```
    mCityFinder.setOnClickListener(new View.OnClickListener() {  
        @Override  
        public void onClick(View v) {  
            Intent intent = new Intent(MainActivity.this, cityFinder.class);  
            startActivity(intent);  
        }  
    });  
}
```

```
/* @Override
```

```
protected void onResume() {  
    super.onResume();  
    getWeatherForCurrentLocation();  
}*/
```

```
@Override
```

```
protected void onResume() {  
    super.onResume();  
    Intent mIntent=getIntent();  
    String city= mIntent.getStringExtra("City");  
    if(city!=null)  
    {  
        getWeatherForNewCity(city);  
    }  
    else  
    {  
        getWeatherForCurrentLocation();  
    }  
}
```

```
private void getWeatherForNewCity(String city)  
{  
    RequestParams params=new RequestParams();
```

```

        params.put("q",city);
        params.put("appid",APP_ID);
        letsdoSomeNetworking(params);
    }
    private void getWeatherForCurrentLocation() {

        mLocationManager = (LocationManager)
getSystemService(Context.LOCATION_SERVICE);
        mLocationListner = new LocationListener() {
            @Override
            public void onLocationChanged(Location location) {

                String Latitude = String.valueOf(location.getLatitude());
                String Longitude = String.valueOf(location.getLongitude());

                RequestParams params =new RequestParams();
                params.put("lat" ,Latitude);
                params.put("lon",Longitude);
                params.put("appid",APP_ID);
                letsdoSomeNetworking(params);
            }
            @Override
            public void onStatusChanged(String provider, int status, Bundle extras) {
            }
            @Override
            public void onProviderEnabled(String provider) {
            }
            @Override
            public void onProviderDisabled(String provider) {
                //not able to get location
            }
        };
        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) !=
PackageManager.PERMISSION_GRANTED &&
ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION) !=
PackageManager.PERMISSION_GRANTED) {
            // TODO: Consider calling
            //    ActivityCompat#requestPermissions
            // here to request the missing permissions, and then overriding
            //    public void onRequestPermissionsResult(int requestCode, String[]
permissions,
            //                                     int[] grantResults)
            // to handle the case where the user grants the permission. See the
documentation
            // for ActivityCompat#requestPermissions for more details.
            ActivityCompat.requestPermissions(this,new

```

```

String[]{Manifest.permission.ACCESS_FINE_LOCATION},REQUEST_CODE);
    return;
}
mLocationManager.requestLocationUpdates(Location_Provider, MIN_TIME,
MIN_DISTANCE, mLocationListner);

}
@Override
public void onRequestPermissionsResult(int requestCode, @NonNull String[]
permissions, @NonNull int[] grantResults) {
    super.onRequestPermissionsResult(requestCode, permissions, grantResults);

    if(requestCode==REQUEST_CODE)
    {
        if(grantResults.length>0 &&
grantResults[0]==PackageManager.PERMISSION_GRANTED)
        {
            Toast.makeText(MainActivity.this,"Locationget
Succesffully",Toast.LENGTH_SHORT).show();
            getWeatherForCurrentLocation();
        }
        else
        {
            //user denied the permission
        }
    }
}
private void letsdoSomeNetworking(RequestParams params)
{
    AsyncHttpClient client = new AsyncHttpClient();
    client.get(WEATHER_URL,params,new JsonHttpResponseHandler()
    {
        @Override
        public void onSuccess(int statusCode, Header[] headers, JSONObject
response) {

            Toast.makeText(MainActivity.this,"Data Get
Success",Toast.LENGTH_SHORT).show();

            weatherData weatherD=weatherData.fromJson(response);
            updateUI(weatherD);

            // super.onSuccess(statusCode, headers, response);
        }

        @Override
        public void onFailure(int statusCode, Header[] headers, Throwable
throwable, JSONObject errorResponse) {

```



```

        //super.onFailure(statusCode, headers, throwable, errorResponse);
    }
});

}

private void updateUI(weatherData weather){

    Temperature.setText(weather.getmTemperature());
    NameofCity.setText(weather.getMcity());
    weatherState.setText(weather.getmWeatherType());
    int
resourceID=getResources().getIdentifier(weather.getMicon(),"drawable",getPackag
eName());
    mweatherIcon.setImageResource(resourceID);

}

@Override
protected void onPause() {
    super.onPause();
    if(mLocationManager!=null)
    {
        mLocationManager.removeUpdates(mLocationListner);
    }
}
}

```

Main_activity2

```

package com.example.weatherapptutorial;

import org.json.JSONException;
import org.json.JSONObject;

public class weatherData {

    private String mTemperature,micon,mcity,mWeatherType;
    private int mCondition;

    public static weatherData fromJson(JSONObject jsonObject)
    {
        try
        {
            weatherData weatherD=new weatherData();
            weatherD.mcity=jsonObject.getString("name");

            weatherD.mCondition=jsonObject.getJSONArray("weather").getJSONObject(0).ge
tInt("id");

```

```

weatherD.mWeatherType=jsonObject.getJSONArray("weather").getJSONObject(0)
.getString("main");
    weatherD.micon=updateWeatherIcon(weatherD.mCondition);
    double tempResult=jsonObject.getJSONObject("main").getDouble("temp")-
273.15;
    int roundedValue=(int)Math rint(tempResult);
    weatherD.mTemperature=Integer.toString(roundedValue);
    return weatherD;
}

    catch (JSONException e) {
        e.printStackTrace();
        return null;
    }
}
private static String updateWeatherIcon(int condition)
{
    if(condition>=0 && condition<=300)
    {
        return "thunderstrom1";
    }
    else if (condition >= 300 && condition <= 321)
    {
        return "drizzle1";
    }
    else if(condition>=322 && condition<=500)
    {
        return "lightrain";
    }
    else if(condition>=500 && condition<=600)
    {
        return "shower";
    }
    else if(condition>=600 && condition<=700)
    {
        return "snow2";
    }
    else if(condition>=701 && condition<=771)
    {
        return "fog";
    }

    else if(condition>=772 && condition<=800)
    {
        return "overcast";
    }
    else if(condition==800)
    {
        return "sunny";
    }
}

```

```

    }
    else if(condition>=801 && condition<=804)
    {
        return "cloudy";
    }
    else if(condition>=900 && condition<=902)
    {
        return "thunderstrom1";
    }
    if(condition==903)
    {
        return "snow1";
    }
    if(condition==904)
    {
        return "sunny";
    }
    if(condition>=905 && condition<=1000)
    {
        return "thunderstrom2";
    }

    return "dunno";

}

public String getmTemperature() {
    return mTemperature+"°C";
}

public String getMicon() {
    return micon;
}

public String getMcity() {
    return mcity;
}

public String getmWeatherType() {
    return mWeatherType;
}
}

```

Output:

