Human Resource Management System

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This Documentation submitted in partial fulfillment of the requirements for the degree of
Master of Science
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DEDICATION

Every challenging work needs self-efforts as well as the guidance and support of the elders especially the ones who are close to our hearts. My humble efforts are dedicated

TO

My parents and Respected and honorable Teachers who support me financially and give me courage.

Acknowledgement

Foremost,I am grateful to the Allah for the good health and well-being that were necessary to complete this project. I am taking the opportunity to express my sincere gratitude to my supervisor Mr. ABDUL QADUS ABBASI for the continuous support of my master's study and Project, for his patience, motivation, enthusiasm, and immense knowledge. His guidance helped me in all the time of my project and writing this thesis. The door to his office was always open whenever I got into a trouble or had questions about my project. I could not have imagined having a better supervisor and mentor for my final year project. This project could not have been accomplished without his support and guidance.

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GHULAM MUHAYYUDIN

ABSTRACT

Human Resources Management also deal with the facilities and requirements the Human Workforce are availing and need for their working process and carrier growth. It used to act as a bidirectional process flow which increase the "Workforce" and "Senior Management" and collaborate everybody's requirements in a solution space and help to provide a better and value added service or outcome to customer or client of the organization. To make a human resource department more effective and efficient new technologies are now being introduced on a regular basis so make things much simpler and more modernized. One of the latest human resource technologies is the introduction of a Human Resources Management System this integrated system is designed to help provide information used in HR decision making such as administration, payroll, recruiting, training, and performance analysis. Human Resource Management provide the optimal ways and proposed the suitable solution towards the needs of organization to manage the "Human Workforce Optimally" and mapped the particular skill set in proper field such as in "Production Field" (such as provide skilled and sufficient human resources developing a product according to market need and market competencies wit in require time limit and quality), "Project Field" (provide skilled and sufficient human resources whose skill sets and competencies are mapping towards client requirement and project technical and other needs), "Service and Operational Field" (provide skilled and sufficient human resources whose skill sets and competencies are mapping towards finding out a solution space and resolve that within time frame for client or customer or for self business need) , "Sales Field"(Such as Promotional Product Branding and finding out the market opportunities and customer interaction and sales dealing)or any other areas inside (such as arrange or maintain required infrastructure for Organizational Operation; "RESOURSE AND FACILITY MANAGEMENT Team or RFM team are the best example in this case) or outside the organization(Such as interact with client or customer and finding out and crystallize their interaction; Consultants are the best example of outside entities whose skill and operation can be mapped and managed by Human Resource Department) .

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INTRODUCTION

Human Resource Management System:

1.1 Introduction

"Human Resource Management System": HRMS could be a mix of varied system parts and processes that helps to create a bridge between human resource management and data technology through HR package. Earlier, the client–server design develop within the late Eighties, respective time unit processes of automation were downgrade to the computers that might handle huge amounts of knowledge agreements. In result of the high capital investment it is required to shop for computer code program properly, these internally-developed HRMS were restricted to organizations that possessed an oversized quantity of capital. The arrival of Application Service supplier, client–server, and computer code as a Human Resource Management Systems or Seas Service enabled more and more such systems of high management body. Presently Human Resource Management Systems are:

- HR management Information system
- Benefits Administration
- Work Time
- Appraisal performance
- Payroll
- Employee Self-Service
- Performance Record

The first payroll module automates pay method by gathering information on worker time and group action, shrewd varied deductions and taxes, and generating periodic pay cheques and worker tax reports. Information is usually fed from the human resources and time keeping modules to calculate automatic deposit and manual cheque writing capabilities. This module will embrace all employee-related transactions similarly as integrate with existing monetary management systems. The time period module gathers standardized time and work connected efforts. the foremost advanced modules give broad flexibility in knowledge assortment ways, labor distribution capabilities and knowledge analysis options. analysis and potency metrics square measure the first functions.

The edges administration module provides a system for organizations to administer and track worker participation in benefits programs. These usually cover insurance, compensation, share and retirement.

The time unit management module may be a part covering several alternative time unit aspects from application to retirement. The system records basic demographic and address information,

selection, coaching and development, capabilities and skills management, compensation designing records andalternative connected activities. Forefront systems give the power to "read" applications and enter relevant information to applicable information fields, apprise employers and supply position management and position management. Human resource management perform involves the achievement, placement, evaluation, compensation and development of the workers of a company. Initially, businesses used computer based information systems to:

- Pursue talent management.
- Maintain personnel records.
- Produce pay checks and payroll reports.

Online recruiting has become one amongst the first strategies utilized by time unit departments to garner potential candidates for out there positions inside a corporation. Talent Management systems usually encompass:

- Recruiting through company-facing listings.
- Analyzing personnel usage within an organization.
- Identifying potential applicants.
- Recruiting through online recruiting sites or publications that market to both recruiters and applicants.

The significant price incurred in maintaining associate organized accomplishment effort, crossposting at intervals and across general or industry-specific job boards and maintaining a competitive exposure of availabilities has given rise to the event of a frenzied person following System, or 'ATS', module. The coaching module provides a system for organizations to administer and track worker coaching and development efforts. The system, unremarkably known as a 3 Learning Management System if a standalone product, permits 60 minutes to trace education, qualifications and skills of the workers, yet as outlining what coaching courses, books, CDs, internet primarily based learning or materials area unit out there to develop that skills. Courses will then be offered in date specific sessions, with delegates and coaching resources being mapped and managed among constant system. subtle LMS permit managers to approve coaching, budgets and calendars aboard performance management and appraisal metrics.

The worker Self-provider module lets in team of workers to impeach unit of time linked facts and carry out a few unit of time transactions over the gadget. group of workers should question their institution action document from the machine at the same time as no longer asking the records from unit of time employees. The module additionally lets supervisors approve O.T. requests from their subordinates through the system whilst no longer overloading the assignment on unit of time branch. Many businesses have long past beyond the traditional capabilities and evolved human useful resource management records structures, which support recruitment,

selection, hiring, process placement, performance appraisals, worker advantage evaluation, health, protection and protection, at the same time as others integrate an outsourced Applicant monitoring system that contains a subset of the above.

1.2 Motivation of the project

n most organizations, the refrain is that a single employee is unmotivated, and as a result, his or her performance has suffered. This is why businesses spend a lot of money on training sessions and leisure activities to keep their employees motivated. Motivation can be described as an individual's desire or motivation to complete their tasks. competitiveness resulting in loss of productive resources for the organization. It is for this reason that the HR managers stress on the employees having high levels of motivation to get the job done.

1.3 Scope

The main aim of the project was to develop a Human Resource Module for the Automation of HR Software in which all the information regarding the employees in the company will be present. This has to be developed with good Interaction/ communication facilities between the employees and HR Administrator in such a manner that a level of hierarchy was maintained between the various employees. The web pages approximately an employee are created dynamically based on the person identity and password and hyperlinks are provided to web pages containing record approximately Employee General Profile, Salary Details, Payroll and other static links to various other pages. An Information Hierarchy is maintained i.e. the records regarding a particular employee is accessed by means of the equal or any individual above him inside the records hierarchy. There was also a provision for updating the details. Each employee has the facility of Updating his General Details, Contact Details and can monitor his/her attendance. User Controls are provided for Navigating through the web Pages. HR admin page is created with HR admin tasks. HR administrator is provided with facility of adding employee in to the company and creating various components like salary, designation, shifts, allowances, reductions etc. He also has the facility of viewing/updating all employees details. The whole project is web .

1.4Problem Statement

The capacity of Human Resource office is for the most part managerial and standard to all associations. Typically Organizations have assessment and finance process. Compelling and effective administration of Human Capital advanced to an unpreventable and muddled process.

The fundamental duty of HR comprises of following existing worker information which by and large incorporates individual narratives of representative, abilities, compensation and

achievements. To lessen the manual workload of these managerial exercises, associations started to electronically mechanize a considerable lot of these procedures by presenting specific Human Resource Management System.

1.5 Requirements

There are different requirements for this project completion

Requirements are

1.4.1 Software Requirements

✞JDK

JDK is a software development environment used for making applets and Java applications. The full form of JDK is Java Development Kit. Java developers can use it on Windows, macOS, Solaris, and Linux. JDK helps them to code and run Java programs. It is possible to install more than one JDK version on the same computer. JDK includes the resources needed to create Java programmers, while JRE is used to run them. It comes with a compiler, a Java programmer launcher, and an Applet viewer, among other things.
The compiler transforms Java code into byte code.

The Java application launcher starts the Java Runtime Environment (JRE), loads the required class, and runs the main process.

✞JRE

JRE is a piece of software that allows you to run other programmers. The class libraries, loader class, and JVM are all included. To put it another way, JRE is needed to run Java programmers. If you are not a programmer, you just need JRE to run Java programmers and do not need to install JDK. You do not need to download and install the Java Runtime Environment since it is included with all JDK versions.

