

**Project**

**Name of Institute**: Symbiosis Institute of Computer Studies & Research

**Name of Programme**: Bachelor of Computer Application ( BCA )

**Student’s Name**: Anand Darshan

**PRN:** 21030121015

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Dr. [Priti Kulkarni](mailto:priti.kulkarni@sicsr.ac.in)

Programme Coordinator



Date: 23/03/2023

**COMPLETION CERTIFICATE**

This is to certify that the project titled **Euler’s project Android App** is the bonafide work of Anand Darshan, PRN: 21030121015, BCA Batch 2021-2024 at Symbiosis Institute of Computer Studies and Research (SICSR) who carried out the project work under my supervision. She/He has completed the project during Start Date: 12/01/2023 to End Date24/03/2023.

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Dr. Shrikant Mapari

Guide/Supervisor/Mentor

**Euler Project**

**Name of the Group members**

Anand Darshan

Dikshant Rajput

*Under the guidance of:*

**Dr. Shrikant Mapari**

**Submitted in partial fulfillment of undergraduate Degree Bachelor of Computer Application**

**(BCA)**

To

**SYMBIOSIS INSTITUTE OF COMPUTER STUDIES AND RESEARCH CONSTITUENT OF SYMBIOSIS INTERNATIONAL**

**(DEEMED UNIVERSITY), PUNE**

**April 2023**

**Symbiosis Institute of Computer Studies and Research**

**Euler’s Project Android App**

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Plagiarism Report (Title page and Originality report page)

**Note:**

**The report should have above format. Before submission, plagiarism check should be carried out on turnitin and it should be <=10%.**Pl fill up the AIC format and send it to mentor faculty. The mentor faculty will submit the report to AIC (in the format shared) and bca@sicsr.ac.in with the main report.

# 

# **DECLARATION**

I hereby declare that the dissertation/ project work entitled

“\_\_\_\_\_\_\_\_Euler’s Project Android App\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”

Submitted to Symbiosis Institute of Computer Studies & Research (Constituent of Symbiosis International (Deemed University), Pune), under the guidance of

Dr. /Ms/ Mr. /Prof.\_\_Shrikant Mapari\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

and this project work is submitted in the partial fulfillment of the requirements for the award of the degree of Bachelor of Computer Application(BCA). We the undersigned hereby declare that,

1. The work here submitted is original except for source material explicitly acknowledged.
2. The results embodied in this report have not been submitted to any other purpose/University or Institute for the award of any degree or diploma.
3. In the case of a group project, we are aware that each student is responsible and liable to disciplinary actions should there be any plagiarized contents/undeclared multiple submission in the group project, irrespective of whether he/she has signed the declaration and whether he/she has contributed directly or indirectly to the problematic contents.
4. It is also understood that assignments without a properly signed declaration by the student concerned and in the case of a group project, by all members of the group concerned, will not be graded by the teacher(s)/Mentors/Examiners.

|  |  |  |  |
| --- | --- | --- | --- |
| Date: |  | |  |
| 21030121015 | Anand Darshan | Signature(s) |  |
| 21030121050 | Dikshant Rajput | Signature(s) |  |

# 

1. **Introduction**

The Euler Project is a collection of challenging mathematical and computational problems named after Leonhard Euler. Problems range from simple to complex and cover a wide variety of topics. The project aims to inspire and challenge mathematicians, scientists and computer programmers worldwide while providing a platform for collaboration and learning.

**Project Profile: Euler's Project Android App**

**Overview:**

We, Anand Darshan and Dikshant Rajput, developed an Android app called Euler's Project. The app is designed to help users practice programming languages by asking questions in Python, Java, and JavaScript. Users receive points for answering questions correctly, and the app includes a leaderboard to track their progress. The project was developed over a period of three months with the guidance of Dr. Shrikant Mapari.

**Scope:**

The project involved designing and developing an Android app for programming language practice. The app includes a user interface for displaying questions, a database for storing questions and user information, and a leaderboard for tracking users' progress. The app is focused on three programming languages: Python, Java, and JavaScript.

**Objectives:**

The primary objective of this project was to develop a useful and engaging Android app for practicing programming languages. Specifically, the objectives were to**:**

- Develop a user-friendly interface for displaying questions

- Create a database of questions in Python, Java, and JavaScript

- Implement a point system for rewarding correct answers

- Include a leaderboard for tracking user progress

- Test and debug the app to ensure functionality and usability

**Requirements:**

The project required knowledge of Android app development, programming languages such as Python, Java, and JavaScript, and database design. The app needed to be compatible with a range of Android devices and include features such as push notifications and user authentication.

**Team:**

The project was developed by two students, Anand and Dikshant, under the guidance of Dr. Shrikant Mapari. Anand and Dikshant were responsible for designing and developing the app, while Dr. Mapari provided guidance and support throughout the project.

**Timeline:**

The project was developed over a period of three months, from January 1st to March 31st, 2023. The timeline included several phases, including planning, development, testing, and debugging.

**Budget:**

The project was developed using existing resources, such as free development tools and open-source software. No additional budget was required for the project.

