MOBILE APPLICATIONS DEVELOPMENT LAB CSLR-34

09/04/2021	Lab 8

Submitted By: -

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CSE

QUESTION-1: Design an Android application for Course Registration using Android Studio with the following specifications.

i) In an activity, have a login page with username, password and login button. The username will be the roll number of the student and password will be their name (stored in sqlite database). Display error messages using toasts if wrong credentials.

ii) Upon logging in, have an activity where the user can select a list of subjects from checkboxes and upon clicking on submit button, update database and open another activity and display the selected subjects with toast "registration successful". Have a button, upon clicking, the name of the other students who registered the subjects which the user registered, should be displayed

iii) Have a menu with a list of menu items such as Logout, Change password, Exit app.

- Logout - Logout and redirect to the login page.
- Change password - Redirect to a page where take inputs such as current password, new password (using textviews and text boxes) and a submit button. Upon clicking the button, check whether the password matches and if doesn't match, display error with toasts and clear the typed contents of the textboxes.
- Exit - Close the app.

EXPERIMENT NAME: To create an application for Course Registration.
AIM: To create an application for Course Registration.
DESCRIPTION OF APP:

- There is a login page with username, password and login button.
- The username is the roll number of the student and password is their name which will be stored in sqlite database
- If one enters wrong credentials error message is shown in the toast
- After logging in, the user can select a list of subjects from checkbox
- Upon Clicking on submit button, the database will be updated and another activity will be opened displaying selected subjects with toast "registration successful". Another button is there to display name of other students who registered the subjects which the user registered
- There is a main menu consisting logout, change password, exit app options

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 activites

- **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 :

Activity_main.xml :

```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"
    android:background="#00ffdd"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Username :"
        android:textStyle="bold"
        android:id="@+id/unameview"
        android:textColor="@color/black"
        android:layout_marginTop="130dp" />
    <EditText
        android:id="@+id/username"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter your Username"
        android:textColor="@color/black"
        android:inputType="text"
        android:textColorHint="@color/black"
        android:layout_marginTop="120dp"
        android:layout_marginLeft="85dp"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password :"
        android:textStyle="bold"
        android:textColor="@color/black"
        android:id="@+id/passwordview"
        android:layout_marginTop="200dp" />
    <EditText
        android:id="@+id/password"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter your Password" android:textColorHint="@color/black"
        android:textColor="@color/black"
        android:inputType="textPassword"
        android:layout_marginTop="190dp"
        android:layout_marginLeft="85dp"/>

    <Button
        android:id="@+id/log"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="300dp"
        android:text="Login"
        android:textAllCaps="false"
        android:textSize="20sp"
        app:backgroundTint="#2196F3" />

</RelativeLayout>
```

MainActivity.java :

```java
package com.example.coursereg;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
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 {
    Button login;
    EditText name,password;
    DBHelper mydb;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name=findViewById(R.id.username);
        password=findViewById(R.id.password);

        login=findViewById(R.id.Log);
        name.setText("");
        password.setText("");
        mydb=new DBHelper(this);

        mydb.insertData("106118050","Maneesh");
        mydb.insertData("106118064","Subhash");
        mydb.insertData("106118070","Niteesh");
        mydb.insertData("106118022","Ravindra");
        mydb.insertData("106118034","Sudheer");
        mydb.insertData("106118031","Saideepak");
        mydb.insertData("106118092","Srikaran");

        login.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String un=name.getText().toString();
                String pass=password.getText().toString();

                if(un.matches("") || pass.matches("")){
                    Toast.makeText(MainActivity.this, "Credientials cannot be
empty", Toast.LENGTH_SHORT).show();
                    return;
                }

                if(!mydb.isPresent(un)){
                    Toast.makeText(MainActivity.this, "Username does not exist",
Toast.LENGTH_SHORT).show();
                    return;
                }

                if(!mydb.isUsernamePasswordValid(un,pass)){
                    Toast.makeText(MainActivity.this, "Password does not match",
```

```
Toast.LENGTH_SHORT).show();
                        return;
                    }

                    Toast.makeText(MainActivity.this, "Login Successful",
Toast.LENGTH_SHORT).show();
                    Intent moveToLogin=new
Intent(MainActivity.this,LoginActivity.class);
                    Bundle b=new Bundle();
                    b.putString("username",un);
                    b.putString("password",pass);
                    moveToLogin.putExtras(b);
                    startActivity(moveToLogin);
                }
            });
        }

}
```