✞JVM

The Java Virtual Machine (JVM) is a programmer that provides a runtime environment for Java code or applications. It translates Java byte code to machine code. The Java Virtual Machine (JVM) is a component of the Java Run Environment (JRE). It cannot be downloaded and built separately. You must first install JRE before you can install JVM. JVM stands for Java Virtual Machine in its full form

The compiler generates machine code for many other programming languages.

✞SERVER

Apache Tomcat is a web container that allows servlet and Java Server Pages (JSP) based web applications to be run. The majority of modern Java web frameworks, such as Java Server Faces, Struts, and Spring, are based on servlets.

Apache Tomcat also has an HTTP connector on port 8080 by default, allowing Tomcat to be used as an HTTP server. Tomcat, on the other hand, does not do as well as a demon.

✞ECLISPE

Eclipse is a programming language integrated development environment (IDE) for creating applications in Java and other programming languages such as C/C++, Python, PERL, Ruby, and others.

PyDev is a plugin that allows Eclipse to be used as a Java IDE. The Java Development Tools (JDT) project offers a plug-in that allows Eclipse to be used as a Java IDE.
The Java Development Tools (JDT) project provides a plug-in that allows Eclipse to be used as a Java IDE, PyDev is a plugin that allows Eclipse to be used as a Python IDE, C/C++ Development Tools (CDT) is a plug-in that allows Eclipse to be used for developing C/C++ applications, and the Eclipse Scala plug-in allows Eclipse to be used as an IDE for developing Scald applications and PHP applications.

Using IDE will cost you less time and effort.

- ✞ Navigation is made easier.
- ✞ Auto completion- one of the best features, you don't have to remember all.
- ✞ Refactoring
- ✞ Error debugging is easy you can easily navigate to Error line.
- ✞ All files can be viewed and managed at same screen.
- ✞ Organizing you imports.
- ✞ Downloading requires packages at ease.

SPRING TOOL SUIT

STS (Spring Tool Suite) is an Eclipse-based IDE for creating Spring-based projects. The Spring Source group is actively developing and maintaining it. Spring-based application creation is facilitated and simplified by STS, which provides comprehensive project templates such as Spring Batch, Spring Integration, Spring Persistence (Hibernate +

JPA), Spring MVC, and others. Furthermore, with Maven integration, STS releases developers from manually managing spring jar files in their projects. You always get the latest update of spring artifacts from Maven repository.

The Spring MVC architecture, as its name suggests, is based on the Model - View - Controller (MVC) design pattern, which divides the application's logic into three layers: Mode, View, and Controller. Spring uses the following components to implement MVC: The dispatcher servlet in spring serves as a front controller between the spring application and its users.

✞POSTMAN

Postman is an API (application programming interface) development tool that aids in the creation, testing, and modification of APIs. This tool contains almost all of the functionality that a developer might need. Every month, over 5 million developers use it to make API creation quick and fast. It can make a variety of HTTP requests (GET, POST, PUT, PATCH), as well as save data.

Postman is a common API client that makes creating, sharing, testing, and documenting APIs simple for developers. Users can build and save easy and complex HTTP/s requests, as well as read their replies, to accomplish this. As a consequence, work is more productive and less boring.

When it comes to executing APIs, Postman is extremely useful. You can use them over and over without having to recall the exact endpoint, headers, API keys, and so on once you've entered and saved them.

Select the method (the action type) on the left of the field where it says "Enter request URL" and enter the API endpoint there. We'll use POST instead of the default GET form.

✞MYSQL WORKBENCH

MySQL Workbench is a **Visual database designing and modeling**access tool for MySQL server relational database. It facilitates creation of new physical data models and modification of existing MySQL databases with reverse/forward engineering and change management functions. The purpose of MySQL workbench is to provide the interface to work with databases more easily and in a more structured way.

The functionalities of mysql workbench are as following:

- **SQL Development:**

  MySQLworkbench includes a multimedia SQL editor.

  Developers may use the Visual SQL editor to create, update, and run queries against MySQL server databases. It includes tools for viewing and exporting data. Its syntax color highlighters make writing and debugging SQL statements a breeze.

  Multiple queries can be executed, with the results displayed in separate tabs automatically. Multiple queries can be run and results automatically displayed in different tabs. The queries are also saved in the history panel for later retrieval and running.

✞ **Data Modeling (Design):**

Models are at the heart of the majority of reliable and high-performing databases. MySQLworkbench includes tools that let developers and database administrators build physical database design models that can then be easily converted into MySQL databases using forward engineering.

Multiple models can be created in the same environment with MySQL Workbench.

All objects, such as tables, views, and stores, are supported.

A database is made up of stored procedures, stimuli, and other components. The MySQL Workbench includes a built-in model validating tool that alerts the data modeler to any issues.

It also supports various modelling notations and can be customized using the LUA scripting language.

✞Server Administration

The security of the company's data is dependent on server administration. Users' management, server setup, server logs, and other problems are all important aspects of server administration. Workbench MySQL includes the following features that make MySQL server management easier.

✞Data Migration

Data migration is a one-time process that involves planning, extracting, and, if possible, converting internal data from one storage device to another.

This could sound similar to data replication or data integration, but the two processes are not the same. Data replication is the process of copying data from one platform to another on a regular basis, while data replication is the process of copying data from one platform to another on a regular basis.

✞MySQL Enterprise Support

This feature helps support enterprise products like MySQL Enterprise Backup, MySQL Firewall, and MySQL Audit.

✞Visual Studio Code

Visual Studio Code is a lightweight code editor that includes features for debugging, task execution, and version control. It aims to give developers just the resources they need for a fast code-build-debug cycle, leaving more complicated workflows to full-featured IDEs like Visual Studio IDE.

1.4.3 Introduction of Language

✞Java

Java is intended to be simple to understand. It should be simple to master if you grasp the fundamental concepts of OOP Java.

Ensure your safety. Java's safe function allows the development of virus-free and tamper-proof systems. Public-key encryption is used in authentication techniques. Java compiler generates an architecture-neutral object file format, which makes the compiled code executable on many processors, with the presence of Java runtime system.
Java's safe function allows the development of virus-free and tamper-proof systems. Public-key encryption is used in authentication techniques.

In the inclusion of the Java runtime framework, the Java compiler produces an architecture-neutral object file format, which renders the compiled code executable on a wide range of processors.
Being architecture-neutral and having no implementation dependent aspects of the specification makes Java portable. Compiler in Java is written in ANSI C with a clean portability boundary, which is a POSIX subset.
It is possible to write programmers that can perform multiple tasks at the same time using Java's multithreaded functionality. Developers can use this design function to create immersive applications that run smoothly.

Java byte code that is interpreted is converted to native machine instructions on the fly and is not saved. java was created for the internet's distributed world.

Since it is designed to adapt to a changing environment, Java is considered to be more dynamic than C or C++. Java programmers can store a large amount of runtime data that can be used to validate and resolve object accesses in real time.

✞SQL(structured query language)

Databases can be found in almost all software applications. SQL is the standard language to query a database. This SQL tutorial for beginners will teach you database design. Also, it teaches you basic to advanced SQL.
It enables users to access data stored in a relational database management system (RDBMS).
It aids in the description of data.
It enables you to identify data in a database and manipulate the data.
SQL allows you to build and delete databases and tables.
SQL allows you to construct a view, a stored process, and a feature in a database.
When you want to execute an SQL command for any DBMS system, you need to find the best method to carry out your request, and SQL engine determines how to interpret that specific task.

✞Hibernate

Hibernate is a Java framework that makes it easier to create database-interactive Java applications. It's an ORM (Object Relational Mapping) tool that's open source and lightweight. For data persistence, Hibernate implements the JPA (Java Persistence API) specifications.

An ORM tool simplifies the data creation, data manipulation and data access. It is a programming technique that maps the object to the data stored in the database.

Many artifacts are included in the Hibernate architecture, including persistent objects, session factories, transaction factories, link factories, session, and transaction factories.

There are four levels of Hibernates architecture.

Application layer in Java

Framework layer for Hibernate

API layer for the backhand

✞Layer of the database

Many artifacts are included in the Hibernate architecture, including persistent objects, session factories, transaction factories, link factories, session, and transaction factories.

✞HQL(Hibernate Query Language)

Hibernate Query Language (HQL) is an object-oriented query language close to SQL that deals with persistent objects and their properties rather than tables and columns. Hibernate converts HQL queries into SQL queries, which are then used to perform database actions.

While you may use Native SQL to directly use SQL statements with Hibernate, I suggest using HQL wherever possible to avoid database portability issues and to take advantage of Hibernates SQL generation and caching strategies.

In HQL, keywords such as Choose, FROM, and WHERE are not case sensitive, but properties such as table and column names are.

✞Spring boot

Spring Boot is a Java-based open source platform for developing Micro Services. Pivotal Team is the company behind it. Spring Boot makes it simple to build stand-alone, production-ready spring applications. Spring Boot includes extensive infrastructure support for developing micro services, allowing you to create enterprise-ready applications that can be "just run."