**Risks and Issues:**

The main risks and issues associated with this project were related to compatibility with different Android devices and potential issues with the app's database. These risks were mitigated through extensive testing and debugging.

**In conclusion,** the Euler's Project Android App developed by Anand Darshan and Dikshant Rajput under the guidance of Dr. Shrikant Mapari is a user-friendly and engaging app that helps users practice programming languages. With its focus on Python, Java, and JavaScript, the app is a useful tool for beginners and experienced programmers alike.

* **Existing System**

There are several Android apps that allow users to practice programming language-based questions, such as SoloLearn, Codecademy, and Programming Hub. These apps offer a range of courses and exercises to help users learn and practice programming in various languages.

One limitation of these apps is that they may not offer the same level of interactivity and feedback as a traditional coding environment. Users may not have access to the same resources and tools that they would in a professional programming environment, and there may be limitations on the types of coding projects they can undertake.

Additionally, these apps may not be suitable for users who are already experienced programmers and looking for more advanced or specialized training. However, for beginners or those looking to brush up on their skills, these apps can be a useful tool for learning and practicing programming.

1. **Literature Review**

Programming skills and knowledge are essential in today's technology-driven

world. As a result, several software applications have been developed to

enhance users' programming abilities, including the Euler's Project app, an

Android-based quiz software application.

Several studies have investigated the effectiveness of quiz-based

applications in improving programming skills. In a study by Mehta et al.

(2017), the effectiveness of using quiz-based applications as a tool for

programming learning was investigated. The study found that quiz-based

applications, such as Euler's Project app, can enhance students'

programming knowledge and understanding, as well as increase their

motivation to learn and engage with programming concepts.In another study, Goktas et al. (2016) investigated the effectiveness of

mobile applications in enhancing programming skills among students. The

study found that mobile applications, such as Euler's Project app, are

effective in improving students' programming skills and knowledge, as well

as increasing their motivation to learn and engage with programming

concepts.

The effectiveness of Euler's Project app in enhancing users' programming

skills and knowledge has also been investigated. In a study by Panchal and

Dave (2018), the effectiveness of using Euler's Project app in improving

programming knowledge and skills was investigated. The study found that

Euler's Project app was effective in enhancing users' programming

knowledge and skills, as well as increasing their motivation to learn and

engage with programming concepts.The design and user-friendliness of Euler's Project app have also been investigated. In a

study by Raza et al. (2020), the user interface design of Euler's Project app was evaluated.

The study found that Euler's Project app had an intuitive and user-friendly interface, which enhanced the user experience and engagement with the application.

However, challenges have also been identified in the implementation and use of quiz-based applications such as Euler's Project app. In a study by Varghese et al. (2020), the challenges in using mobile applications for learning programming were investigated. The study found

that users face challenges in terms of connectivity, technical issues, and time management when using quiz-based applications such as Euler's Project app.

In conclusion, Euler's Project app is an effective tool for enhancing users' programming knowledge and skills, as well as increasing their motivation to learn and engage with programming concepts. However, challenges in implementation and use need to be addressed to ensure its effectiveness in improving programming skills among users. Further research is needed to investigate the long-term effects of using Euler's Project app in programming learning and its impact on career readiness.

1. **Problem Formulation**

* **Objectives**
* It offers a challenging collection of math and math problems that promote problem-solving skills and creativity.
* Promote interest in mathematics and computer science among students, teachers, and the general public.
* Foster a sense of community among participants by providing a platform for exchanging solutions, ideas, and strategies.
* Develop and demonstrate skills in programming, data analysis, and algorithm design.
* Contribute to advancing mathematics and computer science by providing a forum for exploring new ideas and techniques.
* **Scope**

The Euler Project is a community-based initiative to inspire and challenge individuals to explore the fascinating world of mathematics and computer science. Give participants a platform to solve challenging problems, hone their skills, and share their solutions with others. The project is open to people of all ages and skill levels and encourages collaboration and teamwork.

* **Feasibility Study**

**Market Analysis:**

The market for programming language practice apps is growing rapidly, with many users looking for tools to help them learn and practice programming.

The existing competition includes apps such as SoloLearn and Codeacademy, which offer similar features to Euler's Project.

However, there is still significant demand for new and innovative programming practice apps, especially those with a focus on specific programming languages.

Based on market analysis, the Euler's Project app has potential demand and opportunity for success.

**Technical Feasibility:**

The development team has enough knowledge in Android app development, programming languages, and database design, which are required skills for developing the app.

On top of that, the team is under guidance of Dr. Shrikant Mapari, who has been teaching Android Developed for quite a long time.

The technology infrastructure is readily available and affordable, with many development tools and software libraries available for free.

The app is technically feasible to develop within the proposed timeframe.

**Financial Feasibility:**

The proposed budget for the project is within reasonable limits and can be met with existing resources and tools.

Potential revenue streams include advertising, premium features, and in-app purchases.

Based on the projected costs and potential revenue streams, the app has financial feasibility.

**Operational Feasibility:**

The proposed project structure is feasible and scalable, with a development team and project manager leading the project.

Staffing requirements are reasonable and can be met with existing resources.

