University Of Rwanda-Huye Campus

College of Business and Economics

School of Business

Department of BIT (Y2) Group 3 (Team 8)

Module Title: Advanced programming in java

ADVANCED JAVA PROGRAMMING PROJECT

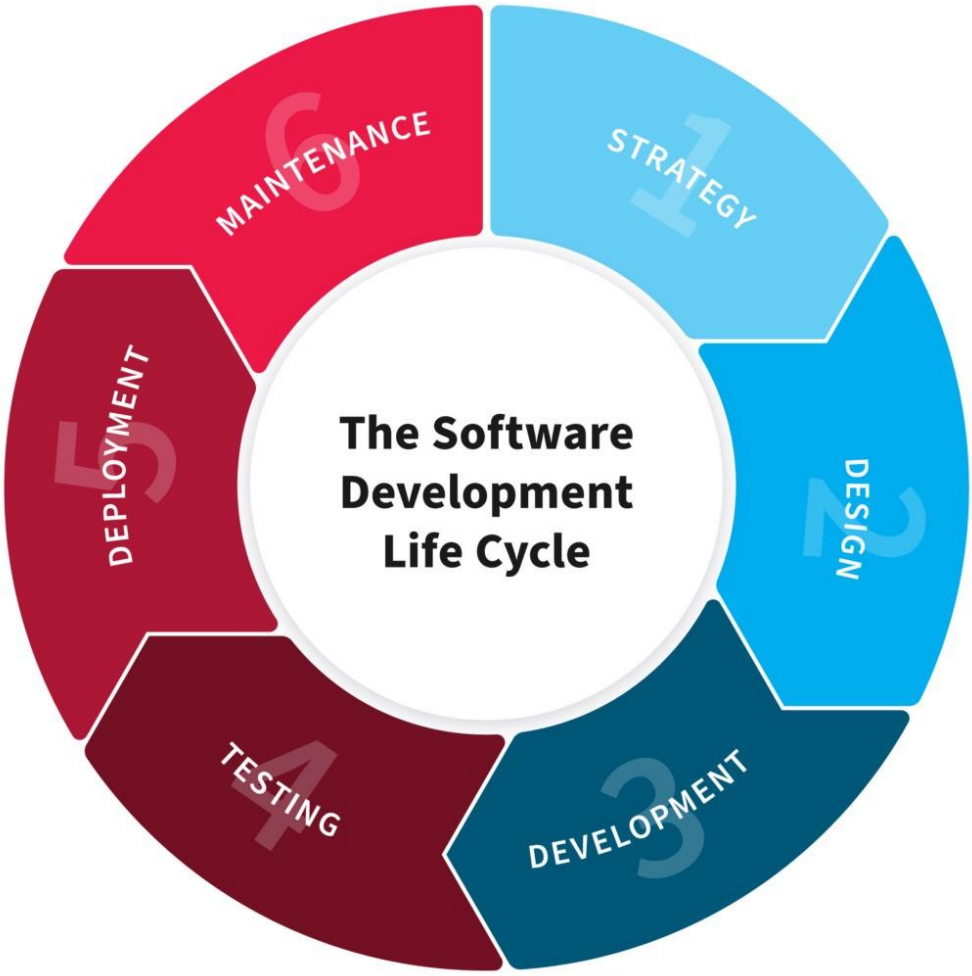
NAME: **NSHUTI Samuel**

REG NO: **221005368**

CLASS NO: **11**

PROJECT NAME: **Employee's Information Management System**

ADVANCED JAVA PROGRAMMING PROJECT REPORT



1.PLANNING

The project is named Employee's Information Management System. It's a software project of managing the employee's information like the registration of employees and the attendance. System manager will be able to view, add, edit or delete the employees accordingly. He will also be able to view the attendance list and he can print the document for the report.

On the side of the employee will be able to do his/her attendance in the system. The system is accessed by only the system manager (Administrator) and employees. To enter into the system, you have to have an account in the database user accounts which are operated by the system manager.

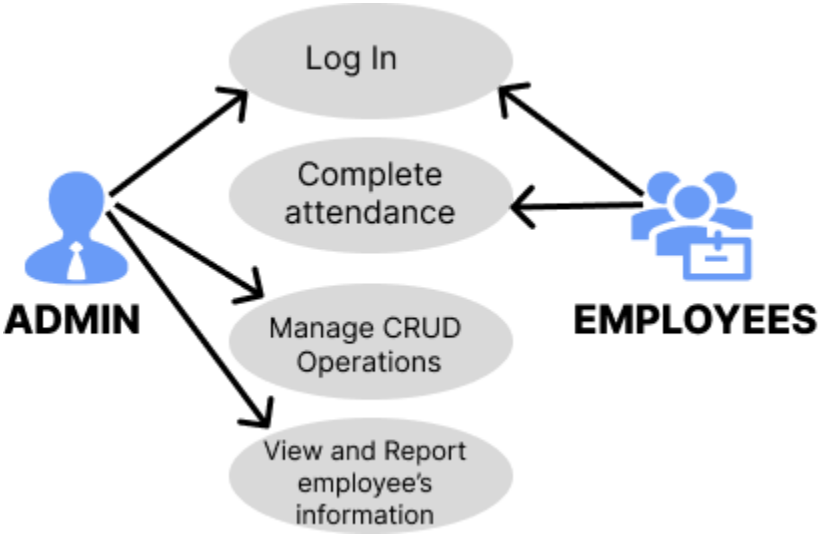
This project has goals and objectives of enhancing easy ways of managing new and existing employee's information with timely, effective, quick and secure storing of employee's information, improving employee's accountability and increasing accessibility of that information.

