

MOBILE APPLICATIONS DEVELOPMENT LAB CSLR-34

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Experiment- 6

Submitted By: -

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CSE

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

Design an Android application using Android Studio with the following specifications.

- i) In an activity, include a title, 3 radio buttons (Mail, Notes, Video Capture) and a submit button. Selection of each radio button redirects to one activity.
- ii) In activity 1, have textviews and text boxes for the sender address, subject of the mail and body of the mail. Have a 'Send' button, upon clicking it should open the Gmail app with the contents using implicit intents.
- iii) In activity 2, have textviews and text boxes for the heading of the notes and message. Have a 'Save notes' button, upon clicking it should open the Notes app with the contents using implicit intents.
- iii) In activity 3, have a button which opens the camera app in video mode.

EXPERIMENT NAME: To create an application using Implicit & Explicit Intents.

AIM: To create an application using Implicit & Explicit Intents.

DESCRIPTION OF APP:

- The user needs to select an option from 3 different choices.
- On selecting an option and clicking submit button, they will be moved to corresponding activities using explicit intents.
- If chosen Send Gmail option, we get redirected to Gmail options. There after entering valid receiver's email and corresponding subject and content, if we click on submit, we will redirect to Gmail app with fields filled accordingly.
- If we choose Take Note option, we will be redirected to Note taker activity. In which after entering valid title and text, upon clicking save we get redirect to Google keep notes app with corresponding fields filled.
- If we choose Video capture we will get redirected to Capture Video activity, upon clicking open camera button we will be redirected to camera with Video mode.

DEVICE SPECIFICATION:

Device Name: - Samsung S10

Android Version: - Android 11

API Level: - 30

Screen Size: - 6 inch

TECHNICAL CONCEPTS LEARNT:

- **Intents :** To connect activities with activities or components.
- **Explicit Intent :** To link two activities
- **Implicit Intent :** To link our activity to activities of other apps or components
- **Toast:** To show a short time pop-up message

- **Intent.putExtra** : To pass parameters using intents
- **setOnClickListener** : To define an action when a view is clicked
- **TextView** : View related to showing text
- **Button** : View to perform actions when clicked on them
- **RadioGroup** : To group department choices
- **RadioButton** : To show department choices

SOURCE CODE:

MainActivity.java

```
package com.example.lab_6;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    private TextView welcome;
    private RadioButton sub1,sub2,sub3;
    private Button submit,back;
    private RadioGroup rg;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        welcome = findViewById(R.id.result); rg = findViewById(R.id.rg);
        sub1 = findViewById(R.id.sub1); sub2 = findViewById(R.id.sub2); sub3 =
        findViewById(R.id.sub3);

        submit = findViewById(R.id.submit); submit.setOnClickListener(new
        View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (rg.getCheckedRadioButtonId() == -1) {
                    Toast.makeText(getApplicationContext(), "Choose an option",
                        Toast.LENGTH_LONG).show();
                    return;
                }

                if (sub1.isChecked()) {
                    Toast.makeText(getApplicationContext(), "Welcome,Launching
                    Mail activity", Toast.LENGTH_LONG).show();
                    Intent i=new Intent(getApplicationContext(),mail.class);
                    startActivity(i);
                } else if (sub2.isChecked()) {
                    Toast.makeText(getApplicationContext(), "Welcome,Launching
```

```

Note activity", Toast.LENGTH_LONG).show();
                Intent i=new Intent(getApplicationContext(),Note.class);
startActivity(i);
            } else if (sub3.isChecked()) {
                Object camera;
                Toast.makeText(getApplicationContext(), "Welcome,Launching
Camera activity", Toast.LENGTH_LONG).show();
                Intent i=new

Intent(getApplicationContext(),camera_open.class);
                startActivity(i);

            }

        }
    });
}
}
}

```

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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    android:orientation="vertical"
    android:background="@color/design_default_color_secondary">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:layout_margin="20sp">

        <TextView
            android:id="@+id/result"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:text="Explicit Intents"
            android:textColor="#2C3CA5"
            android:textSize="35sp"
            android:textStyle="bold"
            tools:text="Explicit Intents" />