Operational processes such as user registration, question management, and database management are feasible to implement and maintain.

**Legal Feasibility:**

The project complies with intellectual property rights and licensing requirements.

The project team will ensure data privacy and security regulations are met.

Legal feasibility requirements are expected to be met with reasonable efforts.

**Timeframe:**

The proposed development and launch timeframe is feasible, given the availability of resources and existing expertise.

The project timeline includes sufficient time for development, testing, and debugging.

**Risks and Mitigation:**

Risks associated with compatibility with different Android devices, potential issues with the app's database, and legal and regulatory issues have been identified.

Mitigation strategies include thorough testing and debugging, effective project management, and compliance with legal and regulatory requirements.

* **Hardware and Software requirements**
  + Hardware Requirements:
    - Minimum Hardware Requirements:

- Minimum RAM: 1 GB

- Any SOC processor with 500 MHz processing per second

* + - Recommended Hardware Requirements:

- RAM: 2 GB

- SOC processor with 1 GHz

* + Software Requirements:

- OS - Android 5 or above

- Google’s PlayStore for updates and patch

1. **Proposed Methodology**

* **Problem-wording:** This project formulates complex mathematical and computational problems that require problem-solving skills and creativity.
* **Problem Propagation:** Issues are distributed through his website and other online channels for the Euler Project, making them accessible to a global community of participants.
* **Submit your solution:** Participants are encouraged to submit solutions to problems that our team of experts will evaluate.
* **Solution exchange:** Solutions are shared with the Euler project community via online forums and other platforms, where participants can learn from each other and share strategies and ideas.
* **Learning aids:** The project provides educational resources such as tutorials, lectures, and other materials to help participants develop their math and computer science skills and knowledge.
* **Cooperation:** Participants are encouraged to work collaboratively to solve challenging problems, promoting community and teamwork.
* **Recognition:** The project recognizes and rewards participants for successfully solving problems, providing further incentives for participation and performance.
* **Use Case/ERD/table structures/wireframes**

**Use Case:**

**Student Practice:** A student can use the app to practice programming language questions related to Python, Java, and JavaScript. The app will provide feedback and a score for each question, helping the student to identify areas for improvement.

**Test Preparation:** A user preparing for a programming language test or exam can use the app to test their knowledge and readiness. The app can provide a simulated test experience with a set of questions and a time limit.

**Skill Assessment:** A user can use the app to assess their programming language skills by answering a set of questions. The app will provide feedback and a score, indicating the user's proficiency level.

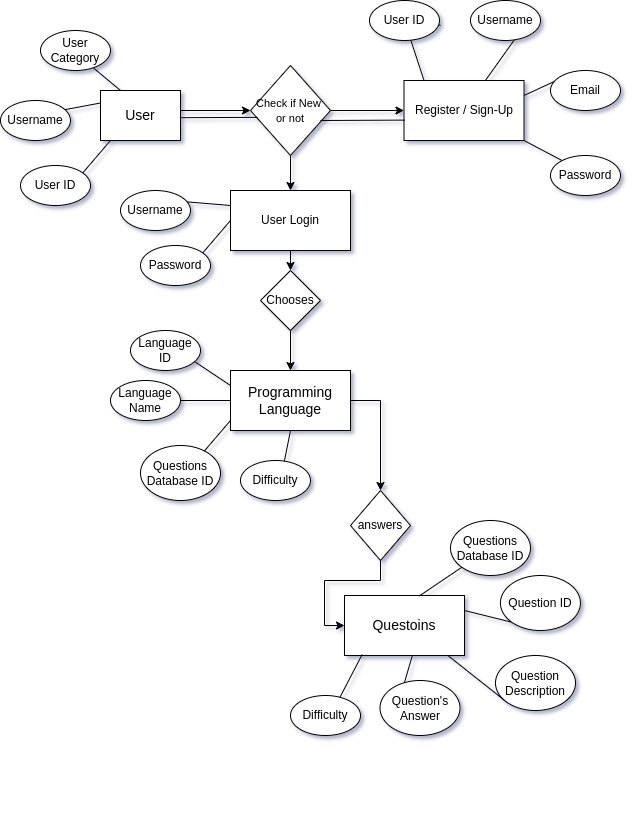
**Learning and Exploration:** A user can use the app to explore and learn new concepts related to programming languages. The app can provide explanatory text and examples for each question, helping the user to understand the concept behind the question.

**Competitive Challenge:** A user can challenge their friends or classmates to compete on a set of programming language questions. The app can provide a leaderboard, indicating the scores of each user and the winner of the challenge.