This project is going to solve the problems such as wasting time during correcting the employee's information, low-level of employee's accountability (being served on all things especially their attendance), difficult and risky physical storing of information and the administrator couldn't do anything out of the office.

So, this system is coming up to solve those problems and increase the performance and better working environment.

2. Design

The system will be accessed by both administrator and registered employees:



The system has the following requirements:

Technical:

- Java application by using Apache NetBeans IDE.
- XAMPP Server and MySQL database

Functional:

- The system will require you to log in.
- The system will allow the administrator to do CRUD (create, read, update and delete) operations to employees.
- The system will allow the employee to do attendance
- The system will allow the administrator to print employee's information for a report.

Users will interact with the system as follows:

The system starts with a login page where the user will need to log in either as admin or employee account that matches the account in the database.

If the user is the admin and his inputs meet what is kept in the database then he will be guided or directed to the system dashboard where he can access dashboard features/functions such as view employees (here he can view the employee by search), add employees, view the attendance list of the employees and he can log out as well.

If the employee is the one who logged in from the login page, he will be directed to the attendance page where he will enter his credentials for his attendance and submit them.

3. Development

The Employee's Information Management System project was developed by APACHE NETBEANS 15 as Integrated Development Environment (IDE), XAMPP Server and MySQL as database management system (DBMS).

Database installation:

- We have created the database and called it 'employeemgt'.
- We have created the tables and their fields respectively:
    - **employee_info**: This table receives and stores the employee's information both old and new comers after they are registered into the system.
    - **attendancy**: This table receives and keeps the records of the employee's attendances.
    - **users:** This one contains the allowed users (Admin and registered employees) to access the system to ensure the security and authenticity of the system.
- We have created relations between the tables by setting up some fields with primary key, auto increment and others with foreign keys.

Front-end installation:

- We have created a new Java application project for our system.
- We started by doing user interface design (**UI Design**) by using NetBeans forms and palette-Java Swing to add components to the forms. The designed pages are login, home, register, attendance, attendance list and view(employees) page.

- After ending up the UI Design, we come up with the **coding** of the system.
- During coding we have used the following libraries:
    - **JDK 11** to create Java-based applications.
    - **MYSQL-CONNECTOR-JAVA-5.1.15-BIN.JAR** to provide connectivity between java application and MySQL database.
    - **RS2XML.JAR** to display the data in a table format.
    - **AbsoluteLayout.Jar** to allow placement of components in absolute positions

4.Testing

Testing stage was planned to be conducted through code quality, unit, integration, performance, security, acceptance and nonfunctional testing to check whether the system meets the project requirements or not.

During the testing we have found some bugs and defects, for example:

- Syntax errors
- Validation errors

All these errors caused the system to malfunction according to the requirements but those errors have been solved by correcting the syntax and adding validations respectively to the database.

This stage keeps pending as the feedback is given due to wishes of the system users to improve the performance and functionalities.

5.Deployment

The installation, testing and performance monitoring were conducted locally on the computer used for developing the project by running the project and checking the behavior of the project functionality and performance if they meet requirements.

Each page and form were validated and verified as well as checking the database if it's responding to what is being done in the IDE.

Beyond that the project has been deployed to GitHub to allow availability and accessibility of the project source codes on the internet.

To use the deployed source codes from the GitHub to local computer, we can follow the following process:

- Download and install Java Development Kit (JDK), Apache NetBeans IDE and MySQL.
- Then in IDE, click on team, Git and Clone then paste the repository URL and fill the GitHub profile credentials, then okay.
- Checking if all required libraries are well installed.
- Well setting of the MySQL database.
- Run the project and check if it's running well as expected to the local computer.

6.Maintenance

Establishing periodic reviews and updates based on user feedback is the way to be used for maintaining the system with aim of better performance and functionality.

Some activities to be done during this stage are:

- ➔ Bugs and defects fixing.
- ➔ Setting up continuous monitoring.
- ➔ Upgrading the system application to the newer version.
- ➔ Adding new features to the software application.

To sum up, this Employee's Information Management System will give the solutions for easy and smart managing of employee's information and well storing of that information.

By NSHUTI Samuel 221005368