Employee Registration System

Group3: - Sebastian Dakey, Niyomwungeri Parmenide Ishimwe, Himbaza Jules Bienvenue

Problem Statement

An employee registration system is a technology solution used to enter and maintain the records of employees within an organization. Employees are the backbone of the company; hence it's important to ensure the effectiveness and efficiency of employee data and ensure they are accurate, complete, and protected. Employee management systems, for example, are used to ensure compliance with regulatory requirements. Given that these systems allow employers to enter employee information quickly, track engagement, and generate reports and insights, it is easy for employers to comply with regulations any time regulators show up [1]. In this project, we designed and implemented an employee registration system to allow employers to onboard employees easily and manage their information.

Requirement and Analysis

Functional Requirements
- The system should allow a user to enter a new employee information
- A user should be able to view key information about every employee in the organization
- A user should be able to view basic statistics of all the employees in the organizations

Non-functional requirement
- The system should be reliable
- The system should be easy to use
- The system must have a high-quality performance

System Architecture
In developing the project, we used the java programming language making use of its libraries as well as creating our own custom classes. Below are the classes we created and used for the project.
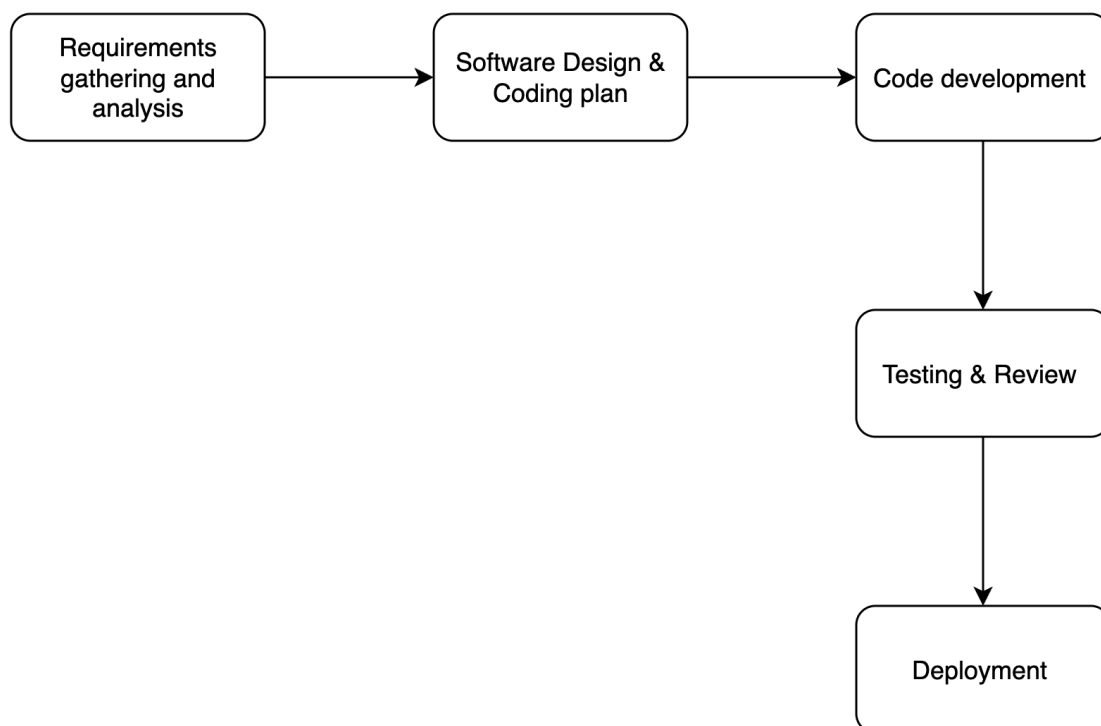- **Employee Class** - the employee class contains all the attributes and methods pertaining to an employee. For example, some of the employee attributes include first name, last name, date of birth among others. The methods included those to calculate an employee's tenure, calculate age, the respective get and set methods.
- **EmployeeDatabase Class -** This class contains the database (hashmap) for storing the details of employees. It contains methods for creating employees, getting employees and their attributes and generating basic statistics about the information of the employees in the database (hashmap)
- **EmployeeRegistration Class** - This class contains the graphical user interface that enables employee registration.

- **DisplayEmployee Class** - This class also contains the graphical user interface that displays information about employees in the system showing key information such as name, position, tenure among others.
- **DisplayEmployeeStats Class -** This class contains the graphical user interface that enables basic statistics of employee data to be shown.
- **Welcome Class** - This class has a graphical user interface that contains buttons leading to employee registration, display of employee information and basic statistics of an employee.

Methodology

We employed the agile methodology of software development. Hence, our development cycle was iterative, making changes where necessary. Our work was done in manageable and small increments. This made it possible to accommodate changing requirements as we developed the code.

Below is the diagram showing the steps used in developing the project.

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┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│ Requirements │      │ Software     │      │ Code         │
│ gathering and│ ───► │ Design &     │ ───► │ development  │
│ analysis     │      │ Coding plan  │      │              │
└──────────────┘      └──────────────┘      └──────────────┘
                                                   │
                                                   ▼
                                            ┌──────────────┐
                                            │ Testing &    │
                                            │ Review       │
                                            └──────────────┘
                                                   │
                                                   ▼
                                            ┌──────────────┐
                                            │ Deployment   │
                                            └──────────────┘
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Plan for future work

For future project development, we intend to add the following features to make the system even more robust.

- Sign-up/sign-in feature
- Improve the UI
- Time attendance and leave management
- Self-service portal to allow employees to update their information as when it changes
- Employee database management

References

[1] "Importance, Benefits, & Types Of Employee Management System." https://empmonitor.com/blog/employee-management-system/ (accessed Nov. 23, 2022).