Experiment 04

Write a program to implement login window using UI controls.

<u>Learning Objective:</u> Students should be able to write a program to implement a login window using UI controls.

Tools: Android Studio

Theory:

Android Studio:

Android Studio is the official integrated development environment (IDE) for Android application development. It is based on the IntelliJ IDEA, a Java integrated development environment for software, and incorporates its code editing and developer tools. Every project in Android Studio has one or more modalities with source code and resource files. These modalities include Android app modules, Library modules, and Google App Engine modules.

The various components used in Android studio are:

- 1. View: The view is the component which Android Studio provides us to design the layouts of the app. So, we can understand the view as a rectangular area which is going to contain some element inside it.
 - TextView: To add some text in your application.
 - EditText: This is used when you want to take some input from the users.
 - ImageView: To add some image in the application.
 - ProgressBar: To show the progress to something. For example, the loading screen.
 - Button: Buttons are used to trigger some action on the click of the button. It can be starting a new activity or something else.
 - ImageButton: It is used to make a clickable image.
 - CheckBox: CheckBox is used to select some options out of many available options.
 - DatePicker: To select some particular date.

Customizations available in a View are Width and Height of a View

- i. wrap_content: This will wrap the content of a view. For example, if you are using LinearLayout and the LinearLayout consists of two buttons and you are using the height of the LinearLayout as wrap_content, then the height of the LinearLayout will be equal to the length under which both the buttons are present i.e. the LinearLayout is wrapping the contents present in it.
- ii. match_parent: If a view is using match_parent, then it will get the same size as its parent is having. For example, if LinearLayout is the parent view and the height of LinearLayout is 80dp, then if we are using Button inside the LinearLayout with height as match_parent, then the height of the Button will also be 80dp i.e. matching the parent.
- 2. Resources: Resources is a folder which contains the images or the layout files or some string values or something else. Following are the folders that are present inside the res folder:
 - Drawable: here, we put all our graphics, vector images, custom drawings.
 - Layout here, we put all our screen layout files. Example: activity_main.xml

- Mipmap here, we put the images which are used to make the logo of the application.
- Values this folder contains four default files. colors.xml, dimens.xml, strings.xml, style.xml.

Implementation:

```
MainActivity.java
package com.example.ps_exp_4;
                                                                                        (Button)
                                                     findViewById(R.id.button);
                                                          Info
                                                                                    (TextView)
                                                     findViewById(R.id.textView6);
androidx.appcompat.app.AppCompatActivi
                                                          Info.setText("Remaining Attemps:5");
y;
                                                          Login.setOnClickListener(new
import android.content.Intent;
                                                     View.OnClickListener() {
import android.os.Bundle;
                                                            @Override
import android.view.View;
                                                            public void onClick(View view) {
import android.widget.Button;
import android.widget.EditText;
                                                     validate(Name.getText().toString(),Password
import android.widget.TextView;
                                                     .getText().toString());
         class
public
                  MainActivity
                                   extends
                                                        });
AppCompatActivity {
  private EditText Name;
                                                       private void validate(String name, String
  private EditText Password;
                                                     pass){
  private TextView Info;
  private Button Login;
                                                     if((name.equals("admin"))&&(pass.equals("a
  private int counter=5;
                                                     dmin"))){
                                                                                     intent=new
                                                     Intent(MainActivity.this,Post Login.class);
                                              startActivity(intent);
                               NBA and NAAC Accredited
  @Override
                void
                          onCreate(Bundle
                                                          else{
  protected
savedInstanceState) {
                                                            counter--:
    super.onCreate(savedInstanceState);
                                                            Info.setText("Remaining
                                                                                      Attempts:
                                                     "+String.valueOf(counter));
setContentView(R.layout.activity_main);
                                                            if(counter==0){
    Name
                                (EditText)
                                                              Login.setEnabled(false);
findViewById(R.id.editTextTextPersonNam
e);
                                                          }
    Password
                                (EditText)
findViewById(R.id.editTextTextPersonNam
e2);
```

activity_main.xml

<?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.ConstraintLa xmlns:android="http://schemas.android.com/apk /res/android" xmlns:app="http://schemas.android.com/apk/res -auto" xmlns:tools="http://schemas.android.com/tools" android:layout width="match parent" android:layout_height="match_parent" tools:context=".MainActivity"> <EditText android:id="@+id/editTextTextPersonName" android:layout_width="297dp" android:layout height="51dp" android:layout_marginStart="57dp" android:layout marginTop="43dp" android:ems="10" android:inputType="textPersonName" android:text="Enter Name" android:textColor="#314E45" android:textSize="20sp" app:layout_constraintStart_toStartOf="parent" NBA and NAAC Acc app:layout constraintTop toBottomOf="@+id/t extView4"/> <EditText android:id="@+id/editTextTextPersonName2" android:layout width="297dp" android:layout_height="51dp" android:layout_marginStart="57dp" android:layout_marginTop="40dp"

