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GitHub Link - https://github.com/NelluriAnusha/Demo_Remote/tree/main/Mobilepart/ICP8

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GitHub Link - https://github.com/AchyuthValeti/Demo_Remote/tree/main/Mobilepart/ICP8

ICP8 (Basics of Android)

Introduction:

Android is most widely used and popular mobile operating system in recent years. From the first quarter of 2011, Android has grown bigger than Apple iOS as the most popular mobile operating system worldwide.

In this ICP, we were asked to use Android Studio to develop an Android application for a login page where the user must enter their username and password and the application should redirect to a welcome screen after they click the login button and the entered login credentials are valid. Also, the screen should redirect to the login screen when user clicked on the logout button.
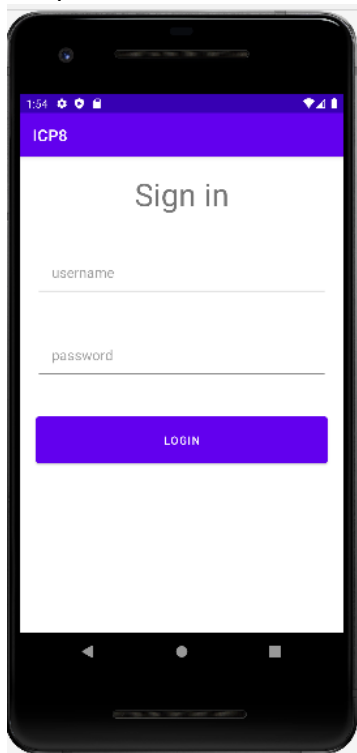
Tasks:

- Firstly, we have installed Android studio in our machines.
- Then, we created a new project in Android studio application and selected "empty activity".
- Each empty activity contains .java and .xml files (MainActivity.java, activity_main.xml) and it is used for Login page.
- In 'activity_main.xml' file, implemented code for username, password textboxes and Login button which will be displayed on the mobile application as below.

```xml
    android:id="@+id/username"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/logo"
    android:layout_marginStart="20dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="20dp"
    android:layout_marginBottom="20dp"
    android:hint="username"
    android:padding="20dp" />

<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/username"
    android:layout_marginStart="20dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="20dp"
    android:layout_marginBottom="20dp"
    android:hint="password"
    android:inputType="textPassword"
    android:padding="20dp" />

<Button
```
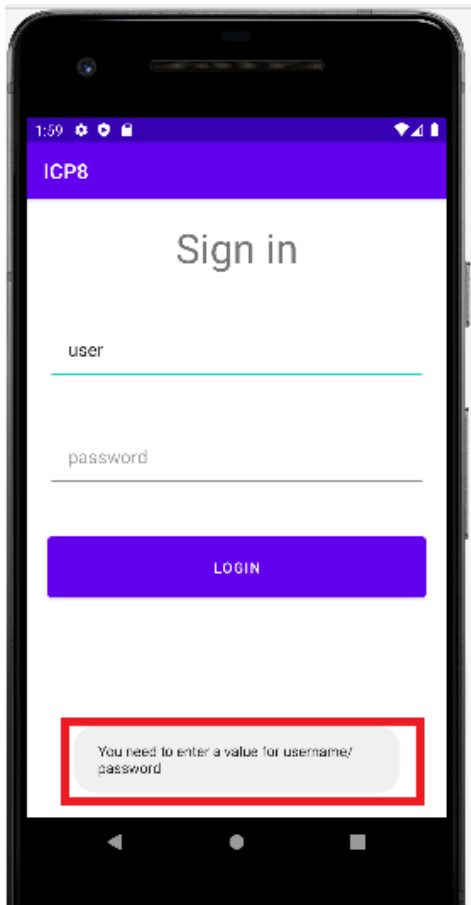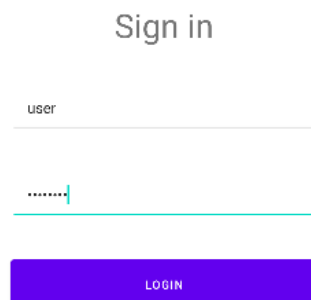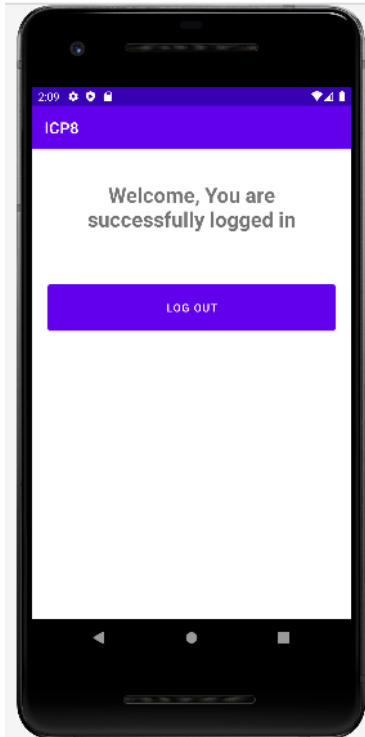
Output:

- Here, we have taken password field as **"textPassword"** to hide the password. And, implemented all the height & width fields for textboxes and button for proper alignment.
- Then in 'MainActivity.java' file, we have initialized variables for username, password and button and assigned with the values from id's in the 'activity_main.xml' file.
- We have defined username and password variables with static values and implemented validations as well.
- When the username & password values are empty, proper error message will be displayed on screen as "**You need to enter a value for username/password**".

