

University of the Free State

**Department of Computer Science and Informatics**

QwaQwa Campus

**CSIQ 3784**

**Software Engineering**

**Project**

**Duration:** 1 August – 20 October 2024

**Marks: 90**

**Assessor: Mr B Sebastian Moderator**: **Mr T Lesesa**

**Android and Web applications for Bank Transactions for University of the Free**

**State (Qwaqwa campus) Bank**

The University of the Free State, QwaQwa campus operates a bank for their students and staff members. This bank allows their users to easily get quick access to cash and do transactions, and prides itself for providing the best personal banking services for the University community. Therefore, developing a client- server model between web and mobile applications will make life easier and happier.

The online banking transactions facilities provides convenience for the users. It overcomes the disadvantages of the traditional queuing system.

Develop a Web and mobile (Android based) applications, where daily bank transactions are recorded. The user can log into the applications to perform banking transactions. Enter relevant information like name, surname and **student number for students**. Enter name, surname , passport number or ID number for s and enter name, surname and personal/employee number for UFS staff. Information captured electronically and stored securely within a database.

The system must have following roles namely; ***Admin login*, Consultant login, finical adviser login, Client or customer login(user login which are students and staff)**, Admin can login, manage user login, viewing the user status, creating, adding, updating, and deleting user’s bank accounts personal information, generate report, and authorise consultants to perform their duties, consultants can manage user login, viewing the user status, creating, adding, updating, and deleting user’s bank accounts personal information, accept deposit, assist in withdraw money(when a client do transactions in person), generate report. Finical adviser can view user status. User login can view own status, do transaction between own accounts.

**Roles:**

The system comprises of 4 major modules with their sub-modules as follows:

1. **Admin**

* **Manage customers/clients(user):** Admin can**, manage user login**, creating, adding, **updating**, and deleting user’s bank accounts personal information.
* **Manage consultants**: Authorise consultants to perform their duties and generate report.
* **View**: Consultants performance, and reports generated by them.
* **View Users:** Admin can view user status (Bank accounts and personal information)
* **View Orders:** Admin can view finical adviser advice and inputs.

Cunsltant performance(total deposit made by client),(Report total: transered and received amount and number , total number cliets, total number new clients)

1. **Consulatant**

* **Login:** Consultant can login using credentials.
* **Change Password:** They assist to change customer/clint (Users) password.
* **Manage customers/clients(user):** Manage user login, creating, adding, updating, and deleting user’s bank accounts personal information and **generate reports**
* **View:** They can view and update details of customer/clint (Users)
* **Reviews:** They can also view all the Ratings and reviews given by customer/clint (Users)

1. **Finical Advisor**

**Login: L**ogin using credentials.

**Manage:** View banking accounts and provide advice.

1. **Customers/clinents (Staff and students)**

* **~~Register~~:** User can register and get login
* **~~Login:~~** User can login using credentials.
* **Profile:** User can set their profile.
* **Change Password:** User can change their password which used to access their accounts through web and mobile application.
* **Menu:** Facility **to view balance, personal information, account information, transfer funds between their accounts.**
* **Notification -** Notifications when any of the menu items are done.

The main idea for this project is to develop a system that can be used campus banking facility online.

Following platforms are required:

**• Web application**

**• Mobile application (Android)**

**• Database**

The project architecture must be a **client-server.**

The communication between devices, web application and database server must be **SSH** (**alternatives are welcome, but subject to approval**).

Instructions and Project timeline:

* Use the following technologies to develop your app

**Android:** API 24 Android 7.0(Nougat or above versions

**Website**: MS Visual Studio 2022(VS2022) with .NET 5.0MVC and C#

Bootstrap 5 to set the presentation aspects of the web application.

**Database**: Applicable databases like Microsoft SQL server 2019 and Firebase

* This is an individual project, therefore, students should present their own unaided work.
  + Please note that you must present (demonstrate) your work, and marking will be done using a rubric. Therefore, no marks will be given only for code.
  + However professional coding standards should be adhered to, and no reproduction of online code or existing projects will be accepted.
  + Adhere to the following instructions and timeline. Failure to do so will result in deduction of marks or an incomplete.
  + The details of this project are intentionally limited, without changing the basic requirements of the project, use your creativity to obtain 10% of the project’s total marks.

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| **Component** | **Instruction** | **Due date** |
| Proposal | Prepare few PowerPoint slides for proposal presentation | **12-08-2024, 16-08-2024**  **(List of students presenting on above two different will be available on Bb)** |
| Database | Design a suitable database and implement it for developing apllication | **30-08-2024**  **(This date is to put you on track, but nothing to submit it)** |
| Web | * Develop a dashboard web application that will be used to manage banking online system. The administrator should be able manage and do roles achieved by other roles. * Consultant should be able to perform assigned roles * Finical advisor should be able to perform assigned roles * Client/customer(user) has to achieve their needs. | **24 -09-2024** |
| * Students must submit their presentation in the form of PowerPoint recorded video and submit it in the Blackboard. The video must have web application | **24 -09-2024**  **(Submit it before or at 11:59 pm, which is midnight between 24th September end and 25th September starts)** |
| First Presentation | * Presenting your work by demonstrating up until developed Web application for assessors to assess it. | **25 -09-2024 (students presenting on this day will be available on Blackboard)**  **26-09-2024(students presenting on this day will be available on Blackboard)**  27-09-2024(students presenting on this day will be available on Blackboard) |
| Mobile app | Create the app, using Android Studio that will be used for banking purpose.by administrator, consultant, finical advisor and customer/client (user who are students and staff). This app will be the used to get their required banking transaction and information. The app should be able to perform all functions of the website and need to be communicated between your developed website and mobile application. | **20-10-2024** |
| Project Submission | * Students must submit their presentation in the form of PowerPoint recorded video. And submit it in the Blackboard. The video must have both developed web and mobile application * **Students submitted their work in the Blackboard are one will be allowed to present. The student failed to submit their work on or indicated deadline will obtain Incomplete**. | **20-10-2024**  **(Submit it before or at 11:59 pm, which is midnight between 20th October end and 21st October starts)** |
| Final Presentation | * Students should present their own unaided work. * Presenting your work by demonstrating fully developed working application Android application for assessors to assess it. | **It is during the first week of 2024 Main-End -year examination. Dates list of students presenting on different dates will be provided on the Blackboard as time comes closer** |

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