Create stand-alone spring applications

Embed Tomcat, Jetty or Undertow directly (no need to deploy WAR files)

Provideopinionated 'starter' dependencies to simplify your build configuration

Automatically configure spring and 3rd party libraries whenever possible

Provide production-ready features such as metrics, health checks, and externalized configuration

Absolutely no code generation and no requirement for XML configuration.

✞SPRING CLOUD

Spring Cloud gives developers the resources they need to quickly create some of the most common trends in distributed systems. Configuration management, for example, service discovery, circuit breakers, intelligent routing, micro-proxy, a control bus, one-time tokens, global locks, leadership election, distributed sessions, and cluster state are all examples., configuration management, service discovery, circuit breakers, intelligent routing, micro-proxy, a control bus, one-time tokens, global locks, leadership election, distributed sessions, cluster state.

✞Features

Intelligent routing and service discovery

Service-to-Service Call

Load Balancing

Leadership Election

Global Locks

Distributed Configuration

Distributed Messaging

Spring Security is an authentication and access-control system that is both efficient and highly customizable. For securing Spring-based applications, it is the de-facto norm.

Spring Security is a system for providing Java applications with both authentication and authorization. The true power of Spring Security, like all Spring programmers, lies in how quickly it can be expanded to meet new requirements.

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✞VUE.JS

Vue is a progressive platform for creating user interfaces (pronounced /vju/, like view). Vue is designed from the ground up to be incrementally adoptable, unlike other monolithic frameworks.

VueJS is a modern JavaScript application that can be used to build interactive web interfaces. It's one of the most well-known frameworks for web creation. The view layer is the subject of VueJS. It can be seamlessly incorporated into large projects for front-end growth.

VueJS installation is simple to get started with. Any developer can easily comprehend and implement it.

The first version of VueJS was released in Feb 2014. It recently has clocked to 64,828 stars on GitHub, making it very popular. VueJS has this as one of its main features. It assists in listening to UI element changes and performing the required calculations. This does not necessitate any extra coding.

1.4.4 Data Formats

✞JSON

JSON (JavaScript Object Notation) is a data-exchange format that is simple to use. Reading and writing are simple tasks for humans. Machines can easily parse and produce it. It is based on a subset of the ECMA-262 3rd Edition - December 1999 JavaScript Programming Language Standard. JSON is a text format that is language agnostic but follows conventions that C-f programmers are familiar with.

C, C++, C#, Java, JavaScript, Perl, Python, and several other languages belong to the C family. JSON is an ideal data-transfer language because of these characteristics. Name/value pairs are grouped together in this collection. This is represented as an object, record, struct, dictionary, hash table, keyed list, or associative array in various languages. A collection of values in a specific order. This is implemented as an array, vector, list, or sequence in most programming languages.

There are data structures that are universal. They are supported in some way or another by almost all modern programming languages. It's understandable.

✞XML

Data is defined using XML (Extensible Markup Language). The XML standard is a versatile way to construct information formats and exchange structured data electronically over the public Internet and corporate networks.

XML code is identical to Hypertext Markup Language (HTML), which is a structured recommendation from the World Wide Web Consortium (W3C) (HTML). Markup symbols are used in both XML and HTML to denote the contents of a page or file. HTML code only specifies how Web page content (mostly text and graphic images) should be viewed and interacted with.

XML data is self-describing or self-defining, which means that the structure of the data is incorporated with the data, so there is no need to pre-build the structure to store the data when the data arrives; it is dynamically understood within the XML. Any person, group of individuals, or company that wants to exchange information in a standardized manner may use the XML format. XML stands for "Extensible Markup Language."

REQUIREMENT ANALYSIS

2.1 INTRODUCATION

The programmer specifications are a list of the target system's features and functions. Users' perceptions of the software product are expressed in requirements. From the client's perspective, the specifications may be obvious or concealed, known or unknown, planned or unexpected.

Requirement engineering is the method of gathering software specifications from clients, analyzing them, and documenting them.

The aim of requirement engineering is to create and maintain a detailed and descriptive document called a "System Requirements Specification."

It's a four-step procedure that includes:

Study of Feasibility

Gathering Requirements

Specification of Software Requirements

Validation of Software Requirements

✞FUNCTIONAL REQUIREMENTS

A Functional Requirement (FR) is a statement that describes the service that the programmer must provide. It refers to a software system or a part of one. A function is nothing more than the inputs, actions, and outputs of a software system.t can be a calculation, data manipulation, business process, user interaction, or any other specific functionality which defines what function a system is likely to perform. Functional Requirements are also called **Functional Specification**.

In software engineering and systems engineering, a Functional Requirement can range from the high-level abstract statement of the sender's necessity to detailed mathematical functional requirement specifications. Functional software requirements help you to capture the intended behaviour of the system.

Helps you to check whether the application is providing all the functionalities that were mentioned in the functional requirement of that application

A functional requirement document helps you to define the functionality of a system or one of its subsystems.

Functional requirements along with requirement analysis help identify missing requirements.

✞PROJECT REQUIREMENTS

- Basically my project is term of different user interfaces based in which I make a web interface for HR administrators and employees so that they can easily contact with each others.

  Human resource managers monitor workplace safety, guide the management of employee records, and control overall employee recruiting, evaluation, and labor relations. They also develop, execute, and track training programmers and procedures. Employee rights programmers, such as equal opportunity, must be kept up to date by HR administrators.

Human resource managers operate in companies or organizations and can be found in almost every sector. HR administrators are in charge of coordinating a company's administrative functions. This entails coordinating events and planning procedures that must occur in the workplace. Employee insurance, hiring and firing, and inter-employee disputes are also handled by them. HR managers commonly work in offices.

- Employee Information Management
- Recruitment and Hiring
- Talent Management
- Benefits Management
- Financial Management
- Time and Attendance
- Learning and Professional Development
- Accounting
- Technical

2.3.2 Admin Requirement

- Be the first point of contact for all HR-related queries
- Administer HR-related documentation, such as contracts of employment
- Ensure the relevant HR database is up to date, accurate and complies with legislation
- Assist in the recruitment process
- Liaise with recruitment agencies
- Set up interviews and issue relevant correspondence

2.4 NON FUNCTIONAL REQUIREMENT

NON-FUNCTIONAL REQUIREMENT (NFR) specifies the quality attribute of a software system. They judge the software system based on Responsiveness, Usability, Security, Portability and other non-functional standards that are critical to the success of the software system. Example of nonfunctional requirement, *"how fast does the website load?"* Failing to meet non-functional requirements can result in systems that fail to satisfy user needs.

Non-functional Requirements allows you to impose constraints or restrictions on the design of the system across the various agile backlogs. Example, the site should load in 3 seconds when the number of simultaneous users is > 10000. Description of nonfunctional requirements is just as critical as a functional requirement.

- Usability requirement
- Serviceability requirement
- Manageability requirement
- Recoverability requirement
- Security requirement
- Data Integrity requirement
- Capacity requirement
- Availability requirement
- Scalability requirement
- Interoperability requirement
- Reliability requirement
- Maintainability requirement
- Regulatory requirement
- Environmental requirement

2.4.1 Performance

The performance assessment is the method of evaluating employee performance by contrasting current performance to previously defined expectations that have been conveyed to employees, and then providing input to employees on their performance level in order to improve their performance as required by the organization.

A performance review is a formal assessment by supervisors of an employee's current job capabilities as well as his capacity for growth and development. It can be both casual and formal.

The informal appraisals are unplanned, while the structured evaluation framework is set up by the company to assess employee performance on a frequent and systematic basis. It decreases the likelihood of bias and snap judgment.

2.4.2 SECUITY AND PRIVACY

Most companies are heavily reliant on computer software and various types of remote communication devices. Consequently, HR professionals must work closely with information technology personnel to ensure that employee files are encrypted and that appropriate security mechanisms have been put in place. HR policies can dictate the manner in which your employees can access work systems from home or from other locations. HR professionals must liaise between the IT department and these workers to ensure they understand the methods of accessing data and the rules for viewing such

information.

An HR professional's role in enforcing the company's security policies starts during the hiring process. You are legally permitted to perform background checks on potential employees if you obtain their consent. Criminal background examinations and credit reports are commonly used in pre-employment screenings.

2.4.3 USABILITY

It used to be that finding a solution or solutions that could handle HR tasks like payroll, benefits management, and time monitoring was sufficient. To get the job done, it was enough to automate these tasks and avoid relying on manual processes. Then we realized that automating HR processes was insufficient. The automation had to ensure precision while also reducing work duplication.

There's no denying that the internet has altered how people interact. As a result, the Malaysian government has taken steps to introduce electronic government (eGovernment) in order to boost services between the government and people by using the Internet while also lowering operating costs in the back office and IT. Human Resource Man is one of Malaysia's e-Government ventures.

- The interface is easy to understand.
- The interface appears easy to use rather than demand
- User cans easily status easily.

2.4.4 Reliability

The ability to rely on others for their integrity, accomplishment, or precision is referred to as reliability. It is the attribute of being dependable and trustworthy. It is the ability to perform an experiment or a test that reliably produces the same results every time it is replicated in the field of education.

