

MOBILE APPLICATIONS DEVELOPMENT LAB CSLR-34

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Lab3

Submitted By: -

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CSE

QUESTION-1: DESIGN AN ANDROID APPLICATION USING ANDROID STUDIO WITH THE FOLLOWING SPECIFICATIONS.

i) In an activity, include the Title, 2 Textboxes and a button. Where the user types his/her name and mail id in the textboxes and upon clicking the button, initiate the first fragment and display the information using toasts.

ii) The first fragment will display the welcome message with the roll number of the student and it should have radio buttons that display a list of departments in NITT and a button. The user has to select one department from the radio buttons and click on the button.

iii) Upon clicking the button in the first fragment, initiate the second fragment and display the selected department information (Take 4-5 lines from the NITT website). Have a button in the second fragment, upon clicking it should go back to the first fragment.

EXPERIMENT NAME: To create an application to obtain information of given department.

AIM: : To create an application to obtain information of given department.

DESCRIPTION OF APP:

- As the app starts, a user is asked to enter his name and mail id.
- When a user enters his information and clicks on submit button, a list of available departments appears.
- He can select that particular department, about which he wants to get the information.
- When the user clicks on “get information button”, the information about that department appears.
- When the user clicks on “list of departments” button, it redirects to previous fragment and list of available courses appears.

DEVICE SPECIFICATION:

Device Name: - Pixel 3a XL (6 1080x2160 xxhdpi)

Android Version: - R (Android 10.0+ x86)

API Level: - 30

Screen Size: - 6 inch

RAM: - 2048 MB

TECHNICAL CONCEPTS LEARNT:

- **Fragment:** A fragment represents a reusable portion of an app's UI. I have learned about the techniques of using dynamic fragments, passing parameters to fragments, onCreateView class, which is used for writing the code in fragment class.
- **Toast:** To show a short time popup message.
- **Radio Button:** To select a single option among available options

- **Button:** To perform certain actions when clicked on them
- **EditText:** to enter information.
- **TextView:** to show the required information

SOURCE CODE:

MainActivity.java

```
package com.example.departmentRegistration;

import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;

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 implements View.OnClickListener {

    Button submit;
    EditText name,mail;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        submit=findViewById(R.id.submit);
        name=findViewById(R.id.student_name);
        mail=findViewById(R.id.student_mail);
        submit.setOnClickListener(this::onClick);
    }

    @Override
    public void onClick(View view) {
        if (view==findViewById(R.id.submit)){
            if (name.getText().toString().matches("")){
                Toast.makeText(getApplicationContext(),"Please enter your name",Toast.LENGTH_SHORT).show();
            } else if (mail.getText().toString().matches("")){
                Toast.makeText(getApplicationContext(),"Please enter your email",Toast.LENGTH_SHORT).show();
            }else {
                Toast.makeText(getApplicationContext(),"Initiating Fragment 1",Toast.LENGTH_SHORT).show();
                FragmentManager fragmentManager=getSupportFragmentManager();
                FragmentTransaction fragmentTransaction=fragmentManager.beginTransaction();
```

```

        FirstFragment ff=new FirstFragment().newInstance(name.getText().toString(),"");
        fragmentTransaction.replace(R.id.frag_host, ff);
        fragmentTransaction.commit();
    }
}
}
}

```

activity_main.xml

```

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center_horizontal"
        android:text="@string/app_name"
        android:textColor="#000000"
        android:textSize="33sp" />

    <TableLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent">

            <TextView
                android:id="@+id/textView2"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Name"
                android:textColor="@color/black"
                android:textSize="25sp" />

            <EditText
                android:id="@+id/student_name"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:ems="10"

```

```

        android:hint="enter yor name"
        android:inputType="textPersonName" />
</TableRow>

<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Email"
        android:textColor="@color/black"
        android:textSize="25sp" />

    <EditText
        android:id="@+id/student_mail"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="your email"
        android:inputType="textEmailAddress" />

</TableRow>

<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center_horizontal">

    <Button
        android:id="@+id/submit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit" />
</TableRow>

</TableLayout>
<FrameLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:id="@+id/frag_host"/>
</LinearLayout>

```

FirstFragment.java

```
package com.example.departmentRegistration;

import android.os.Bundle;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import android.widget.Toast;

public class FirstFragment extends Fragment implements View.OnClickListener{

    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    private String mParam1;
    private String mParam2;

    public FirstFragment() {
        // Required empty public constructor
    }

    public static FirstFragment newInstance(String param1, String param2) {
        FirstFragment fragment = new FirstFragment();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }

    TextView message;
    RadioGroup opts;
    RadioButton cse,ece,eee,ice,mech;
    Button sub;
    String ch;
```

```

@Override
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    if (getArguments() != null) {
        mParam1 = getArguments().getString(ARG_PARAM1);
        mParam2 = getArguments().getString(ARG_PARAM2);
    }
}