        <RadioGroup
            android:id="@+id/rg"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            app:layout_constraintTop_toBottomOf="@id/result"
            android:layout_marginTop="50sp"
            app:layout_constraintLeft_toLeftOf="parent"
            android:layout_gravity="center">

            <RadioButton
                android:id="@+id/sub1"

```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20sp"
        android:layout_marginTop="50sp"
        android:buttonTint="#ffff00"
        android:text="Send Gmail"
        android:textColor="@color/black"
        android:textSize="30sp"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toBottomOf="@id/result" />
```

<RadioButton

```
        android:id="@+id/sub2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20sp"
        android:buttonTint="#ffff00"
        android:text="Take Note"
        android:textColor="@color/black"
        android:textSize="30sp"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toBottomOf="@id/sub1" />
```

<RadioButton

```
        android:id="@+id/sub3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20sp"
        android:buttonTint="#ffff00"
        android:text="Video Capture"
        android:textColor="@color/black"
        android:textSize="30sp"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toBottomOf="@id/sub2" />
```

</RadioGroup>

<Button

```
        android:id="@+id/submit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="60sp"
        android:textSize="20sp"
        android:layout_gravity="center"
        android:backgroundTint="#ffffe8"
        android:textColor="#202020"
        android:text="submit"/>
```

</LinearLayout>

</LinearLayout>

mail.java

```
package com.example.lab_6;

import androidx.appcompat.app.AppCompatActivity;

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

public class mail extends AppCompatActivity {
    EditText email,subject,content;
    String email_ans,subject_ans,content_ans; Button submit;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_mail);
        email = findViewById(R.id.email_answer);
        subject = findViewById(R.id.subject_answer);
        content = findViewById(R.id.content_answer);
        submit = findViewById(R.id.submit1);

        submit.setOnClickListener(new View.OnClickListener() { @Override
        public void onClick(View v) {
            email_ans = email.getText().toString();
            subject_ans = subject.getText().toString();
            content_ans = content.getText().toString();

            if (email_ans.matches("")) {
                Toast.makeText(mail.this, "Email Address cannot be empty",
                Toast.LENGTH_SHORT).show();
                return;
            }
            if (!isEmailValid(email_ans)) {
                Toast.makeText(mail.this, "Email Address is not valid",
                Toast.LENGTH_SHORT).show();
                return;
            }
            send_email();
        }
        });
    }
    private void send_email(){

        String[] recipients = email_ans.split(",");
        Intent intent = new Intent(Intent.ACTION_SEND);
        intent.putExtra(Intent.EXTRA_EMAIL, recipients);
        intent.putExtra(Intent.EXTRA_SUBJECT, subject_ans);
        intent.putExtra(Intent.EXTRA_TEXT, content_ans);
        intent.setType("message/rfc822");
        startActivity(Intent.createChooser(intent, "Choose an email client"));
    }
}
```

```

    public boolean isValidEmail(CharSequence email) {
        return android.util.Patterns.EMAIL_ADDRESS.matcher(email).matches();
    }
}

```

activity_mail.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity"
    android:background="#ffffe8">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:layout_margin="20sp">

        <TextView
            android:id="@+id/heading"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:text="Gmail Details"
            android:textColor="#2C3E9A"
            android:textSize="26sp"
            android:textStyle="bold"
            tools:text="Your text comes here" />

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:orientation="horizontal"
            android:layout_gravity="center"
            android:layout_marginTop="30sp">

            <TextView
                android:id="@+id/roll"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_marginTop="20sp"
                android:textSize="24sp"
                android:text="Email: "
                android:textColor="#000000"/>

            <EditText
                android:id="@+id/email_answer"
                android:layout_width="300sp"
                android:layout_height="wrap_content"
                android:hint="Receiver's email Id"
                android:layout_marginTop="18sp"
                android:textSize="20sp"

```

```
        android:textStyle="normal"
        android:inputType="textEmailAddress"
    />
```

```
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_gravity="center">
```

```
<TextView
    android:id="@+id/subject"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20sp"
    android:textSize="24sp"
    android:text="Subject: "
    android:textColor="#000000"/>
```

```
<EditText
    android:id="@+id/subject_answer"
    android:layout_width="300sp"
    android:layout_height="wrap_content"
    android:hint="Email Subject"
    android:layout_marginTop="20sp"
    android:textSize="20sp"
    android:textStyle="normal"
    android:inputType="text"
/>
```