Reliable is something on which we can count or bank on, for an instance when we talk about a machine being reliable, we can say about the car being reliable. We also talk about the news we hear, whether it is from the reliable source or it might be fake. In both the previous cases, the word reliable simply means trustworthy or dependable. In research, the word reliable is considered as consistent or occurring repeatedly.

2.4.5 Maintainability

The database may crash at any certain time due to virus or an operating system failure .Therefore it is required to keep a backup of all data on the database to a avoid any data lose.

Micro service can get slow down or can go down this have a fall back mechanism defined so that system do not gets down.Also after sometimes micro service should be registered when it is well and back to work.

Chapter 3

SYSTEM MODELING

3.1 Introduction

System modeling is the process of developing abstract models of a system, with each model presenting a different view or perspective of that system. System modeling has generally come to mean representing the system using some kind of graphical notation, which is now almost always based on notations in the Unified Modeling Language (UML).However, it is also possible to develop formal (mathematical) models of a system, usually as a detailed system specification.Models are used during the requirements engineering process to help derive the requirements for a system, during the design process to describe the system to engineers implementing the system and after implementation to document the system's structure and operation. You may develop models of both the existing system and the system to be developed.

During requirements engineering, existing device models are used. They can be used to explain what the current structure does and to address its strengths and disadvantages. As a result, specifications for the new framework emerge.

During specifications engineering, models of the current system are used to help demonstrate the proposed requirements to other system stakeholders.

The most critical feature of a device model is that it does not have all of the information. A model is a simplified version of the structure being examined rather than a different representation of it. A representation of a structure can, in theory, keep all of the details about the individual being represented, but the real world (also known as the universe of discourse) is incredibly complex, so it's difficult to keep track of anything.

3.2 Major Function

What you need to know about HRM roles and responsibilities. The people factor of management is addressed by human resource management.

Since any company is made up of people, obtaining their services, improving their skills, inspiring them to higher levels of success, and ensuring that they remain committed to the organization are all critical to achieving organizational goals. Regardless of the form of entity — government, corporation, education, health, recreation, or social services — this is true.

Human resource management has been described as a process of human resource creation that includes direction, integration, and encouragement of staff in order to achieve organisational and individual goals.

3.2.1 Major input and output

The major in Human Resource Management is designed to develop skills in the management functions of strategic and human resource planning, compensation, recruitment, **training and development**, career planning, organizational effectiveness, employee relations, and collective bargaining.

3.3 User Case Diagram

The most critical aspect of modelling a system is capturing the complex behaviour. The behaviour of a machine when it is running/operating is referred to as dynamic behaviour. To model a system, static behaviour alone is insufficient; dynamic behaviour is more important than static behaviour. One of the five diagrams available in UML to model the complex essence is the use case diagram. Now that we've established that the use case diagram is dynamic, there should be some internal or external influences that influence how it interacts.

These internal and external agents are known as actors. Use case diagrams consists of actors, use cases and their relationships. The diagram is used to model the system/subsystem of an application. A single use case diagram captures a particular functionality of a system.

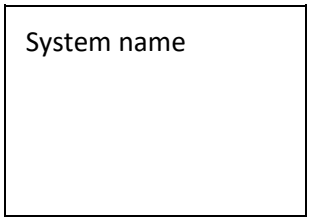
Hence to model the entire system, a number of use case diagrams are used.

The aim of a use case diagram is to capture a system's dynamic nature. However, this description is too broad to adequately explain the intent, as the purpose of the other four diagrams (activity, sequence, partnership, and State chart) is similar. We'll look at a special function that sets it apart from the other four diagrams.

- System

  Draw your system boundaries using a rectangle that contain use cases. Place actor outside the system boundaries.

System



Use case

Draw use case using ovals. Label the ovals with verbs that represent the systems function.

Use case

✞Actors

People, other processes, time triggers, and event triggers are all examples of actors.A consumer or some other device that communicates with the subject plays the part of an actor. It may be used to portray the functions of human users, external hardware, or other entities. Actors are often on the outside of the device and communicate with it directly by initiating a use case, providing feedback, and/or receiving outputs.

✞Relationships

Relationship management is a technique for keeping an organization's audience engaged on a regular basis. This management will take place between a company and its customers (business to consumer between a company and other companies (business to business (business to business [B2B]). Instead of seeing a relationship as a one-way street, relationship management seeks to form collaboration between a company and its customers.

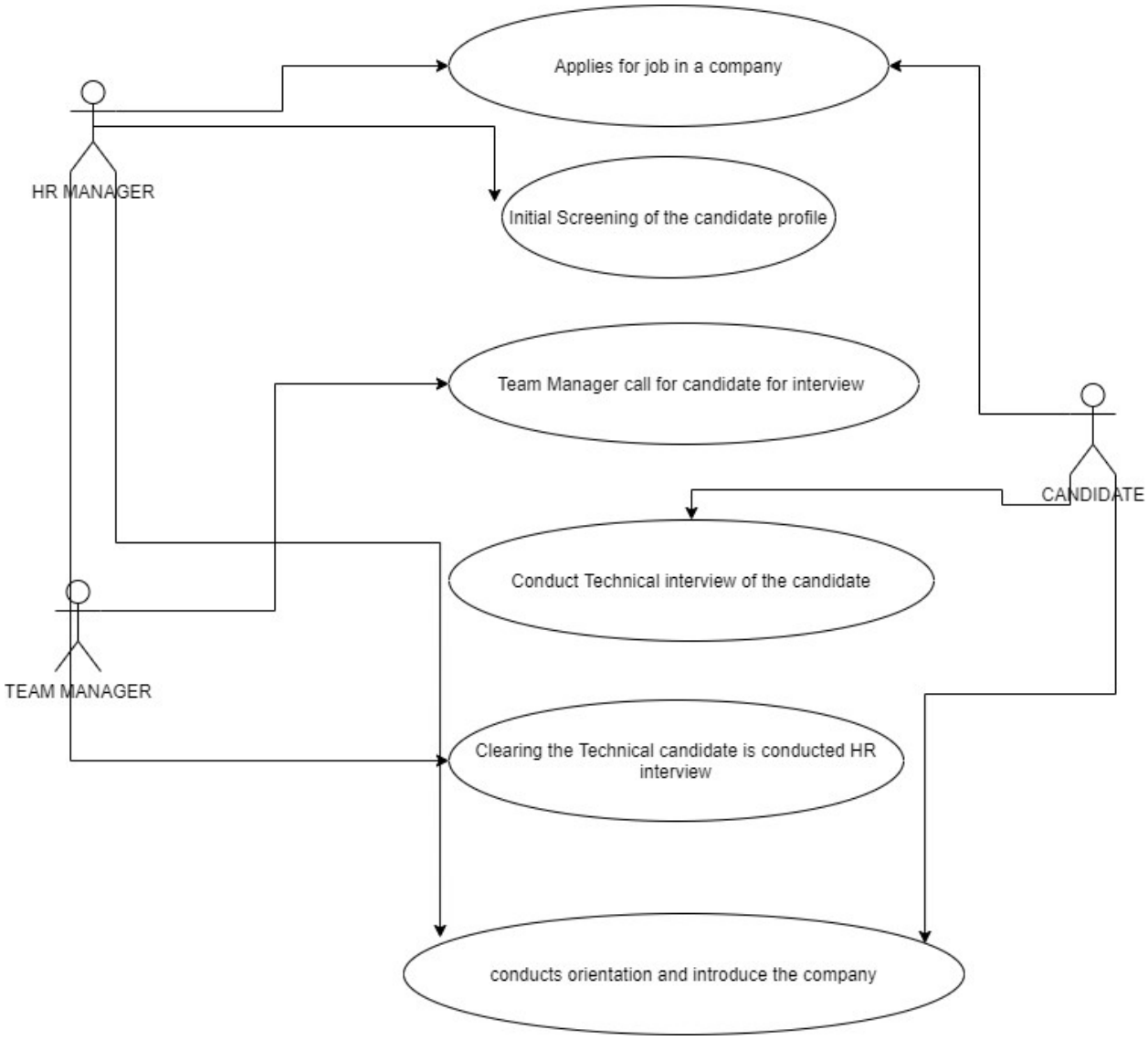

Applies for job in a company
HR MANAGER
Initial Screening of the candidate profile
Team Manager call for candidate for interview
CANDIDATE
Conduct Technical interview of the candidate
TEAM MANAGER
Clearing the Technical candidate is conducted HR interview
conducts orientation and introduce the company

Figure 3.1.2

3.3.1 Use Case 1: Sign up

ID	Uc:1
Name	Signup
Primary Actor	Admin: wants to create account of new employee who is member of organization. Employee: wants to get account to use system of the company.
Input	New user information
Pre-condition	Employee must be member of organization and also select role from specified.
Post-condition	User name and password for new employee
Main success scenario	1.Admin opens the signup page of the system. 2.or new employee clicks signup. 3.system asks for required details. 4.Admin enters details of employee or user enters his details. 5.system validates the entered information.
Alternative flows or extension	If employee name or password already exists,then system gives messages that username or email exists. If any required field is null, then system will display message that please enter complete details.