LoginActivity.java :

```
package com.example.coursereg;


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

import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.TextView;
import android.widget.Toast;

public class LoginActivity extends AppCompatActivity {
    private CheckBox sub1,sub2,sub3,sub4;
    private Button registerBtn;
    DBHelper mydb;
    private TextView welcome;
    private String username;
    private Cursor retrievedPassword;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);

        sub1=findViewById(R.id.sub1);
        sub2=findViewById(R.id.sub2);
        sub3=findViewById(R.id.sub3);
        sub4=findViewById(R.id.sub4);
        Bundle b=getIntent().getExtras();
        username=b.getString("username");
        registerBtn=findViewById(R.id.register);
        welcome=findViewById(R.id.welcomeText);
```

```java
            welcome.setText("WELCOME "+username);
            mydb =new DBHelper(this);
            retrievedPassword= mydb.getPassword(username);
            retrievedPassword.moveToFirst();

            registerBtn.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    if(!sub1.isChecked() && !sub2.isChecked() && !sub3.isChecked() &&
!sub4.isChecked()){
                        Toast.makeText(LoginActivity.this, "No subject is selected",
Toast.LENGTH_SHORT).show();
                        return;
                    }
                    String check1="no",check2="no",check3="no",check4="no";
                    if(sub1.isChecked())
                        check1="yes";
                    if(sub2.isChecked())
                        check2="yes";
                    if(sub3.isChecked())
                        check3="yes";
                    if(sub4.isChecked())
                        check4="yes";
                    int updated=
mydb.insertChoices(username,check1,check2,check3,check4);
                    if(updated==-1){
                        Toast.makeText(LoginActivity.this, "Registration Failed",
Toast.LENGTH_SHORT).show();
                        return;
                    }
                    else{
                        Toast.makeText(LoginActivity.this, "Registered Successfully",
Toast.LENGTH_SHORT).show();
                        Intent moveToActivity2=new
Intent(LoginActivity.this,ShowActivity.class);
                        Bundle b = new Bundle();
                        b.putString("username",username);
                        moveToActivity2.putExtras(b);
                        startActivity(moveToActivity2);
                    }
                }
            });
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.menu, menu);
        return super.onCreateOptionsMenu(menu);
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        switch(item.getItemId())
        {
            case R.id.logout:
                Toast.makeText(getApplicationContext(),"Clicked Logout",
Toast.LENGTH_LONG).show();
                finish();
                break;
```

```java
            case R.id.chgpass:
                Toast.makeText(getApplicationContext(),"Clicked Change Password",
Toast.LENGTH_LONG).show();
                Intent moveToChangePass=new
Intent(LoginActivity.this,changepassword.class);
                Bundle b=new Bundle();
                b.putString("username",username);
                b.putString("password",retrievedPassword.getString(0));
                moveToChangePass.putExtras(b);
                startActivity(moveToChangePass);
                break;
            case R.id.exit:
                Toast.makeText(this, "Clicked Exit", Toast.LENGTH_SHORT).show();
                Intent homeIntent = new Intent(Intent.ACTION_MAIN);
                homeIntent.addCategory( Intent.CATEGORY_HOME );
                homeIntent.setFlags(Intent.FLAG_ACTIVITY_CLEAR_TOP);
                startActivity(homeIntent);
                break;
        } return super.onOptionsItemSelected(item);
    }
}
```