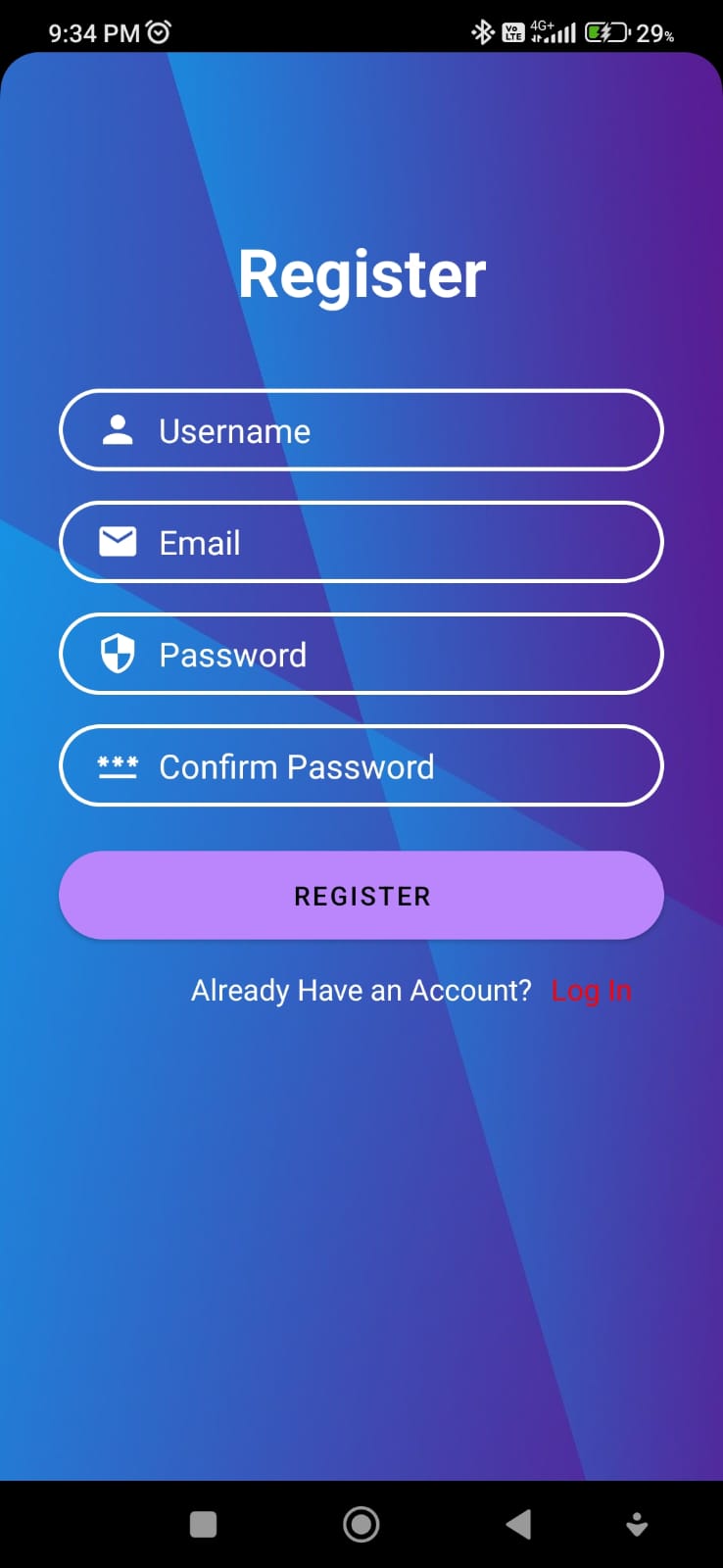
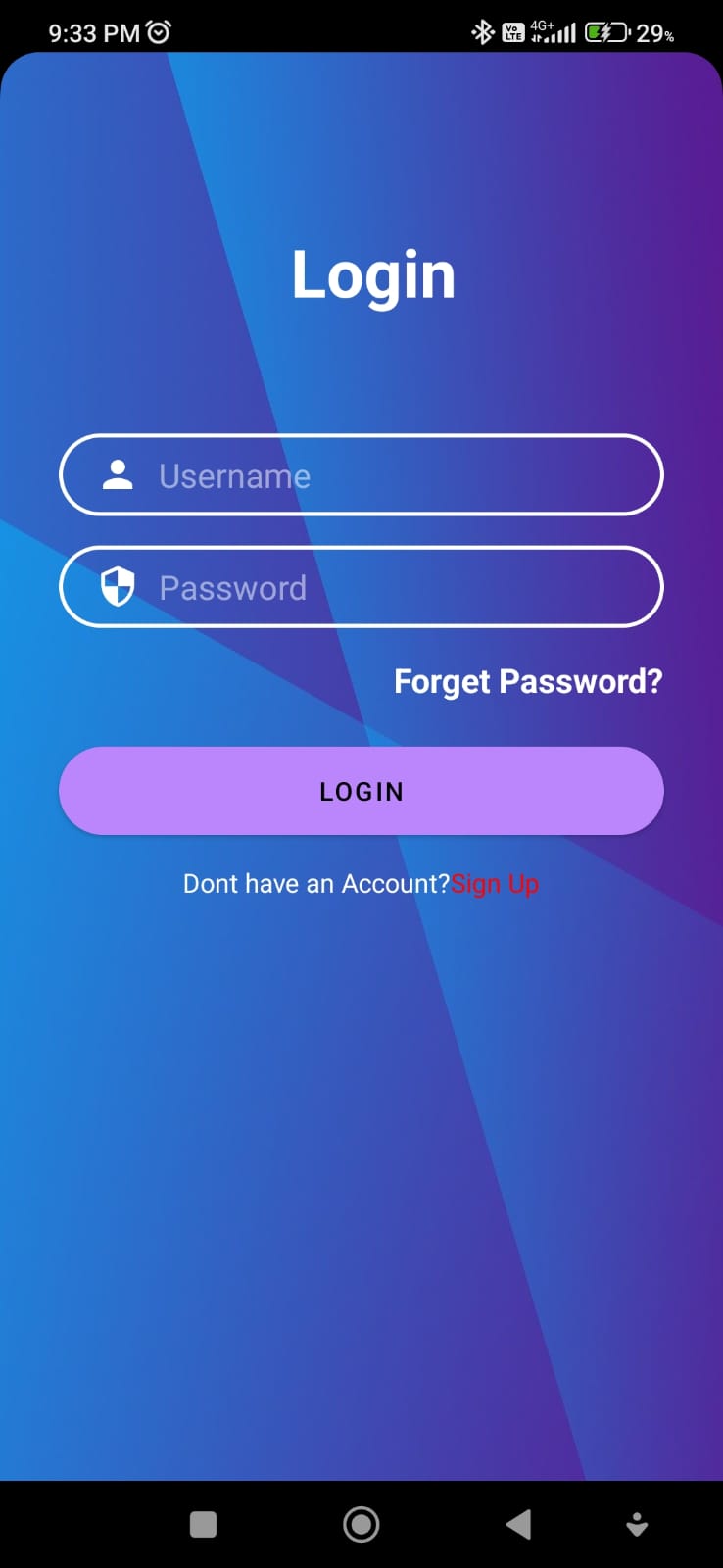
**Fun and Leisure:** A user can use the app to have fun and leisure time by testing their programming language knowledge. The app can provide a variety of interesting and engaging questions related to programming languages.