3.3.2 Use case 2:Login

ID	Uc :2
Name	Login
Primary Actor	Admin, employee
Company and their product	Employee :wants to login and perform his different activities. Admin: wants to login to system and perform his different activities.
Input	Username and password
Pre –condition	Every type of user is registered and his information is saved in the system
Post –condition	User is logged in and system displays home screen.
Main success scenario	1.Employee opens login pages. 2.system asks for information 3.User enters credentials 4. system validates credentials.
Alternative flows or extensions	a.if credentials are not correct then system gives messages for re-enter. b. if any required field is null then system displays message for filling that.
Frequency of occurrence	Many times

3.3.3 Use case 3:Role

ID	Uc :3
Name	Role
Primary Actor	Admin, employee
Tenant	Admin: wants to give and manage the role and their status Employee : wants to take role and working on it.
Input	User enters his information in fields
Pre –condition	Employee logged in
Post –condition	Role is entertained by employee
Main success scenario	User take role System asks users extra information and User submit previous role.

3.3.4 User case 4: Add User details

ID	Uc :4
Name	User details
Primary Actor	Admin and user
Tenant	Admin : wants to add new details will be displayed to user and also manage other details.
Input	New user information
Pre –condition	Admin must be logged into the system
Post –condition	Details will be added to the admin interface.

3.3.5 Use case 5: Logout

ID	Uc :5
Name	Logout
Primary Actor	Admin ,Employee
Tenant	Admin : wants to leave the system so logs out Employee : wants to leave the system so logs out
Pre-condition	User is logged in with his account
Post-condition	User is logged out from the system
Main success scenario	1.user select the logout 2.system closes the users account
Frequency of occurrence	When a user wants to leave the system

MODULES

The list of modules incorpoHuman Resource Management System

➢ Test Details > Technical Details ➢ Certification Details ➢ HR Details ➢ Time Management ➢ Leave Management ➢ Payroll

MODULE DESCRIPTION:

Name of The Module-1: Employee General Module

Description:

This module generates employee's general information along with contact, qualification, skill, certification and project information for the HR Administrator.

Based on the skill provided by the employee he/ she will be assigned project task. Any mismanagement is handled and respective response is generated.

Sub Modules:

➢ Emp Details ➢ Emp Skills

Emp Details: In this sub module we have the information about the Employee.

Emp Skills:

In this sub module we have the information about the skills of the

Employee.

Project Assigned: In this sub module we have the information about the projects handled by the Employee. rated with Human Resource Module is: ➢ Employee General Details

Human Resource Management System

Emp Grade: In this sub module the Employee will be graded based on his performance.

Emp Status: This sub module contains status information about the Employee given by the HR Manager.

Name of The Module-2: HR Module

Description:

This module has control over the system and able to manage the human resource for the various technical needs of the organization. It handles employee's personal and official details. Adding, viewing and updating employee information and generating various reports based on present and previous project performance is very much maintained.

Based on the 'Suggestions and Grievances' posted by the employees the HR administrator takes necessary steps in forwarding company's obligation and maintain the harmony and spirit of the work environment.

Sub Modules:

> HR Information ➢ Emps Details ➢ Search For Emp ➢ HR Status

Hr Information: In this sub module we have the information about the Human Resource Manager.

Emp Details: In this sub module we have the information about the Employee.

Search for Employee: Using this sub module we can search the any Employee information in an organization.

HR Status:

Human Resource Management System

This sub module gives the status information about the Employee. Name of The Module-3: Project Module

Description:

This module deals with project details and project schedule of the employee by the HR administrator. Based on the Project Management specification and technical skills of the employee the module generate the decisive information about the employee's strengths and weaknesses.

This module suggests whether the particular employee with required skills is allowed for next assignment or make him/her to get trained to obtain the required skill.

Sub Modules:

Project Details: This sub module maintains the details about the Project.

Project Description: This sub module maintains the complete description about the Project.

Project Schedule: This sub module maintains the schedule about the Project.

Project Status: This sub module maintains the status about the Project.

Emp For Project: This sub module maintains the Employees including in a Project.

Description:

This module generates various reports required for the employees and HR administrator to cater the ability of the employee. The general reports are .

3.4 Sequence Diagram

A sequence diagram clearly represents the order in which events interact, or the order in which these interactions occur. A sequence diagram may also be referred to as an event diagram or an event scenario. Sequence diagrams show how and in what order the components of a device work together. Businesspeople and software developers also use these diagrams to log and communicate.

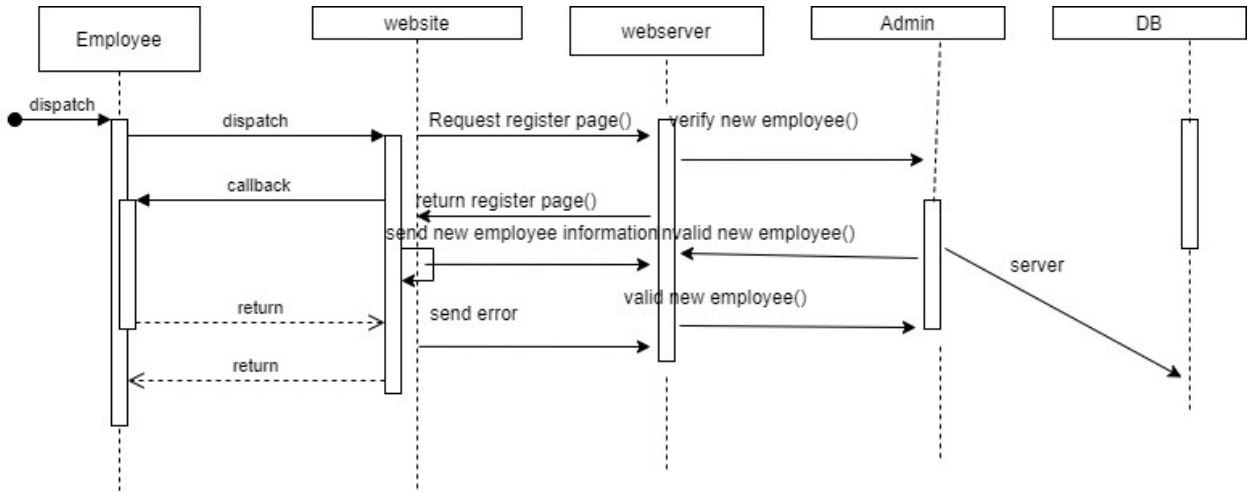

Employee
website
webserver
Admin
DB
dispatch
dispatch
Request register page()
verify new employee()
callback
return register page()
send new employee information
invalid new employee()
server
valid new employee()
return
send error
return

Figure 3.2.1

3.5Class Diagram

In software engineering, a class diagram in the **Unified Modeling Language** (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the **relationships** among objects.