```
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_gravity="center">
```

```
<TextView
    android:id="@+id/content"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20sp"

    android:textSize="24sp"
    android:text="Content: "
    android:textColor="#000000"/>
```

```
<EditText
    android:id="@+id/content_answer"
```



```

        android:layout_width="300sp"
        android:layout_height="wrap_content"
        android:hint="Email Content"
        android:layout_marginTop="20sp"
        android:textSize="20sp"
        android:textStyle="normal"
        android:inputType="text"
    />

</LinearLayout>

<Button
    android:id="@+id/submit1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="30sp"
    android:textSize="20sp"
    android:layout_gravity="center"
    android:backgroundTint="#ff8000"
    android:textColor="#202020"
    android:text="submit"/>

</LinearLayout>
</LinearLayout>

```

Note.java

```

package com.example.lab_6;

import androidx.appcompat.app.AppCompatActivity;

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

public class Note extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_note);
        Button submit=findViewById(R.id.submit2);
        EditText note=findViewById(R.id.note_taker);
        EditText title=findViewById(R.id.title_taker);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String input_note=note.getText().toString();
                String title_ans=title.getText().toString();
                if(title_ans.matches("")){
                    Toast.makeText(Note.this, "Note Title is empty",
                        Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}

```

```

        return;
    }
    if(input_note.matches("")){
        Toast.makeText(Note.this, "Note is empty",
            Toast.LENGTH_SHORT).show();
        return;
    }
    Intent d=new Intent(Intent.ACTION_SEND);
    d.setType("text/plain");
    d.putExtra(Intent.EXTRA_SUBJECT,title_ans);
    d.putExtra(Intent.EXTRA_TEXT,input_note);
    startActivity(d);
}
});
}
}

```

activity_note.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#657DAC"
    android:orientation="vertical"
    tools:context=".Note">

    <TextView
        android:id="@+id/heading"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20sp"
        android:text="Note taker"
        android:textColor="#1D2461"
        android:textSize="26sp"
        android:textStyle="bold"
        tools:text="Your text comes here" />

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="30sp"
        android:orientation="horizontal">

        <TextView
            android:id="@+id/roll"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="20sp"
            android:text="Title: "
            android:textColor="#000000"
            android:textSize="24sp" />

        <EditText

```

```

        android:id="@+id/title_taker"
        android:layout_width="300sp"
        android:layout_height="wrap_content"
        android:layout_marginTop="18sp"
        android:hint="Enter title of note"
        android:inputType="textEmailAddress"
        android:textSize="20sp"
        android:textStyle="normal" />
    </LinearLayout>

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:orientation="horizontal">

        <TextView
            android:id="@+id/subject"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="20sp"
            android:text="Note: "
            android:textColor="#000000"
            android:textSize="24sp" />

        <EditText
            android:id="@+id/note_taker"
            android:layout_width="300sp"
            android:layout_height="wrap_content"
            android:layout_marginTop="20sp"
            android:hint="Enter Note Here"
            android:inputType="text"
            android:textSize="20sp"
            android:textStyle="normal" />
    </LinearLayout>

    <Button
        android:id="@+id/submit2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="30sp"
        android:backgroundTint="#ff8000"
        android:text="save"
        android:textColor="#202020"
        android:textSize="20sp" />
</LinearLayout>

```

Camera_open.java

```

package com.example.lab_6;

import androidx.appcompat.app.AppCompatActivity;

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

```

```

public class camera_open extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_camera_open);
        Button open_cam=findViewById(R.id.open_cam);

        open_cam.setOnClickListener(new View.OnClickListener() { @Override
        public void onClick(View v) { Intent camera_intent = new
            Intent(MediaStore.INTENT_ACTION_VIDEO_CAMERA);
            startActivity(camera_intent);
        }
        });

    }
}