```

```

@Override
public View onCreateView(LayoutInflater inflater, ViewGroup container,
    Bundle savedInstanceState) {
    // Inflate the layout for this fragment
    return inflater.inflate(R.layout.fragment_first, container, false);
}

```

```

@Override
public void onViewCreated(@NonNull View view, @Nullable Bundle savedInstanceState) {
    super.onViewCreated(view, savedInstanceState);
    message=view.findViewById(R.id.hey);
    message.setText("Hello "+mParam1);
    opts=view.findViewById(R.id.option);
    sub=view.findViewById(R.id.dept_submit);
    sub.setOnClickListener(this);
    cse=view.findViewById(R.id.cse);
    ece=view.findViewById(R.id.ece);
    eee=view.findViewById(R.id.eee);
    ice=view.findViewById(R.id.ice);
    mech=view.findViewById(R.id.mech);
    cse.setOnClickListener(this);
    ece.setOnClickListener(this);
    eee.setOnClickListener(this);
    ice.setOnClickListener(this);
    mech.setOnClickListener(this);
}

```

```

@Override
public void onClick(View view) {
    switch (view.getId()){
        case R.id.dept_submit:
            if (opts.getCheckedRadioButtonId()==-1){
                Toast.makeText(getContext(),"Select your
department",Toast.LENGTH_SHORT).show();
            }else {
                Toast.makeText(getContext(),"Initiating Fragment 2",Toast.LENGTH_SHORT).show();
                FragmentManager fragmentManager=getActivity().getSupportFragmentManager();
                FragmentTransaction fragmentTransaction=fragmentManager.beginTransaction();
                SecFragment ff=new SecFragment().newInstance(mParam1,ch);
            }
        }
    }
}

```

```

        fragmentTransaction.replace(R.id.frag_host, ff);
        fragmentTransaction.commit();
    }
    break;
case R.id.cse:
    ch=cse.getText().toString();
    break;
case R.id.ece:
    ch=ece.getText().toString();
    break;
case R.id.eee:
    ch=eee.getText().toString();
    break;
case R.id.ice:
    ch=ice.getText().toString();
    break;
case R.id.mech:
    ch=mech.getText().toString();
    break;
}
}
}

```

Fragment_first.xml

```

<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".FirstFragment">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">

        <TextView
            android:id="@+id/hey"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:gravity="center_horizontal"
            android:text="Hello!"
            android:textColor="@color/black"
            android:textSize="25sp" />

        <RadioGroup
            android:id="@+id/option"
            android:layout_width="match_parent"
            android:layout_height="wrap_content">

```



```
<RadioButton
    android:id="@+id/cse"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="CSE" />
```

```
<RadioButton
    android:id="@+id/ece"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="ECE" />
```

```
<RadioButton
    android:id="@+id/eee"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="EEE" />
```

```
<RadioButton
    android:id="@+id/ice"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="ICE" />
```

```
<RadioButton
    android:id="@+id/mech"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="MECH" />
```

```
</RadioGroup>
```

```
<Button
    android:id="@+id/dept_submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    android:text="submit" />
```

```
</LinearLayout>
```

```
</FrameLayout>
```