DatabaseHelper.java :

```java
package com.example.coursereg;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import androidx.annotation.Nullable;
import java.sql.ResultSet;
import java.sql.Statement;
public class DBHelper extends SQLiteOpenHelper {
    private static final String DATABASE_NAME = "student.db";
    private static final String TABLE_NAME = "course_registration";
    private static final String COL_1 = "ID";
    private static final String COL_2 = "USERNAME";
    private static final String COL_3 = "PASSWORD";
    private static final String COL_4 = "DATA_STRUCTURES";
    private static final String COL_5 = "OPERATING_SYSTEMS";
    private static final String COL_6 = "APP_DEVELOPMENT";
    private static final String COL_7 = "ML_AI";

    public DBHelper(@Nullable Context context) {
        super(context,DATABASE_NAME,null,1);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create table "+TABLE_NAME+ " ( "+COL_1+" INTEGER PRIMARY KEY
AUTOINCREMENT , "+COL_2+" VARCHAR UNIQUE, "+COL_3+" VARCHAR , "+COL_4+" VARCHAR ,
"+COL_5+" VARCHAR ,"+COL_6+" VARCHAR ,"+COL_7+" VARCHAR "+" ) ");
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
```

```java
        db.execSQL("DROP TABLE IF EXISTS "+TABLE_NAME);
        onCreate(db);
    }


    public void insertData(String username,String password){
        SQLiteDatabase db=this.getWritableDatabase();
        ContentValues data_holder=new ContentValues();
        data_holder.put(COL_2,username);
        data_holder.put(COL_3,password);
        data_holder.put(COL_4,"no");
        data_holder.put(COL_5,"no");
        data_holder.put(COL_6,"no");
        data_holder.put(COL_7,"no");
        long rowId=db.insert(TABLE_NAME,null,data_holder);
    }

    public Cursor getSubjects(String username){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor getData=db.rawQuery("select * from course_registration where
USERNAME =?",new String [] { username });
        return getData;
    }



    public boolean isPresent(String username){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor getData=db.rawQuery("select * from "+TABLE_NAME+" where "+COL_2+"
=? ",new String [] { username });
        if(getData.getCount() > 0)
            return true;
        else
            return false;
    }

    public boolean isUsernamePasswordValid(String username,String password){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor getData=db.rawQuery("select * from "+TABLE_NAME+" where "+COL_2+"
=? "+" and "+COL_3+" =? ",new String [] { username,password });
        if(getData.getCount() > 0)
            return true;
        else
            return false;
    }

    public Cursor getPassword(String username){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor getData=db.rawQuery("select PASSWORD from "+TABLE_NAME+" where
"+COL_2+" =? ",new String [] { username });
        return getData;
    }

    public Cursor getusers(String subjectName){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor getData=db.rawQuery("select USERNAME from "+TABLE_NAME+" where
"+subjectName+" =? ",new String [] { "yes" });
        return getData;
    }
```

```java
    public int insertChoices(String username,String sub1,String sub2,String
sub3,String sub4){
        SQLiteDatabase db=this.getWritableDatabase();
        ContentValues data_holder=new ContentValues();
        data_holder.put(COL_4,sub1);
        data_holder.put(COL_5,sub2);
        data_holder.put(COL_6,sub3);
        data_holder.put(COL_7,sub4);

        return db.update(TABLE_NAME,data_holder,COL_2+" = ? ",new String [] {
username });
    }

    public int changePassword(String username,String password){
        SQLiteDatabase db=this.getWritableDatabase();
        ContentValues data_holder=new ContentValues();
        data_holder.put(COL_3,password);

        return db.update(TABLE_NAME,data_holder,COL_2+" = ? ",new String [] {
username });
    }


}
```

ChangePassword.java :

```java
package com.example.coursereg;

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 changepassword extends AppCompatActivity {
    private Button change;
    private EditText oldPassword,newPassword,newPassword1;
    DBHelper mydb;
    private String username,password;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_changepassword);

        mydb =new DBHelper(this);
        change=findViewById(R.id.change);
        oldPassword=findViewById(R.id.cp);
        newPassword=findViewById(R.id.p);
        newPassword1=findViewById(R.id.rp);
        Bundle b=getIntent().getExtras();
        username=b.getString("username");
        password=b.getString("password");

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

```java
        @Override
        public void onClick(View v) {
            String oldpass=oldPassword.getText().toString();
            String newpass=newPassword.getText().toString();
            String newpass1=newPassword1.getText().toString();

            if(!oldpass.matches(password) ){
                Toast.makeText(changepassword.this, "Old Password does not
match", Toast.LENGTH_SHORT).show();
                return;
            }

            if(newpass.matches("")){
                Toast.makeText(changepassword.this, "New password cannot be
empty", Toast.LENGTH_SHORT).show();
                return;
            }

            if(oldpass.matches(newpass)){
                Toast.makeText(changepassword.this, "New password cannot be
same as old password", Toast.LENGTH_SHORT).show();
                return;
            }

            if(!newpass.matches(newpass1)){
                Toast.makeText(changepassword.this, "Both Passwords doesn't
match", Toast.LENGTH_SHORT).show();
                return;
            }

            Toast.makeText(changepassword.this, "New password updated
successfully", Toast.LENGTH_SHORT).show();
            mydb.changePassword(username,newpass);
        }
    });
    }
}
```

activity_show.xml :

```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="@color/teal_200"
    android:orientation="vertical"
    tools:context=".ShowActivity">

    <TextView
        android:id="@+id/welcomeText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="30sp"
        android:layout_marginBottom="30sp"
        android:text="Welcome"
```

```xml
            android:textColor="@color/purple_500"
            android:textSize="40sp"
            android:textStyle="bold" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20sp"
        android:layout_marginTop="30sp"
        android:layout_marginBottom="20sp"
        android:text="Registered Subjects"
        android:textColor="@color/black"
        android:textSize="30sp"
        android:textStyle="bold" />

    <ListView
        android:id="@+id/lv"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

</LinearLayout>
```

activity_change_password.xml :