These are just some examples of the possible use cases of Euler's Project Android App. The app can serve various purposes and cater to the diverse needs of users.

**Entity Relationship Diagram:**



* **UI Design**





1. **Coding/Result**

**Database.java**

package com.example.eulerproject;

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.SQLClientInfoException;

public class Database extends SQLiteOpenHelper {

public Database(@Nullable Context context, @Nullable String name, @Nullable SQLiteDatabase.CursorFactory factory, int version) {

super(context, name, factory, version);

}

@Override

public void onCreate(SQLiteDatabase sqLiteDatabase) {

String qry1 = "create table users(username text,email text,password text)";

sqLiteDatabase.execSQL(qry1);

}

@Override

public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {

}

public void register(String username, String email, String password){

ContentValues cv = new ContentValues();

cv.put("username",username);

cv.put("email",email);

cv.put("password",password);

SQLiteDatabase db = getWritableDatabase();

db.insert("users",null,cv);

db.close();

}

public int logic(String username,String password){

int result = 0;

String str[] = new String[2];

str[0] = username;

str[1] = password;

SQLiteDatabase db = getReadableDatabase();

Cursor c = db.rawQuery("select \* from users where username=? and password=?",str);

if (c.moveToFirst()){

result = 1;

}

return result;

}

}

**HomeActivity.java**

package com.example.eulerproject;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import com.google.android.gms.auth.api.signin.GoogleSignIn;

import com.google.android.gms.auth.api.signin.GoogleSignInAccount;

import com.google.android.gms.auth.api.signin.GoogleSignInClient;

import com.google.android.gms.auth.api.signin.GoogleSignInOptions;

public class HomeActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_home);

}

}

**LoginActivity.java**

package com.example.eulerproject;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;

import android.content.Intent;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.QuickContactBadge;

import android.widget.TextView;

import android.widget.Toast;

import com.google.android.gms.auth.api.signin.GoogleSignIn;

import com.google.android.gms.auth.api.signin.GoogleSignInAccount;

import com.google.android.gms.auth.api.signin.GoogleSignInClient;

import com.google.android.gms.auth.api.signin.GoogleSignInOptions;

import com.google.android.gms.common.api.ApiException;

import com.google.android.gms.tasks.Task;

public class LoginActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_login);

EditText eduUsername, eduPassword;

Button button;

eduUsername = findViewById(R.id.inputEmail);

eduPassword = findViewById(R.id.inputPassword);

button = findViewById(R.id.btnlogin);

TextView btn = findViewById(R.id.tvsignUp);

button.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String username = eduUsername.getText().toString();

String password = eduPassword.getText().toString();

Database db = new Database(getApplicationContext(), "EulerProject", null, 1);

if (username.length() == 0 || password.length() == 0) {

Toast.makeText(getApplicationContext(), "Please fill all the Details", Toast.LENGTH\_SHORT).show();

} else {

if (db.logic(username, password) == 1) {

Toast.makeText(getApplicationContext(), "Login Successful", Toast.LENGTH\_SHORT).show();

SharedPreferences sharedPreferences = getSharedPreferences("share\_pref", Context.MODE\_PRIVATE);

SharedPreferences.Editor editor = sharedPreferences.edit();

editor.putString("username", username);

editor.apply();

startActivity(new Intent(LoginActivity.this, HomeActivity.class));