```

activity_camera_open.xml

```

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

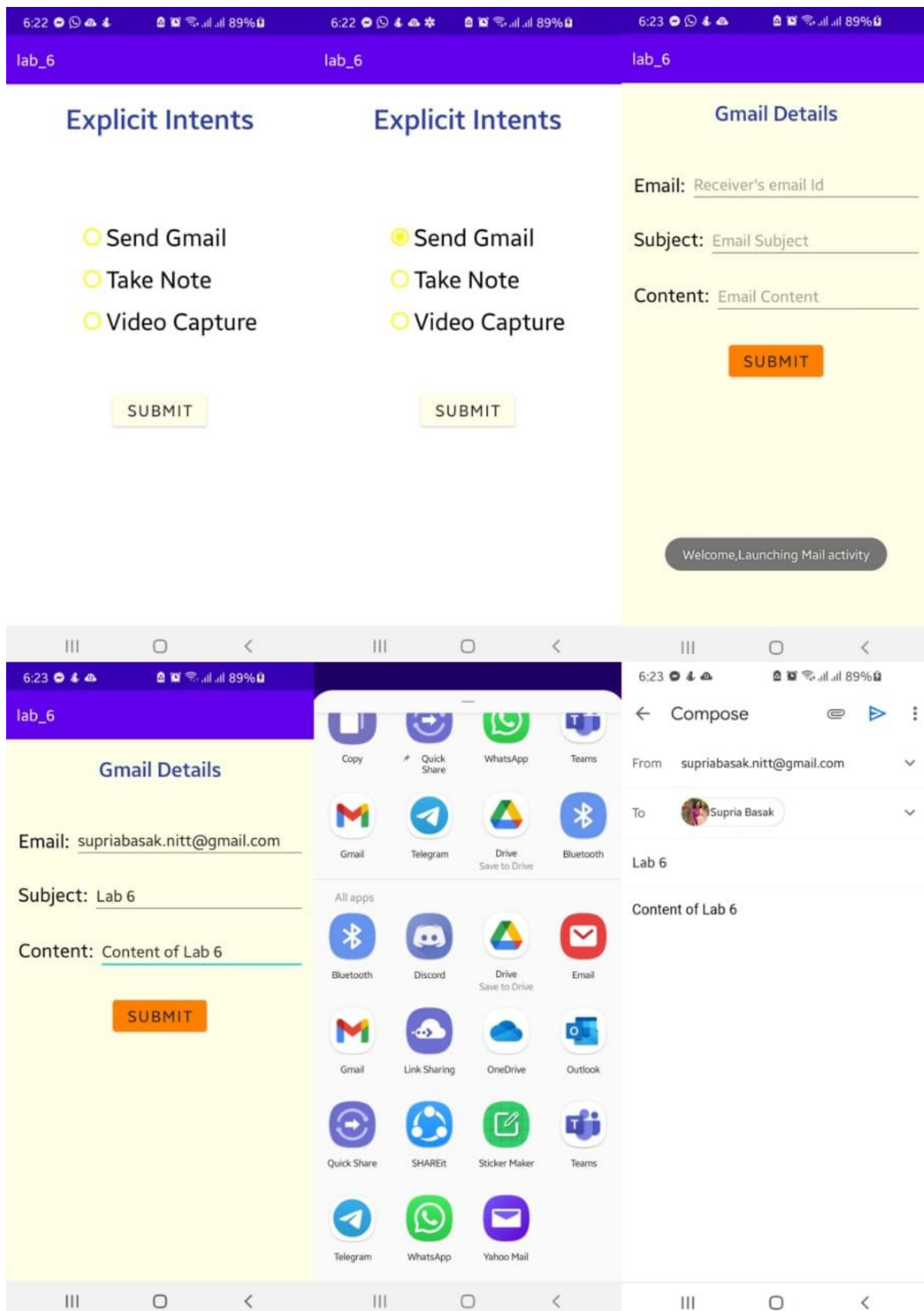
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="30sp"
        android:text="Capture Video"
        android:textColor="#3F51B5"
        android:textSize="35sp"