SecFragment.java

```
package com.example.departmentRegistration;

import android.os.Bundle;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

public class SecFragment extends Fragment implements View.OnClickListener{

    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    private String mParam1;
    private String mParam2;

    public SecFragment() {
        // Required empty public constructor
    }

    public static SecFragment newInstance(String param1, String param2) {
        SecFragment fragment = new SecFragment();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }

    TextView fin;
    Button back;

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        if (getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }
    }
}
```

```
}
```

```
@Override
```

```
public View onCreateView(LayoutInflater inflater, ViewGroup container,  
    Bundle savedInstanceState) {  
    // Inflate the layout for this fragment  
    return inflater.inflate(R.layout.fragment_sec, container, false);  
}
```

```
@Override
```

```
public void onViewCreated(@NonNull View view, @Nullable Bundle savedInstanceState) {  
    super.onViewCreated(view, savedInstanceState);  
    fin=view.findViewById(R.id.final_info);  
    fin.setText(mParam1+", you have selected "+mParam2+" as your department.");  
    switch (mParam2){  
        case "CSE":  
            fin.append("\n");  
            fin.append("The Department of Computer Science and Engineering with its cohesive  
team of faculty members, offers a sound program at the UG as well as the PG levels. The  
curriculum is a blend of the conventional and theradical. It is updated regularly to keep up with  
the growing demands and the changing trends of the software industry and research  
laboratories.");  
            fin.append("\n");  
            break;  
        case "ECE":  
            fin.append("\n");  
            fin.append("The Electronics and Communication Engineering (ECE) Department was  
established in the year 1968. The department offers Undergraduate (UG), Post Graduate (PG),  
M.S.(By Research) and Ph.D degree programs that provide students with the knowledge and  
tools they need to succeed in the Electronics and Communication Engineering.");  
            fin.append("\n");  
            break;  
        case "EEE":  
            fin.append("\n");  
            fin.append("The Department of Electrical and Electronics Engineering, NIT,  
Tiruchirappalli was started in the year 1964. It offers one Under-Graduate programme (B.Tech.),  
two Post-Graduate programmes (M.Tech. in Power Systems and Power Electronics) and also  
research programmes (M.S. and Ph.D.) in the various fields of Electrical and Electronics  
Engineering.");  
            fin.append("\n");  
            break;  
        case "ICE":  
            fin.append("\n");  
            fin.append("Department of Instrumentation and Control Engineering was established  
in the year 1993 and the first batch of students graduated from the department in the year  
1997. It offers one Under-Graduate programme (B.Tech.), one Post-Graduate programmes  
M.Tech.");  
            fin.append("\n");  
            break;  
    }
```

```

        case "MECH":
            fin.append("\n");
            fin.append("One among the first three departments to be established in 1964 in the
institute, the Mechanical Engineering Department of NITT has had the reputation of being
among the finest in the country and is dedicated towards the advancement of technology and
science.");
            fin.append("\n");
            break;
    }
    back=view.findViewById(R.id.back);
    back.setOnClickListener(this::onClick);
}

```

```

@Override
public void onClick(View view) {
    if (view.getId()==R.id.back){
        Toast.makeText(getContext(),"Initiating Fragment 1",Toast.LENGTH_SHORT).show();
        FragmentManager fragmentManager=getActivity().getSupportFragmentManager();
        FragmentTransaction fragmentTransaction=fragmentManager.beginTransaction();
        FirstFragment ff=new FirstFragment().newInstance(mParam1,"");
        fragmentTransaction.replace(R.id.frag_host, ff);
        fragmentTransaction.commit();
    }
}
}

```

fragment_sec.xml

```

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

<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:tools="http://schemas.android.com/tools"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".SecFragment">

    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="match_parent"

        android:orientation="vertical">

```

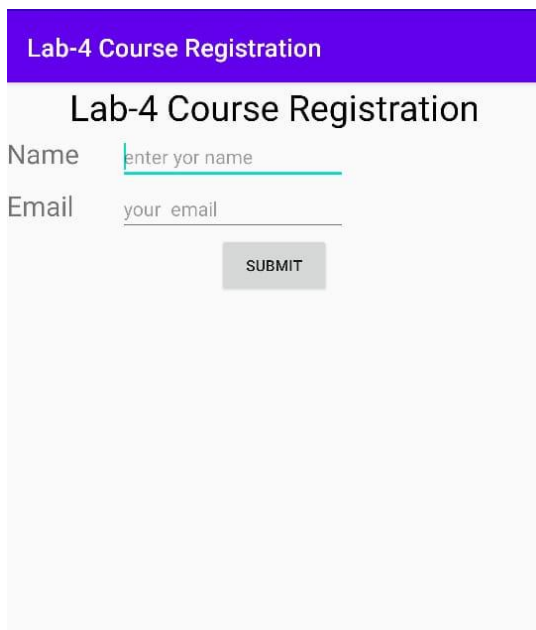
```
<TextView
    android:id="@+id/final_info"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textColor="@color/black"
    android:textSize="20sp" />

<Button
    android:id="@+id/back"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    android:text="back" />

</LinearLayout>
```

</FrameLayout>

Screenshots:



Lab-4 Course Registration

Lab-4 Course Registration

Name

Email

Lab-4 Course Registration

Lab-4 Course Registration

Name

Email

SUBMIT

Hello Supria Basak

- ☒ CSE
☐ ECE
☐ EEE
☐ ICE
☐ MECH

SUBMIT

Lab-4 Course Registration

Lab-4 Course Registration

Name

Email

SUBMIT

Supria Basak, you have selected CSE as your department.

The Department of Computer Science and Engineering with its cohesive team of faculty members, offers a sound program at the UG as well as the PG levels. The curriculum is a blend of the conventional and theradical. It is updated regularly to keep up with the growing demands and the changing trends of the software industry and research laboratories.

BACK

Outcome:

Learnt about Fragment, Toast , Radio Button.