} else {

Toast.makeText(getApplicationContext(), "Invalid Username or Password", Toast.LENGTH\_SHORT).show();

}

}

}

});

btn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

startActivity(new Intent(LoginActivity.this, RegisterActivity.class));

}

});

}

}

**MainActivity.java**

package com.example.eulerproject;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.os.Handler;

import android.widget.TextView;

import com.example.eulerproject.RegisterActivity;

public class MainActivity extends AppCompatActivity {

Handler handler;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

handler = new Handler();

handler.postDelayed(new Runnable() {

@Override

public void run() {

Intent intent = new Intent(MainActivity.this,LoginActivity.class);

startActivity(intent);

finish();

}

}, 3000);

}

}

**RegisterActivity.java**

package com.example.eulerproject;

import static android.opengl.ETC1.isValid;

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.TextView;

import android.widget.Toast;

public class RegisterActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

EditText eduUsername, eduEmail, eduPassword, eduConfirm;

Button button;

TextView tv , btn;

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_register);

eduUsername = findViewById(R.id.inputUsername);

eduEmail = findViewById(R.id.inputEmail);

eduPassword = findViewById(R.id.inputPassword);

eduConfirm = findViewById(R.id.inputConformPassword);

button = findViewById(R.id.btnRegister);

btn = findViewById(R.id.tvLogin);

btn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

startActivity(new Intent(RegisterActivity.this,LoginActivity.class));

}

});

button.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String username = eduUsername.getText().toString();

String email = eduEmail.getText().toString();

String password = eduPassword.getText().toString();

String confirm = eduConfirm.getText().toString();

Database db = new Database(getApplicationContext(),"EulerProject",null,1);

if(username.length()==0 || email.length()==0 || password.length()==0 || confirm.length()==0){

Toast.makeText(getApplicationContext(),"Please fill all details",Toast.LENGTH\_SHORT).show();

}

else {

if (password.compareTo(confirm)==0){

if (isValid(password)){

db.register(username,email,password);

Toast.makeText(getApplicationContext(),"Registration Succesful", Toast.LENGTH\_SHORT).show();

startActivity(new Intent(RegisterActivity.this,LoginActivity.class));

}else {

Toast.makeText(getApplicationContext(),"Password must contain atleast 8 characters, having letter digit and special characters",Toast.LENGTH\_SHORT).show();

}

}else{

Toast.makeText(getApplicationContext(),"Password and confirm password didn't match",Toast.LENGTH\_SHORT).show();

}

}

}

});

}

public static boolean isValid(String passwordhere){

int f1=0,f2=0,f3=0;

if (passwordhere.length() < 8){

return false;

}else {

for (int p = 0; p < passwordhere.length(); p++){

if (Character.isLetter(passwordhere.charAt(p))){

f1=1;

}

}

for (int r = 0; r < passwordhere.length(); r++){

if (Character.isDigit(passwordhere.charAt(r))){

f2=1;

}

}

for (int s = 0; s < passwordhere.length(); s++){

char c = passwordhere.charAt(s);

if (c>=33&&c<=46||c==64){

f3=1;

}

}

if (f1==1 && f1==1 && f3==1)

return true;

return false;

}

}

}

**activity\_home.xml**

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

<androidx.constraintlayout.widget.ConstraintLayout 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=".HomeActivity"

android:background ="@drawable/bb">

<TextView

android:id="@+id/textView3"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="Hello World"

android:textAlignment="center"

android:textColor="@color/white"

android:textSize="48sp"

android:textStyle="bold"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_login.xml**

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

<androidx.constraintlayout.widget.ConstraintLayout 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="@drawable/bb"

tools:context=".LoginActivity">

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="13dp"

android:layout\_marginBottom="50dp"

android:text="Login"

android:textColor="@color/white"

android:textColorLink="#FFFFFF"

android:textSize="36sp"

android:textStyle="bold"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.13999999" />

<EditText

android:id="@+id/inputPassword"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginStart="32dp"

android:layout\_marginTop="16dp"

android:layout\_marginEnd="32dp"

android:background="@drawable/input\_bg"

android:drawableLeft="@drawable/baseline\_security\_24"

android:drawablePadding="10dp"

android:ems="10"

android:hint="Password"

android:inputType="textPassword"

android:paddingLeft="20dp"

android:paddingTop="10dp"

android:paddingRight="10dp"

android:paddingBottom="10dp"

android:textColor="@color/white"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.0"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/inputEmail" />