        android:textStyle="bold"
        tools:text="Your text here" />

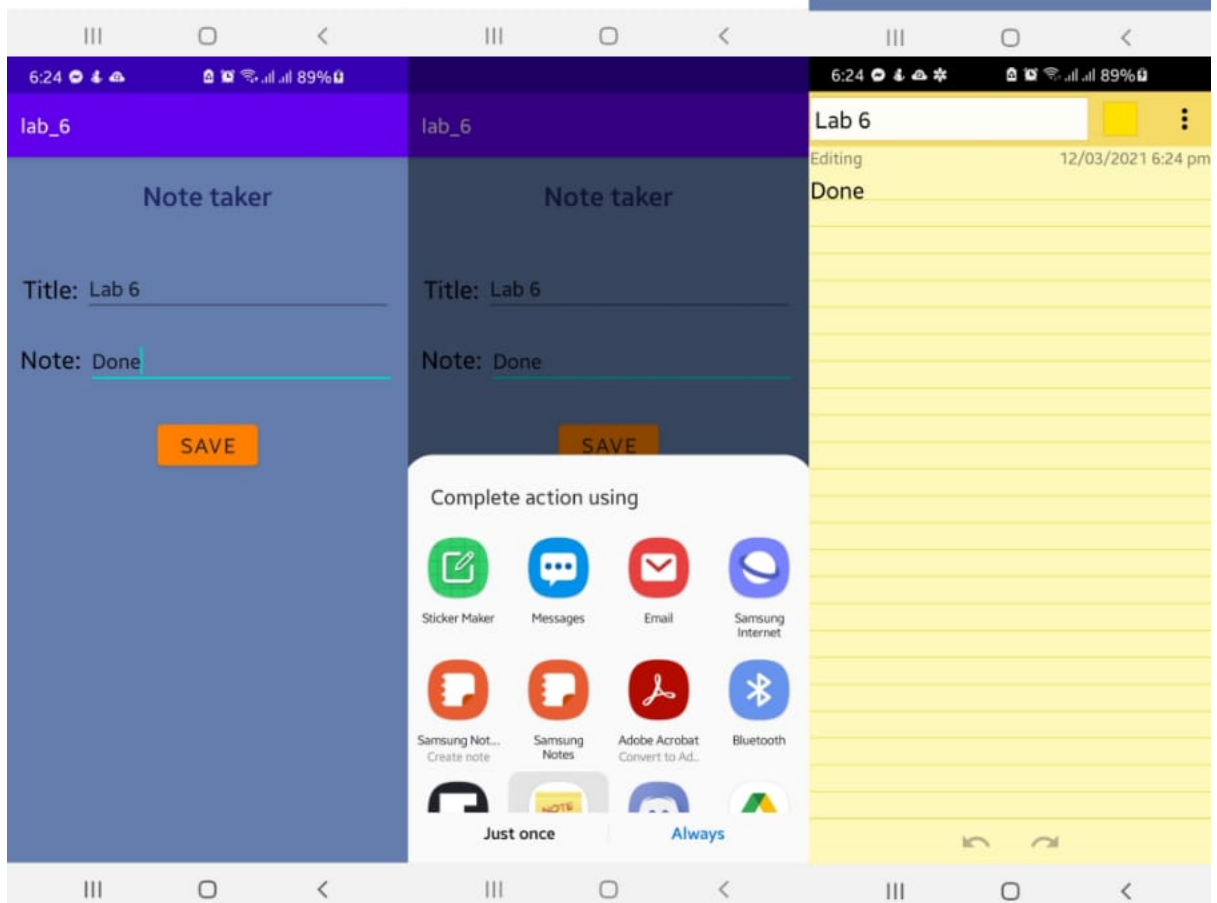
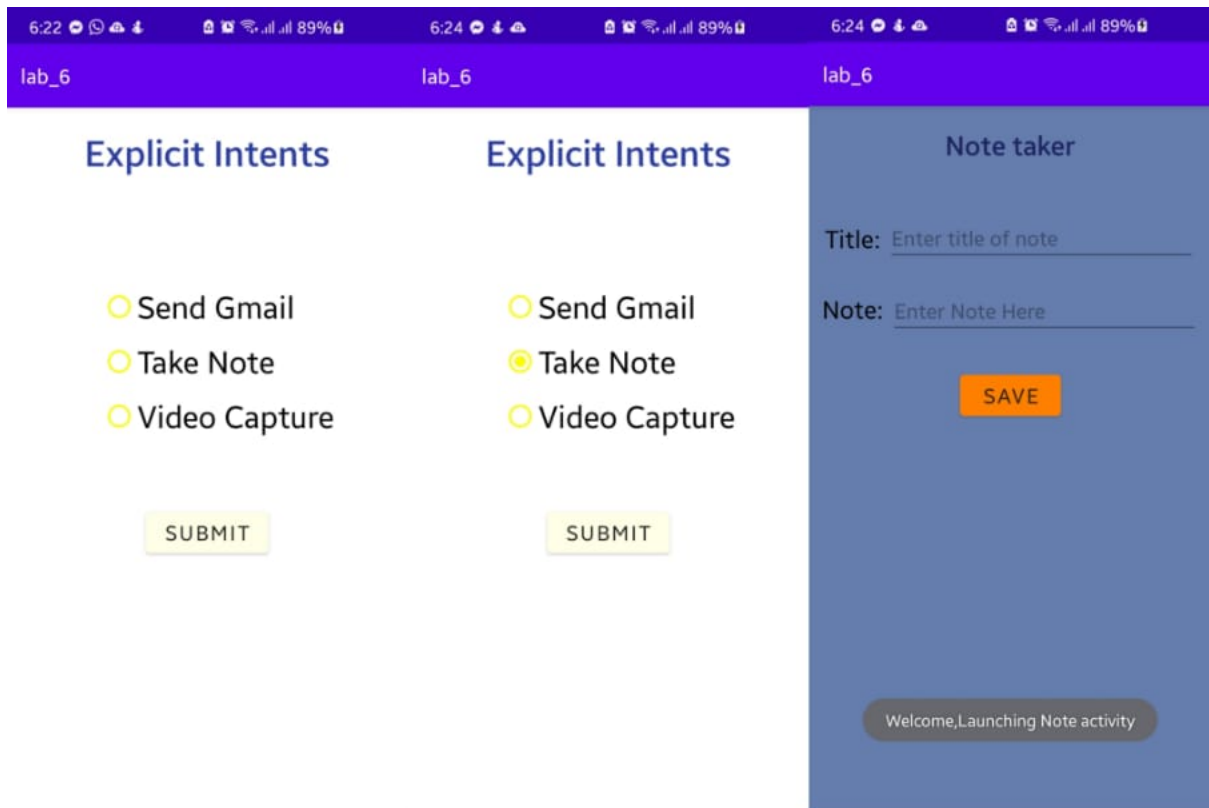
    <Button
        android:id="@+id/open_cam"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="30sp"
        android:textSize="20sp"