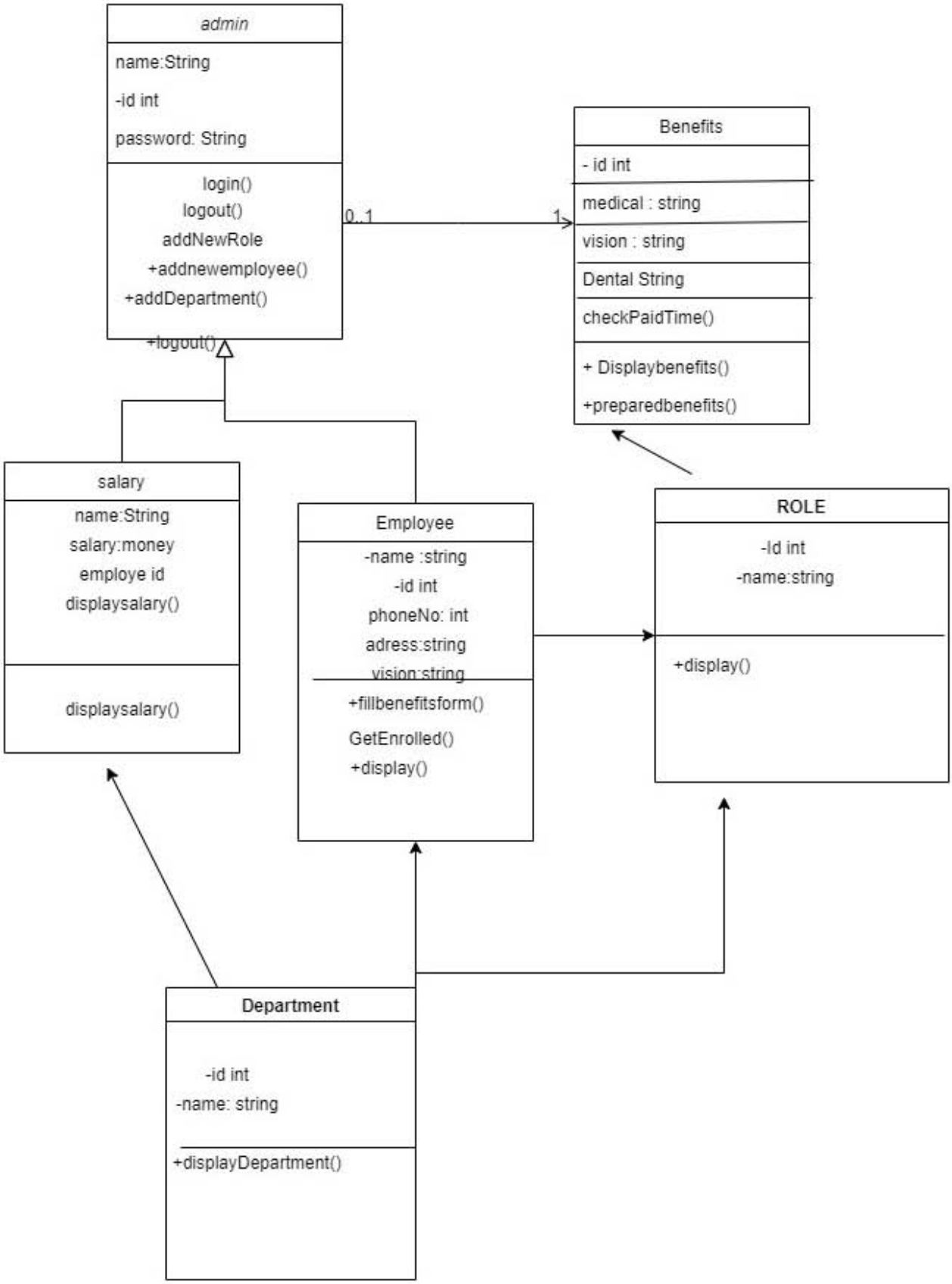

admin
name:String
-id int
password: String
login()
logout()
addNewRole
+addnewemployee()
+addDepartment()
+logout()
0..1
1
Benefits
- id int
medical : string
vision : string
Dental String
checkPaidTime()
+ Displaybenefits()
+preparedbenefits()
salary
name:String
salary:money
employe id
displaysalary()
displaysalary()
Employee
-name :string
-id int
phoneNo: int
adress:string
vision:string
+fillbenefitsform()
GetEnrolled()
+display()
ROLE
-Id int
-name:string
+display()
Department
-id int
-name: string
+displayDepartment()

Figure 3.2.2.1

3.6 **component Diagram**

A component diagram, also known as a UML component diagram, shows how physical elements in a system are organized and wired together. Component diagrams are often used to model implementation specifics and double-check that planned construction covers all aspects of the system's necessary functions.

In the first version of UML, components included in these diagrams were physical: documents, database table, files, and executables, all physical elements with a location. In the world of UML 2, these components are less physical and more conceptual stand-alone design elements such as a business process that provides or requires interfaces to interact with other constructs in the system. The physical elements described in UML, like files and documents, are now referred to as artifacts. A UML component may contain multiple physical artifacts if they naturally belong together.

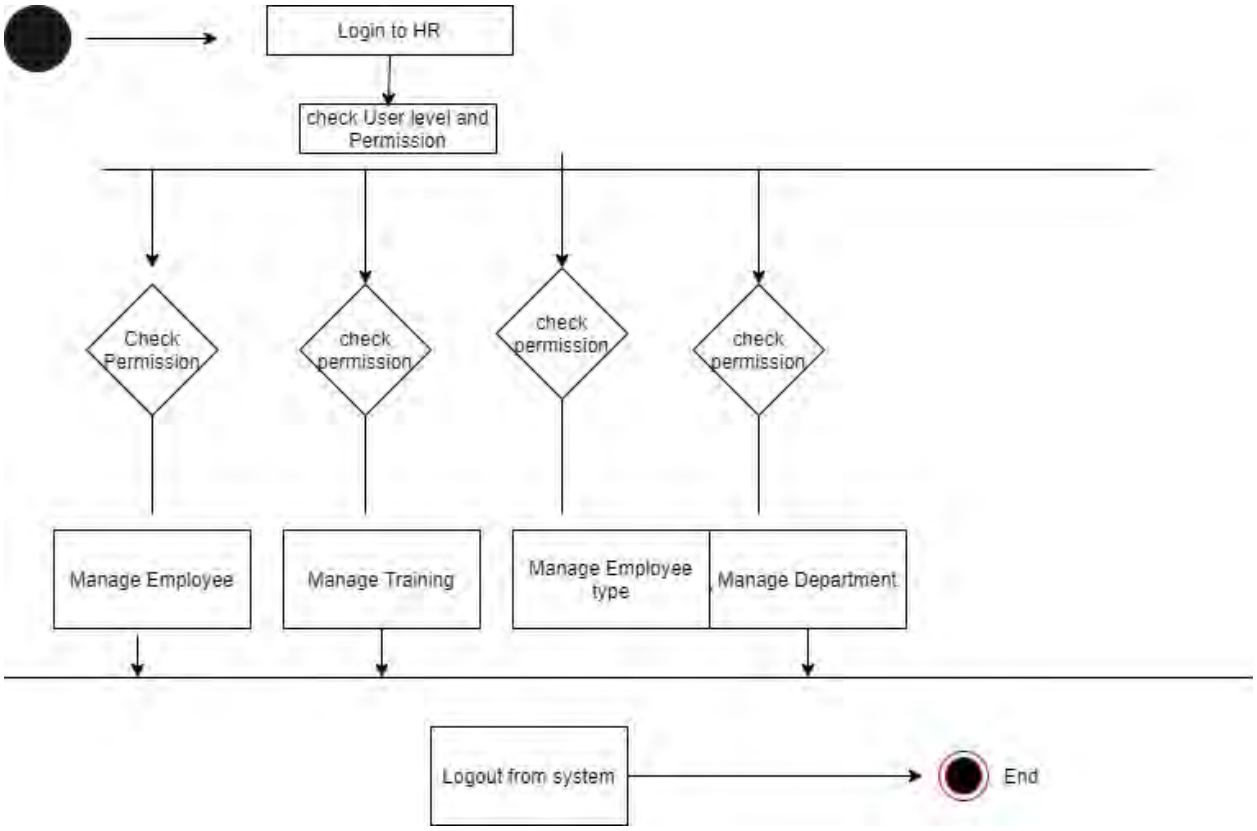

Login to HR
check User level and Permission
Check Permission
check permission
check permission
check permission
Manage Employee
Manage Training
Manage Employee type
Manage Department
Logout from system
End

Figure 3.3.2.1

4 construction and Database

4.1 Introduction

In this chapter I will discuss about the construction and working of spring/framework with all aspects of it. It is most important to know about all the work/attributes of technology used in this project.

4.2 Background

As is discussed in introductory chapter that I will work on spring framework. Here we have many categories to develop the project using spring framework like spring core, spring boot, spring cloud, spring data jpa and others. In old days or some years ago the developers and the spring core framework in which too much configuration was required. so that was we difficult to manage the software by developer.

4.3 Why spring cloud

Spring Cloud is an open-source library that provides tools for easily deploying JVM-based applications on clouds. It provides an extensible mechanism and a better user interface than its competitors thanks to features such as distributed configuration, circuit breakers, global locks, service registrations, load balancing, cluster state, routing, load balancing, and so on.

- Problems with performance: Various operational overheads have a detrimental effect on performance.
- Complexity of deployment: DevOps skills are needed.
- Redundancy: In distributed systems, redundancy is a popular problem.
- Load–balancing: Load–balancing distributes workloads across various computing resources.
- Difficulties with distributed networks, such as latency issues.

Spring Cloud framework provides tools for developers to build a robust cloud application quickly. We can also build the micro service-based applications, for example, configurationmanagement, service discovery, circuit breakers, intelligent routing, cluster state, micro-proxy, a control bus, one time tokens, etc. Using Spring Cloud, a developer can quickly develop services and applications that implement the design patterns. These patterns work well in any distributed environment, including the bear metal data centers, developers laptop, and managed platform such as Cloud Foundry.

Bear metal data centers: It is a physical server dedicated to a single-tenant (a person who occupies server on rent). These are not shared between the customers. The tenant can optimize the performance according to its needs for performance, security, and reliability. The bare metal data centers are also known as Single-tenant physical server or managed dedicated server. The operating system is installed directly on the bare metal server and delivers better performance.

Configuration
In a distributed environment, Spring Cloud Config offers server-side and client-side support for externalized configuration. With the Config Server, you can handle external properties for applications in all environments from a single location.

The client and server definitions map to the Spring Environment and Property Source abstractions in exactly the same way, so they work well with Spring applications but can also be used with any application written in any language. You can handle the configuration between those environments as an application passes through the implementation pipeline from development to testing to production.

Services Discovery
A distributed system is made up of a large number of resources that interact with one another to perform specific tasks. The process of one service dynamically discovering the network location (IP address and port) of another service in order to communicate with it is known as service discovery.