<EditText

android:id="@+id/inputEmail"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="64dp"

android:background="@drawable/input\_bg"

android:drawableLeft="@drawable/baseline\_person\_24"

android:drawablePadding="10dp"

android:ems="10"

android:hint="Username"

android:inputType="textPersonName"

android:paddingLeft="20dp"

android:paddingTop="10dp"

android:paddingRight="10dp"

android:paddingBottom="10dp"

android:textColor="@color/white"

app:layout\_constraintEnd\_toEndOf="@+id/inputPassword"

app:layout\_constraintHorizontal\_bias="1.0"

app:layout\_constraintStart\_toStartOf="@+id/inputPassword"

app:layout\_constraintTop\_toBottomOf="@+id/textView2" />

<TextView

android:id="@+id/forgetPassword"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="16dp"

android:text="Forget Password"

android:textColor="@color/white"

android:textSize="18sp"

android:textStyle="bold"

app:layout\_constraintEnd\_toEndOf="@+id/inputPassword"

app:layout\_constraintTop\_toBottomOf="@+id/inputPassword" />

<Button

android:id="@+id/btnlogin"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="24dp"

android:background="@drawable/btn\_bg"

android:backgroundTint="@color/white"

android:text="Login"

android:textColor="@color/black"

app:layout\_constraintEnd\_toEndOf="@+id/inputPassword"

app:layout\_constraintStart\_toStartOf="@+id/inputPassword"

app:layout\_constraintTop\_toBottomOf="@+id/forgetPassword" />

<LinearLayout

android:id="@+id/linearLayout"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="16dp"

android:gravity="center"

android:orientation="horizontal"

android:textAlignment="center"

app:layout\_constraintEnd\_toEndOf="@+id/btnlogin"

app:layout\_constraintHorizontal\_bias="0.0"

app:layout\_constraintStart\_toStartOf="@+id/btnlogin"

app:layout\_constraintTop\_toBottomOf="@+id/btnlogin">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Dont have an Account?"

android:textColor="@color/white" />

<TextView

android:id="@+id/tvsignUp"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Sign Up"

android:textColor="@color/red" />

</LinearLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_main.xml**

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

<androidx.constraintlayout.widget.ConstraintLayout 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:background="@drawable/bb"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<ImageView

android:id="@+id/imageView"

android:layout\_width="157dp"

android:layout\_height="110dp"

android:src="@drawable/logo"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.498"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

tools:ignore="ContentDescription,HardcodedText,MissingConstraints"

android:contentDescription="TODO" />

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="20dp"

android:text="Eulers Project"

android:textColor="@color/white"

android:textSize="24sp"

android:textStyle="bold"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="@+id/imageView"

app:layout\_constraintHorizontal\_bias="0.49"

app:layout\_constraintStart\_toStartOf="@+id/imageView"

app:layout\_constraintTop\_toBottomOf="@+id/imageView"

app:layout\_constraintVertical\_bias="0.015"

tools:ignore="HardcodedText" />

<ProgressBar

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="@+id/textView"

app:layout\_constraintStart\_toStartOf="@+id/textView"

app:layout\_constraintTop\_toBottomOf="@+id/textView" />

</androidx.constraintlayout.widget.ConstraintLayout>

**activity\_register.ml**

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

<androidx.constraintlayout.widget.ConstraintLayout 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=".RegisterActivity"

android:background="@drawable/bb">

<TextView

android:id="@+id/logo"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Register"

android:textColor="@color/white"

android:textSize="36sp"

android:textStyle="bold"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.13"/>

<EditText

android:id="@+id/inputUsername"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginStart="32dp"

android:layout\_marginTop="40dp"

android:layout\_marginEnd="32dp"

android:background="@drawable/input\_bg"

android:drawableLeft="@drawable/baseline\_person\_24"

android:drawablePadding="10dp"

android:ems="10"

android:hint="Username"

android:inputType="textPersonName"

android:paddingLeft="20dp"

android:paddingTop="10dp"

android:paddingRight="10dp"

android:paddingBottom="10dp"

android:textColor="@color/white"

android:textColorHint="@color/white"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/logo"/>

<EditText

android:id="@+id/inputEmail"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="16dp"

android:background="@drawable/input\_bg"

android:drawableLeft="@drawable/baseline\_email\_24"

android:drawablePadding="10dp"

android:ems="10"

android:hint="Email"

android:inputType="textEmailAddress"

android:paddingLeft="20dp"

android:paddingTop="10dp"

android:paddingRight="10dp"

android:paddingBottom="10dp"

android:textColor="@color/white"

android:textColorHint="@color/white"

app:layout\_constraintEnd\_toEndOf="@+id/inputUsername"

app:layout\_constraintStart\_toStartOf="@+id/inputUsername"

app:layout\_constraintTop\_toBottomOf="@+id/inputUsername"/>

<EditText

android:id="@+id/inputPassword"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="16dp"

android:background="@drawable/input\_bg"

android:drawableLeft="@drawable/baseline\_security\_24"

android:drawablePadding="10dp"

android:ems="10"

android:hint="Password"

android:inputType="textVisiblePassword"

android:paddingLeft="20dp"

android:paddingTop="10dp"

android:paddingRight="10dp"

android:paddingBottom="10dp"

android:textColor="@color/white"

android:textColorHint="@color/white"

app:layout\_constraintEnd\_toEndOf="@+id/inputEmail"

app:layout\_constraintStart\_toStartOf="@+id/inputEmail"

app:layout\_constraintTop\_toBottomOf="@+id/inputEmail" />

<EditText

android:id="@+id/inputConformPassword"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="16dp"

android:background="@drawable/input\_bg"

android:drawableLeft="@drawable/baseline\_password\_24"