        android:layout_centerInParent="true"
        android:backgroundTint="#ff8000"
        android:textColor="#202020"
        android:text="Open Camera"/>

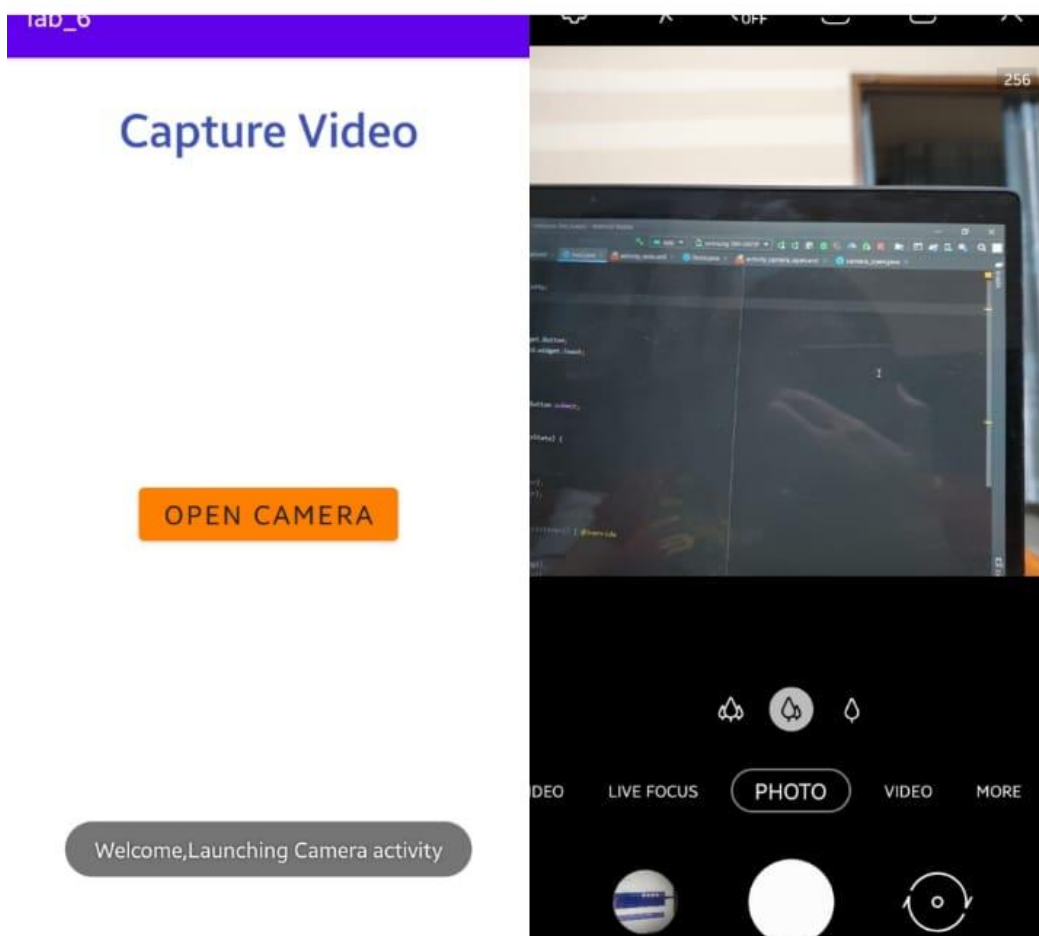
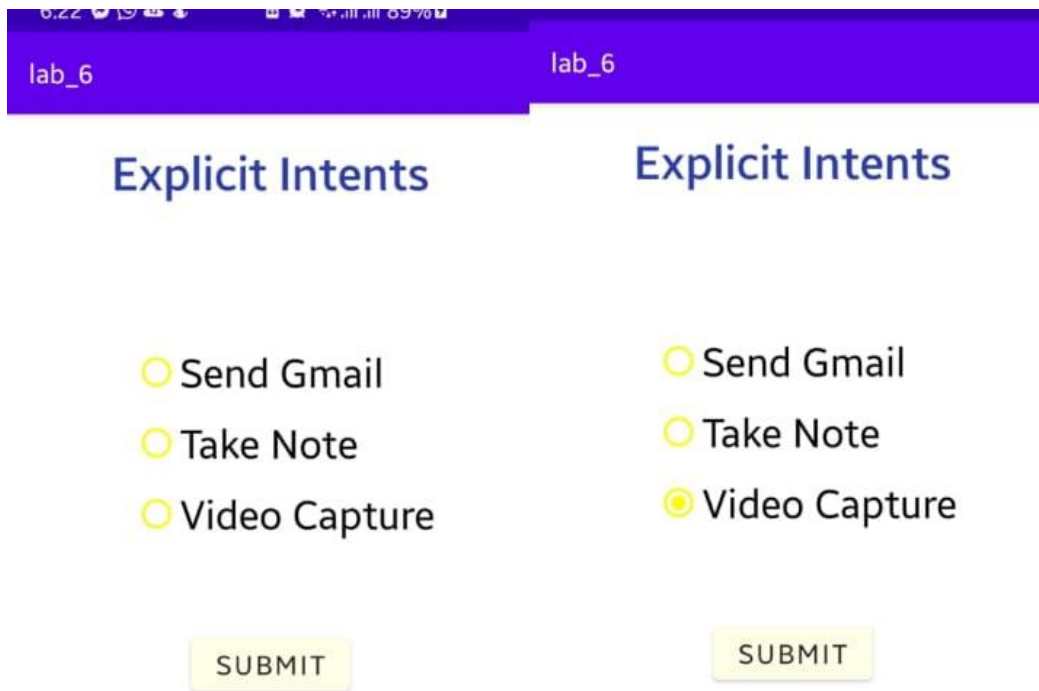
</RelativeLayout>

```

Screenshot:







Outcome:

- Intent, Implicit Intent, Explicit Intent, Button views, Radio Group, Radio Button are used to build this application successfully.
- All specifications are successfully executed.
- I learned AVD manager functionality, Intent functionalities and implementing different options in the Palette