Consider the case where one REST service (Service A) is attempting to call another REST service (Service B) (Service B). Service A needs to know Service B's network location (IP address and port) in order to make a request. The network locations of networks in a traditional SOA (Service Oriented Architecture) environment will barely shift because they are deployed in on-premise data.

The **Central Server** that maintains a global view of the address.

The **Client** that connects to the central server can upload and retrieve the address.

Client side discovery:

Services typically need to call one another. In a monolithic application, services invoke one another through language-level method or procedure calls. In a traditional distributed system deployment, services run at fixed, well known locations (hosts and ports) and so can easily call one another using HTTP/REST or some RPC mechanism. However, a modern micro servicebased application typically runs in virtualized or containerized environments where the number of instances of a service and their locations changes dynamically.

Server Side discovery:

Service Discovery has the ability to locate a network automatically making it so that there is no need for a long configuration set up process. Service discovery works by devices connecting through a common language on the network allowing devices or services to connect without any manual intervention. (i.e Kubernetes service discovery, AWS service discovery)

There are two types of service discovery: Server-side and Client-side. Server-side service discovery allows clients applications to find services through a router or a load balancer.

Clientside service discovery allows clients applications to find services by looking through or querying a service registry, in which service instances and endpoints are all within the service registry.

Circuit Breaker

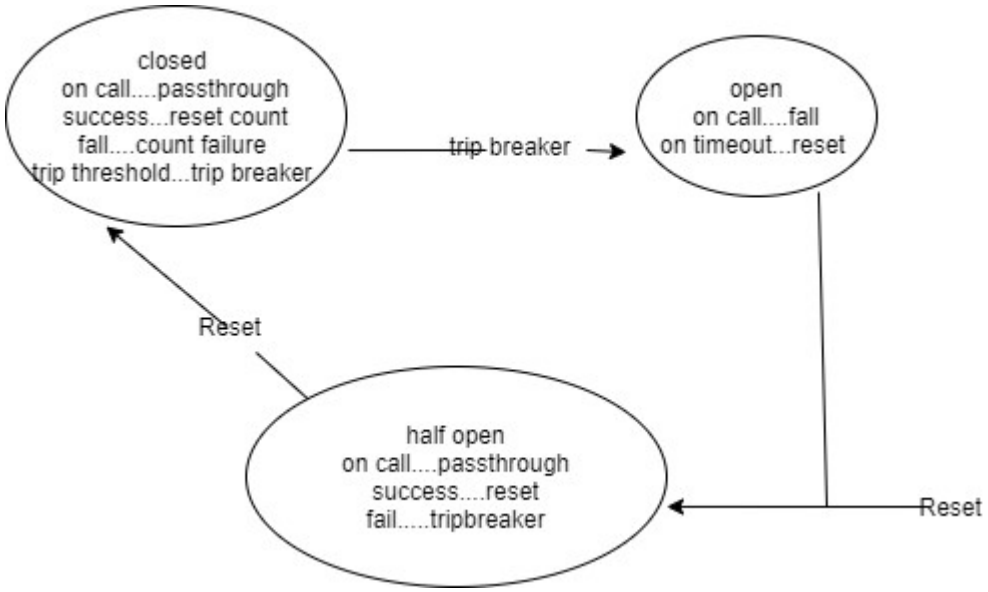


Figure 4.1.1

Closed – When everything is normal, the circuit breaker remains in the closed state and all calls pass through to the services. When the number of failures exceeds a predetermined threshold the breaker trips, and it goes into the Open state.

Open – The circuit breaker returns an error for calls without executing the function.

Half-Open – After a timeout period, the circuit switches to a half-open state to test if the underlying problem still exists. If a single call fails in this half-open state, the breaker is once again tripped. If it succeeds, the circuit breaker resets back to the normal closed state.

Circuit Breakers in CLOSED State

When the circuit breaker is in the CLOSED state, all calls go through to the Supplier Micro service, which responds without any latency.

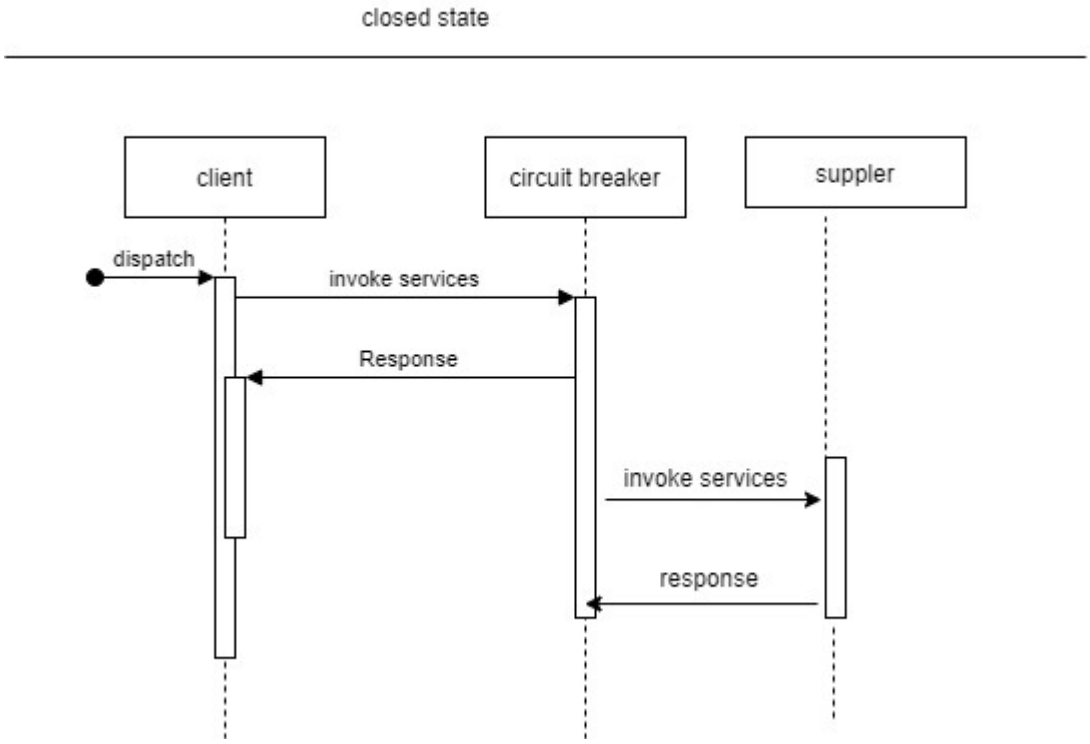

closed state
client
circuit breaker
suppler
dispatch
invoke services
Response
invoke services
response

Figure 4.2.1

Circuit Breakers in OPEN State

If the Supplier Microservice is experiencing slowness, the circuit breaker receives timeouts for any requests to that service. Once number of timeouts reaches a predetermined threshold, it trips the circuit breaker to the OPEN state. In the OPEN state the circuit breaker returns an error for all calls to the service without making the calls to the Supplier Microservice. This behavior allows the Supplier Microservice to recover by reducing its load.

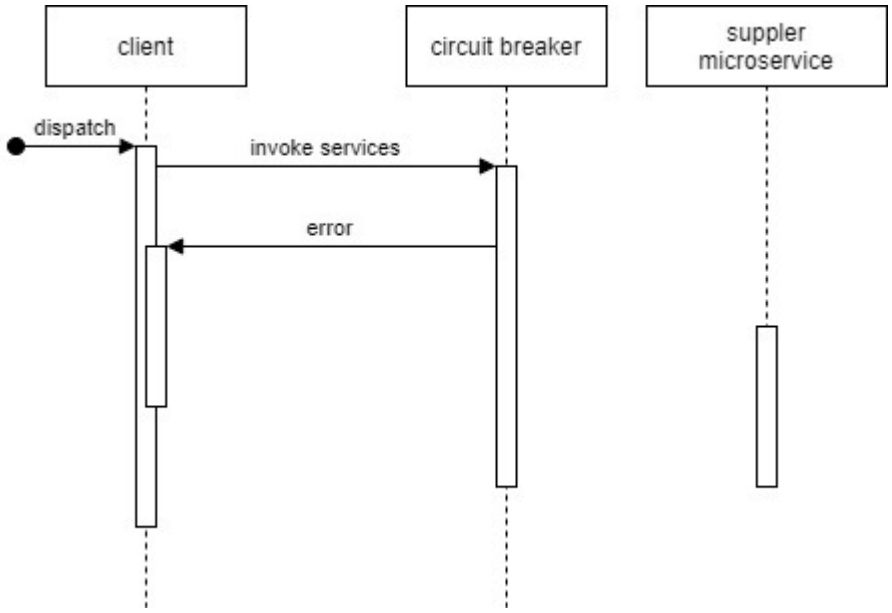

client
circuit breaker
suppler microservice
dispatch
invoke services
error

Figure 4.3.1

Circuit Breakers in HALF-OPEN State

The circuit breaker uses a monitoring and feedback mechanism called the HALF-OPEN state to know if and when the Supplier Microservice has recovered. It uses this mechanism to make a trial call to the supplier micro service periodically to check if it has recovered. If the call to the Supplier Microservice times out, the circuit breaker remains in the OPEN state. If the call returns success, then the circuit switches to the CLOSED state. The circuit breaker then returns all external calls to the service with an error during the HALF-OPEN state.