```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="#00ffdd"
    android:orientation="vertical"
    tools:context=".Changepassword">
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <TextView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:text="CHANGE PASSWORD"
            android:textColor="#026105"
            android:textSize="24sp" />
    </LinearLayout> <LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="100dp"
    android:orientation="horizontal">

    <TextView
        android:layout_width="163dp"
        android:layout_height="wrap_content"
        android:text="Curr Password : "
        android:textColor="@color/black"
        android:textSize="18sp"
        android:textStyle="bold" />
```

```xml
    <EditText
        android:id="@+id/cp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter Current password"
        android:inputType="text"
        android:textColor="@color/black"
        android:textColorHint="@color/black"
        android:textSize="18sp" />
</LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <TextView
            android:layout_width="163dp"
            android:layout_height="wrap_content"
            android:text="New Password : "
            android:textColor="@color/black"
            android:textSize="18sp"
            android:textStyle="bold" />

        <EditText
            android:id="@+id/p"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:hint="Enter New password"
            android:inputType="textPassword"
            android:textColor="@color/black"
            android:textColorHint="@color/black"
            android:textSize="18sp" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Confirm Password : "
            android:textColor="@color/black"
            android:textSize="18sp"
            android:textStyle="bold" />

        <EditText
            android:id="@+id/rp"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:hint="Re-enter the password"
            android:inputType="textPassword"
            android:textColor="@color/black"
            android:textColorHint="@color/black"
            android:textSize="18sp" />
    </LinearLayout>
    <Button
        android:id="@+id/change"
        android:layout_width="match_parent"
```

```xml
                android:layout_height="wrap_content"
                android:layout_marginTop="30dp"
                android:text="Change"
                android:textSize="20sp"
                android:textAllCaps="false"
                app:backgroundTint="#21B127" />
</LinearLayout>
```

loginpage_menu.xml :

```xml
c<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <item
        android:id="@+id/chgpass"
        android:title="Change password"
        app:showAsAction="never|collapseActionView" />
    <item
        android:id="@+id/logout"
        android:title="Logout" />

    <item
        android:id="@+id/exit"
        android:title="Exit" />
</menu>
```

<u>ShowActivity.java:</u>

```java
package com.example.coursereg;

import  androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;


import java.util.ArrayList;


public class ShowActivity extends AppCompatActivity {
    private TextView welcome,subjects;
    private Button show;
    private String username;
    private ArrayList<String> listItem;
    private ArrayAdapter adapter;
    private ListView list;
```

```java
    DBHelper mydb;
    private String COL_4 = "DATA_STRUCTURES";
    private String COL_5 = "OPERATING_SYSTEMS";
    private String COL_6 = "APP_DEVELOPMENT";
    private String COL_7 = "ML_AI";
    private Cursor retrievedPassword;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_show);
        listItem=new ArrayList<>();

        welcome = findViewById(R.id.welcomeText);
        Bundle received = getIntent().getExtras();
        username = received.getString("username");
        mydb = new DBHelper(this);
        list=findViewById(R.id.lv);
        retrievedPassword= mydb.getPassword(username);
        retrievedPassword.moveToFirst();

        viewData();

        list.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                String text=list.getItemAtPosition(position).toString();
                Cursor dataRetrieved= mydb.getusers(text);
                if(dataRetrieved.getCount()==0){
                    showMsg("Error","Data not found");
                }
                else{
                    StringBuilder buffer=new StringBuilder();
                    while(dataRetrieved.moveToNext()){
                        buffer.append(dataRetrieved.getString(0)+"\n");
                    }
                    showMsg("Data",buffer.toString());
                }
            }
        });

        welcome.setText("Hello " + username);
        StringBuilder buffer = new StringBuilder();


    }

    private void viewData() {
        Cursor cursor= mydb.getSubjects(username);
        if(cursor.getCount()==0){
            Toast.makeText(this, "No data to show", Toast.LENGTH_SHORT).show();
            return;
        }
        else{
            cursor.moveToFirst();
            if(cursor.getString(3).matches("yes"))
                listItem.add(COL_4);
            if(cursor.getString(4).matches("yes"))
                listItem.add(COL_5);
```