android:drawablePadding="10dp"

android:ems="10"

android:hint="Confirm Password"

android:inputType="textPassword"

android:paddingLeft="20dp"

android:paddingTop="10dp"

android:paddingRight="10dp"

android:paddingBottom="10dp"

android:textColor="@color/white"

android:textColorHint="@color/white"

app:layout\_constraintEnd\_toEndOf="@+id/inputPassword"

app:layout\_constraintStart\_toStartOf="@+id/inputPassword"

app:layout\_constraintTop\_toBottomOf="@+id/inputPassword" />

<Button

android:id="@+id/btnRegister"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="24dp"

android:background="@drawable/btn\_bg"

android:text="Register"

app:layout\_constraintEnd\_toEndOf="@+id/inputConformPassword"

app:layout\_constraintStart\_toStartOf="@+id/inputConformPassword"

app:layout\_constraintTop\_toBottomOf="@+id/inputConformPassword"/>

<TextView

android:id="@+id/alreadyHaveAccount"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="16dp"

android:shadowColor="@color/white"

android:text="Already Have an Account?"

android:textColor="@color/white"

android:textSize="16sp"

app:layout\_constraintEnd\_toEndOf="@+id/btnRegister"

app:layout\_constraintStart\_toStartOf="@+id/btnRegister"

app:layout\_constraintTop\_toBottomOf="@+id/btnRegister" />

<TextView

android:id="@+id/tvLogin"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="8dp"

android:layout\_marginTop="16dp"

android:text="Log In"

android:textColor="@color/red"

android:textSize="16sp"

app:layout\_constraintEnd\_toEndOf="@+id/btnRegister"

app:layout\_constraintHorizontal\_bias="0.103"

app:layout\_constraintStart\_toEndOf="@+id/alreadyHaveAccount"

app:layout\_constraintTop\_toBottomOf="@+id/btnRegister" />

</androidx.constraintlayout.widget.ConstraintLayout>

1. **Testing**
2. **Further Scope Of Development**

**Badges:**

As users answer more questions correctly and reach certain milestones, they can be rewarded with badges. To implement this feature, the app could include a Badge entity to store information about each badge, such as its name, description, and criteria for earning it. When a user earns a badge, the app could display a notification and add the badge to the user's profile. To make the badge system more engaging, the app could also include a badge showcase where users can view their earned badges and strive to earn more.

**Leader-board:**

To make the app more competitive, a leaderboard could be added to display the top users based on their scores. To implement this feature, the app could include a Leaderboard entity to store information about each user's score and rank. The app could then periodically update the leaderboard based on the latest scores and display it in a separate screen or as a part of the home screen. To make the leaderboard more engaging, the app could also include features such as a search function to find specific users and the ability to challenge other users to beat their scores.

**Admin panel:**

An admin panel could be added to allow an administrator to manage the content and users of the app. To implement this feature, the app could include an Admin entity to store information about the administrator, such as their ID, username, and password. The admin panel could allow the administrator to manage user profiles, add or remove questions, categories, and difficulties, and view analytics about user activity and performance. To ensure security, the admin panel could require a separate login and could restrict access to certain features based on the administrator's role and permissions.

Implementing these features would require additional development effort and resources, but they could significantly enhance the engagement and retention of users in Euler's Project Android App. By providing rewards for achievement, fostering competition, and enabling better management of the app's content, these features could help the app become more appealing and valuable to its users.

1. **Conclusion**

In conclusion, the Euler's Project Android App developed by Anand Darshan and Dikshant Rajput under the guidance of Dr. Shrikant Mapari is an interactive and engaging learning tool that allows users to practice programming questions in Python, Java, and JavaScript. The app incorporates various features such as multiple-choice questions, hints, and explanations to enhance the user experience and facilitate learning.

Through the development of the app, the we have gained valuable experience in mobile app development, database design, and software engineering principles. The development process involved various stages such as requirement analysis, design, implementation, and testing, which were critical to ensure the app's functionality and usability.

The app's feasibility study has shown that there is a significant demand for such learning tools among students and professionals interested in programming. Additionally, the further scope of development discussed in the report, such as badges, leaderboards, and an admin panel, would enhance the app's functionality and engagement further.

Overall, the Euler's Project Android App has the potential to serve as a valuable resource for anyone interested in programming, providing an interactive and engaging learning experience. The project has achieved its objectives and could serve as a foundation for future development and improvement.

1. **References**

**-** youtube

- google

- w3schools

-https://projecteuler.net/



Date : 15th Dec 2022

Permission Letter

Dear Anand Darshan, 21030121015

With reference to the project topic idea discussion with regards to fulfilling the requirement of Bachelor of Computer Application batch 2021-2024, Sem IV Project, you have been given the permission to undertake a project from Dec 2022 to April 2023 with the topic Euler’s Project Android App. On successful completion of the project, you will receive a certificate from the SICSR. We approve the above-mentioned project title.

We wish you all the best for your project work.

Dr. Shrikant Mapari Dr. [Priti Kulkarni](mailto:priti.kulkarni@sicsr.ac.in)

Project Guide BCA Program Coordinator