



Daffodil
International
University

Project Report

Course code : CSE335

Course Title : Pervasive Computing and Mobile App
Development Lab

Submitted to:

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Project Title:

Multi-Functional Android App: Calculator, Game, Converter, and Expense Tracker.

Key Functions & features:

1. Welcome Page:

For welcoming purposes, I have used an image of our beloved Daffodil International University. And a text of appreciation. By pressing the text, the user can go to the authentication page.

2. User Authentication:

Users can see two buttons which are texted with login and registration. After pressing the buttons they can see the login/registration form in the same activity. Because I have used fragments in this activity.

2.1. *Registration:*

For registration purposes I have used the firebase realtime database. After getting user input, I have stored those data into a realtime database under “Users” root.

2.2. *Login:*

For login purposes I have used manual string matching. I retrieved user data such as user id and password which user gave during registration processes. Then matched with the user given id and password which user gave during login procedure. If both given and retrieved id and password matches with each other then the user can proceed to further application otherwise the user will face a toast.

3. Choice List:

Here users can see a dropdown list, where all other activities are listed. I have used a spinner here to show the list of activities. After clicking these options users will go to that activity.

4. Activities:

4.1. *Guess the number:* This is a game, where system will guess a number then user can submit a number, if number is bigger than the system number, there will be a toast, which will ask user to set a smaller number, if number is smaller than the system number, there will be a toast, which will ask user to set a bigger number. Otherwise, toast will show congratulations, message and count of how many attempts needed by the user to solve the problem.

4.2. *Matrix Calculator:* Users can use addition operation, subtraction operation and multiplication operations of two 2x2 matrices.

4.3. *Currency Converter:* Users can be able to convert USD, EURO, RUBBLE using this activity. It will allow users 3 types of currencies and 6 types of conversion.

4.4. *Expense Tracker:* It has two portions. By going to the Finance portion users can add their expenses according to corresponding months. And by going to the Accounting portion users can see the expenses of that corresponded months.

Tools:

XML:

- Linear Layout
- TextView
- ImageView
- Edit Text
- Button

Java:

- Activity
- Intent
- Spinner
- Fragment
- Firebase

Code: <https://github.com/lhsan-nahid/androidStudioProject1>

Live Demo: <https://youtu.be/95sfhKz9cFw>