```java
            if(cursor.getString(5).matches("yes"))
                listItem.add(COL_6);
            if(cursor.getString(6).matches("yes"))
                listItem.add(COL_7);
        }
        adapter=new ArrayAdapter<String>(this,
android.R.layout.simple_list_item_1,listItem);
        list.setAdapter(adapter);
    }

    private void showMsg(String title,String data){
        AlertDialog.Builder alert=new AlertDialog.Builder(this);
        alert.setCancelable(true);
        alert.setTitle(title);
        alert.setMessage(data);
        alert.show();
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.menu, menu);
        return super.onCreateOptionsMenu(menu);
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        switch(item.getItemId())
        {
            case R.id.logout:
                Toast.makeText(getApplicationContext(),"Clicked Logout",
Toast.LENGTH_LONG).show();
                Intent i=new Intent(getApplicationContext(),MainActivity.class);
                startActivity(i);
                break;
            case R.id.chgpass:
                Toast.makeText(getApplicationContext(),"Clicked Change Password",
Toast.LENGTH_LONG).show();
                Intent moveToChangePass=new
Intent(ShowActivity.this,changepassword.class);
                Bundle b=new Bundle();
                b.putString("username",username);
                b.putString("password",retrievedPassword.getString(0));
                moveToChangePass.putExtras(b);
                startActivity(moveToChangePass);
                break;
            case R.id.exit:
                Toast.makeText(this, "Clicked Exit", Toast.LENGTH_SHORT).show();
                Intent homeIntent = new Intent(Intent.ACTION_MAIN);
                homeIntent.addCategory( Intent.CATEGORY_HOME );
                homeIntent.setFlags(Intent.FLAG_ACTIVITY_CLEAR_TOP);
                startActivity(homeIntent);
                break;
        } return super.onOptionsItemSelected(item);
    }
}
```
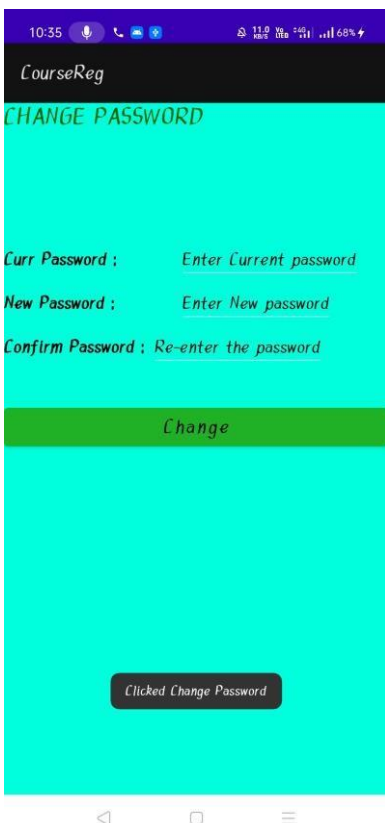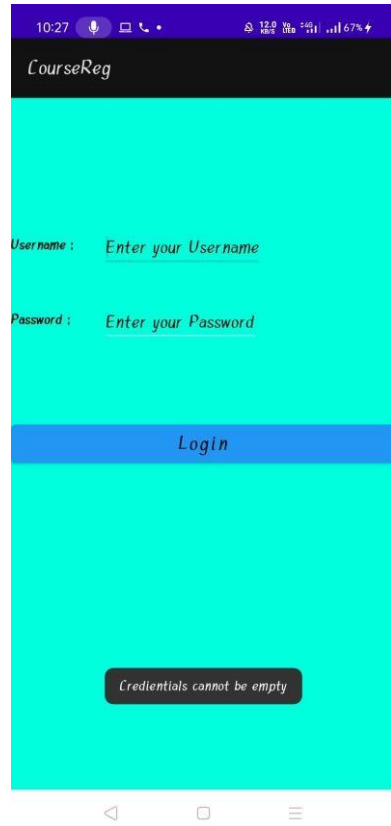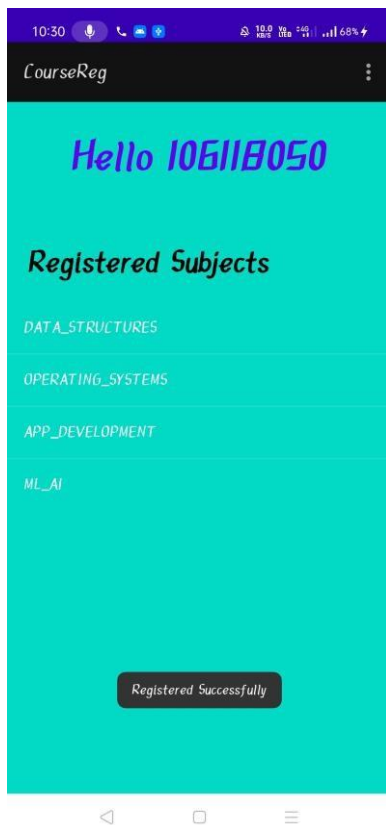
SCREENSHOTS:

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, how to attach SQLite database in android studio.