android:ems="10"

android:inputType="textPersonName"

android:text="Password" android:textColor="#314E45" android:textSize="20sp" app:layout constraintStart toStartOf="parent" app:layout_constraintTop_toBottomOf="@+id/e ditTextTextPersonName" /> <Button android:id="@+id/button android:layout_width="wrap_content" android:layout height="wrap content" android:layout_marginStart="105dp" android:layout marginTop="30dp" android:backgroundTint="#314E45" android:text="Login" android:textSize="16sp app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toBottomOf="@+id/e ditTextTextPersonName2" /> <Button android:id="@+id/button2 android:layout_width="wrap_content" android:layout_height="wrap_content" android:layout_marginStart="30dp" android:layout marginTop="30dp" android:backgroundTint="@color/white" android:text="Sign Up" android:textColor="#314E45" android:textSize="16sp" app:layout constraintStart toEndOf="@+id/butt on" app:layout_constraintTop_toBottomOf="@+id/e

ditTextTextPersonName2"

app:strokeColor="#314E45"

TCET





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Under TCET Autonomy

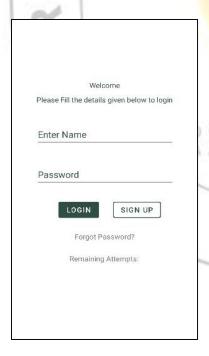
```
app:strokeWidth="5px" />
                                                         android:id="@+id/textView3"
                                                         android:layout width="wrap content"
  <TextView
                                                         android:layout_height="wrap_content"
    android:id="@+id/textView2"
                                                          android:layout marginStart="172dp"
    android:layout width="wrap content"
                                                         android:layout marginTop="141dp"
                                                         android:text="Welcome"
    android:layout height="wrap content"
    android:layout_marginStart="140dp"
                                                          android:textColor="#314E45"
    android:layout_marginTop="26dp"
                                                         android:textSize="16sp"
    android:text="Forgot Password?"
    android:textSize="16sp"
                                                     app:layout constraintStart toStartOf="parent"
app:layout_constraintStart_toStartOf="parent
                                                     app:layout_constraintTop_toTopOf="parent" />
app:layout_constraintTop_toBottomOf="@+id/b
                                                       <TextView
                                                         android:id="@+id/textView4"
utton" />
                                                         android:layout width="wrap content"
  <TextView
                                                         android:layout_height="wrap_content"
    android:id="@+id/textView6"
                                                          android:layout_marginStart="58dp"
    android:layout width="wrap content"
                                                         android:layout marginTop="11dp"
    android:layout_height="wrap_content"
                                                         android:text="Please Fill the details given
                                                     below to login"
    android:layout marginStart="129dp"
    android:layout_marginTop="28dp"
                                                          android:textColor="#314E45
    android:text="Remaining Attempts: "
                                                         android:textSize="16sp"
    android:textSize="16sp"
                                                     app:layout constraintStart toStartOf="parent"
app:layout_constraintStart_toStartOf="parent"
                                                     app:layout constraintTop toBottomOf="@+id/t
                                                     extView3"/>
app:layout_constraintTop_toBottomOf="@+id/t
extView2"/>
                                                     </androidx.constraintlayout.widget.ConstraintLa
  <TextView
                               NBA and NAAC Accredited
Post Login.java
package com.example.ps_exp_4;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
public class Post Login extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.after login);
```

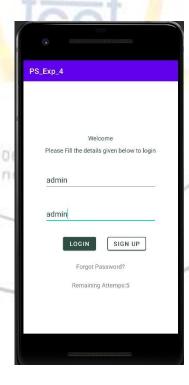
}

after login.xml

```
<?xml version="1.0" encoding="utf-8"?>
                                                    JEER MAG
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout height="match parent">
  <TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout height="wrap content"
    android:text="Welcome Karthik"
    android:textColor="#314E45"
    android:textSize="20sp"
    tools:layout_editor_absoluteX="-1dp"
    tools:layout_editor_absoluteY="54dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Design:







Result and Discussion: We successfully implemented a program to execute a program on Android Studio to create a Login Page which has a validation to display the next page.

<u>Learning Outcomes:</u> The student should have the ability to

LO1: explain how a login page can be implemented in Android Studio. LO2: execute a simple program to create a login page with validation

<u>Course Outcomes:</u> Upon completion of the course students will be able to execute a simple programs illustrating login pages with validations.

<u>Conclusion:</u> We understood the concept of Login Page and how it can be created for an application. We also learned how to validate the login details filled by the users for the application. Several concepts related to Android Application Development were revised while performing this experiment.

For Faculty Use

	Formative Assessment [40%]	Timely completion of Practical [40%]		TECH
Marks Obtained		to	51	

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