- If we enter invalid username and password, then proper error message will be displayed on mobile screen as "**Incorrect Username & Password**". If we enter only invalid password then **"Password is not correct"** message will be displayed on screen. When we enter only invalid username then **"Username is not correct"** message will be displayed on screen.
- When valid credentials are entered and clicked on login button, it will be redirected to the next screen (welcome screen). And, we have implemented the same functionality in "MainActivity.java" file.

```java
if ((username.getText().toString().equals("user")) && (password.getText().toString().equals("password"))) {
    Intent intent = new Intent( packageContext: MainActivity.this, MainActivity2.class);
    startActivity(intent);
    Toast.makeText( context: MainActivity.this, text: "Button is clicked", Toast.LENGTH_SHORT).show();
```
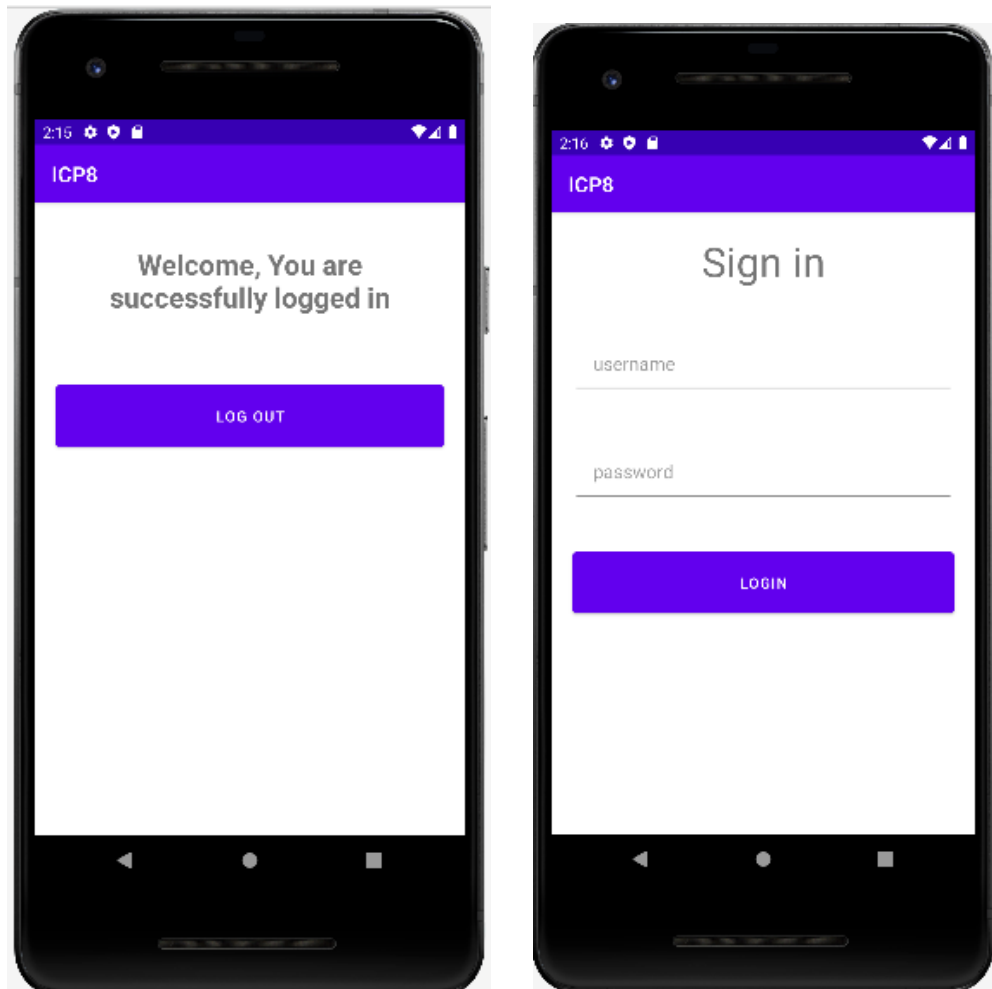
- So, we have created one more Empty activity for handling the welcome(second) screen functionality and it contains .java and .xml files (MainActivity2.java, activity_main2.xml).
- In 'activity_main2.xml' file, we implemented one logout button and displaying one welcome screen text message for successful login authentication as "**Welcome, You are successfully logged in**".
- Then in MainActivity2.java file, initialized variable for logout button and assigned with the values from id's in the 'activity_main2.xml' file.
- When we clicked on logout button, then user will be navigated to the again login screen from welcome screen and implemented the same as below.

```java
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main2);

    Button logoutBtn = findViewById(R.id.logoutBtn);
    logoutBtn.setOnClickListener(new View.OnClickListener() { //when we click on logout button
        @Override
        public void onClick(View view) { //It goes from second page to the login page
            Intent redirect = new Intent( packageContext: MainActivity2.this, MainActivity.class);
            startActivity(redirect);
        }
    });
```

Contribution:

We have contributed equally.

Conclusion:

In this ICP, we have learned basics of android & how to use Android studio to develop an application and developed a mobile android application using the same.

Challenges:

We have not faced any major challenges while doing the assignment.