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## Introduction

As an IT software programmer at Tanganyika Technologies, I have been tasked with a critical responsibility: designing and implementing a comprehensive solution for managing employee leave records. Leveraging my expertise in Linux Shell Scripting, I embarked on a mission to develop a robust **"Employee Leave Management"** application tailored to our company's unique requirements.

With the goal of empowering both employees and supervisors, I methodically designed a system that allows for easy access to vital capabilities. Employees may easily log onto the system, update their personal information such as names and birth dates, and request for leave by defining the duration and cause for their absence.

Furthermore, supervisors have the tools they need to efficiently review and handle leave requests. They can easily approve or reject leave applications, ensuring prompt decisions and effective leave management processes. Supervisors can also print leave records, which simplifies paperwork and record-keeping operations.

Through hard work and dedication, I created a simple leave management solution that improves organizational efficiency and employee happiness. This initiative demonstrates my commitment to using technology to solve real-world business problems and produce positive results for Tanganyika Technologies.

## Technology Stack

I did the assignment on my MacBook, with Visual Studio Code (VSCode) as my primary programming environment. With its simple UI and robust functionality, I found VSCode to be a fantastic tool for creating and testing shell scripts.

Throughout the project, I used VSCode's built-in terminal to run commands and shell scripts right from the editor. This expedited my development workflow and allowed me to quickly iterate on the code while keeping everything organized in one workspace.

Furthermore, VSCode's extensive ecosystem of extensions was useful in increasing my productivity. I installed Shell Scripting and Git integration extensions, which enabled syntax highlighting, code completion, and version control, thereby increasing my development experience.

Overall, the combination of my MacBook and VSCode provided me with a smooth and efficient working environment, allowing me to complete the project and produce a strong employee leave management system suited to the company's requirements.

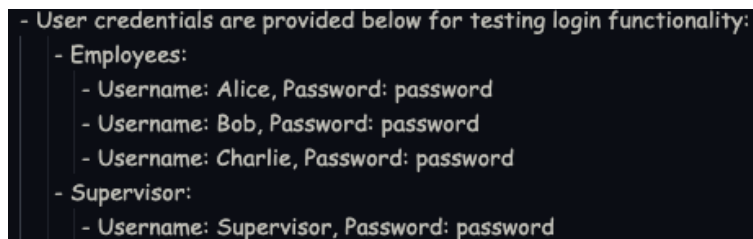
## The Architecture

I created my system and made each functionality to have a file script, with having the **main\_dashboard.sh** as the main file.



## Dummy Database

For testing, this script uses a fake database to replicate employee leave information.



## How to Run the Scripts

To run all the scripts simultaneously, run the main dashboard script (**main\_dashboard.sh**). Here's how you can accomplish it:

Ensure that all scripts have execution rights. If not, you can grant them using the **chmod** command;

```
mac@MoneiBakangAir Assignment % chmod +x main_dashboard.sh employee_login.sh supervisor_login.sh employee_menu.sh apply_leave.sh edit_p  
ersonal_details.sh supervisor_menu.sh view_leave_applications.sh approve_leave_application.sh reject_leave_application.sh
```

After you've provided execution rights, you may launch the main dashboard script (main\_dashboard.sh). Navigate to the directory containing your scripts in the terminal and execute them:

```
mac@MoneiBakangAir Assignment % ./main_dashboard.sh
```

Then the main\_dashboard.sh will be shown;

```
-----  
| EMPLOYEES LEAVE MANAGEMENT |  
| 1. Employees Login         |  
| 2. Supervisor Login        |  
| 3. Exit                    |  
-----
```

Enter your choice: █

## EMPLOYEE

### Employee Login

```
=====
| EMPLOYEE LOGIN |
=====
Enter your username: Alice
Enter your password: █
```

### Successful Login

```
=====
| EMPLOYEE MENU |
=====
| 1. Edit Personal Details |
| 2. Apply for Leave      |
| 3. Logout               |
=====
Enter your choice: █
```

### Unsuccessful Login

```
=====
| EMPLOYEE LOGIN |
=====
Enter your username: Lecture
Enter your password:
Authentication failed. Please try again.
```

### Editing Personal Details

```
=====
| EDIT PERSONAL DETAILS |
=====
Enter your username: Alice
Enter your password:
Current Name: Alice
Enter new name (leave blank to keep current): Duncan
Name updated successfully.
Current Date of Birth: 1990-01-01
Enter new date of birth (YYYY-MM-DD) (leave blank to keep current): 2024-02-28
Date of Birth updated successfully.
Updated Details:
Name: Duncan
Date of Birth: 2024-02-28
```

## Apply For Leave

```
=====
| APPLY FOR LEAVE |
=====
```

```
Enter leave duration (e.g., 5 days): 4
```

```
Enter reason for leave: I am sick
```

```
Leave applied for 4 days due to: I am sick
```

```
Leave application submitted successfully.
```

## SUPERVISOR

### Supervisor Login

```
=====
| SUPERVISOR LOGIN                                     |
=====
Enter your username: supervisor
Enter your password: █
```

### Successful Login

```
=====
| SUPERVISOR MENU                                     |
=====
| 1. View Leave Applications                         |
| 2. Approve Leave Application                       |
| 3. Reject Leave Application                       |
| 4. Logout                                         |
=====
Enter your choice: █
```

### Unsuccessful Login

```
=====
| SUPERVISOR LOGIN                                     |
=====
Enter your username: NewSupervisor
Enter your password:
Login failed. Please try again. █
```

### View Leave Applications

```
=====
| VIEW LEAVE APPLICATIONS                             |
=====
Leave Applications:
- Alice - 5 days - Vacation
- Bob - 3 days - Sick leave
```

### Approve Leave Applications

```
=====
| APPROVE LEAVE APPLICATION                           |
=====
Leave Applications:
- Alice - 5 days - Vacation
- Bob - 3 days - Sick leave
Enter the leave application to approve: Alice
Leave application 'Alice' approved successfully.
█
```



## Reject Leave Application

```
=====
| REJECT LEAVE APPLICATION                               |
=====
Leave Applications:
- Alice - 5 days - Vacation
- Bob - 3 days - Sick leave
Enter the leave application to reject: Bob
Leave application 'Bob' rejected successfully.
```