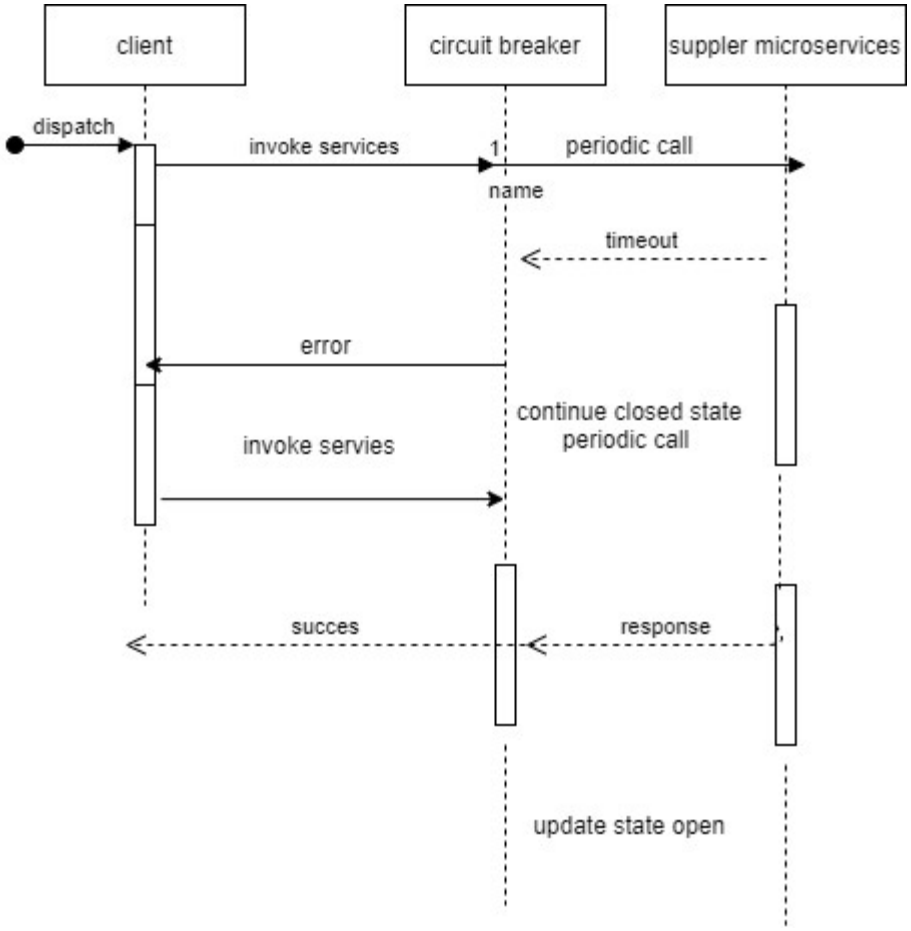

client
circuit breaker
suppler microservices
dispatch
invoke services
1
periodic call
name
timeout
error
continue closed state
periodic call
invoke servies
succes
response
update state open

Figure 4.4.1

•API Gateway

An API gateway is an API management tool that sits between a client and a collection of backend services.

An API gateway acts as a reverse proxy to accept all application programming interface (API) calls, aggregate the various services required to fulfill them, and return the appropriate result.

Most enterprise APIs are deployed via API gateways. It's common for API gateways to handle common tasks that are used across a system of API services, such as user authentication, rate limiting, and statistics.

API Gateway is core infrastructure

- Security (for example, authentication and authorization)
- Connectivity with a range of different protocols.
- Virtualization.
- Scalability and elasticity.
- High availability.
- Manageability (for example, using **API Gateway** Manager)
- Development simplicity.

•Tracing

Advances in technology and cloud computing have made it easier to stand up and deploy services with ease. Cloud computing enables us to automate away the pain (from days or weeks (gasp!) to minutes!) associated with standing up new services. This increase in velocity in turn enables us to be more agile, to think about smaller batches of independently deployable services.

•CI Pipeline and Testing

Spring, Spring Boot and Spring Cloud are tools that allow developers speed up the time of creating new business features. It's common knowledge however that the feature is only valuable if it's in production. That's why companies spend a lot of time and resources on building their own deployment pipelines.

Creation of a common deployment pipeline

Propagation of good testing and deployment practices

Reducing the time required to deploy a feature to production.

Opinionated deployment pipeline setup

Scripts for the pipeline, to verify backward compatibility of your project and allow zerodowntime deployment

Support for PHP, .NET, NodeJS, and JVM (Maven & Gradle) projects

Deployment option for Cloud Foundry

Deployment option for Kubernetes

Deployment option via Ansible

Pipeline visualisation in Jenkins by using Jenkins Job DSL

Pipeline visualisation in Jenkins by using Jenkinsfile

Pipeline visualisation in Concourse

4.4 Spring Boot Structure

Spring Boot is a module of the Spring Framework. It is used to create stand-alone, productiongrade Spring Based Applications with minimum efforts. It is developed on top of the core Spring Framework.

Spring Boot follows a layered architecture in which each layer communicates with the layer directly below or above (hierarchical structure) it.

Before understanding the **Spring Boot Architecture**, we must know the different layers and classes present in it.

4.4.1 Repository or DAO classes

The Spring **@Repository** annotation is a specialization of the @Componentannotation which indicates that an annotated class is a "Repository", which can be used as a mechanism for encapsulating storage, retrieval, and search behavior which emulates a collection of objects.

In spring framework, @Component annotation marks a java class as a bean so the componentscanning mechanism can pick it up and pull it into the application context.
As @Repository serves as a specialization of @Component, it also enable annotated classes to be discovered and registered with application context.

This annotation is a general-purpose stereotype annotation which can be applied over DAO classes as well as DDD-style repositories. Individual teams may use as appropriate.

5. Testing

5.1 Introduction

The development of large software systems is a complex and error prone process. Faults might occur at any development stage and they must be identified and removed as early as possible to stop their propagation and reduce verification costs. Quality engineers must be involved in the development process since the very early phases to identify required qualities and estimate their impact on the development process. Their tasks span over the whole development cycle and go beyond the product deployment through maintenance and post mortem analysis. Developing and enacting an effective quality process is not a simple task, but it requires that we integrate many quality-related activities with product characteristics, process organization, available resources and skills, and budget constraints.

This paper discusses the main characteristics of a good quality process, then surveys the key testing phases and presents modern functional and model-based testing approaches.

5.2 Software Testing

Software Testing is a method to check whether the actual software product matches expected requirements and to ensure that software product is Defect free. It involves execution of software/system components using manual or automated tools to evaluate one or more properties of interest. The purpose of software testing is to identify errors, gaps or missing requirements in contrast to actual requirements.

Some prefer saying Software testing as a White Box and Black Box Testing. In simple terms, Software Testing means the Verification of Application Under Test (AUT). This tutorial introduces testing software to the audience and justifies its importance.

5.3Why Software Testing is Important

Software Testing is Important because if there are any bugs or errors in the software, it can be identified early and can be solved before delivery of the software product. Properly tested

software product ensures reliability, security and high performance which further results in time saving, cost effectiveness and customer satisfaction.

5.4 benefits of Software

- **Cost-Effective:** It is one of the important advantages of software testing. Testing any IT project on time helps you to save your money for the long term. In case if the bugs caught in the earlier stage of software testing, it costs less to fix.
- **Security:** It is the most vulnerable and sensitive benefit of software testing. People are looking for trusted products. It helps in removing risks and problems earlier.
- **Product quality:** It is an essential requirement of any software product. Testing ensures a quality product is delivered to customers.
- **Customer Satisfaction:** The main aim of any product is to give satisfaction to their customers. UI/UX Testing ensures the best user experience.

5.5 Testing Technique

1. Black box testing,
2. White box Testing, and
3. Gray box testing

5.4.1 Black Box Testing

The black box is a powerful technique to check the application under test from the user's perspective. Black box testing is used to test the system against external factors responsible for software failures. This testing approach focuses on the input that goes into the software, and the output that is produced. The testing team does not cover the inside details such as code, server logic, and development method.

Black box testing is based on the requirements and checks the system to validate against predefined requirements.

5.4.2 White Box Testing

White Box Testing is software testing technique in which internal structure, design and coding of software are tested to verify flow of input-output and to improve design, usability and security. In white box testing, code is visible to testers so it is also called Clear box testing, Open box testing, Transparent box testing, Code-based testing and Glass box testing.

It is one of two parts of the Box Testing approach to software testing. Its counterpart, Black box testing, involves testing from an external or end-user type perspective. On the other hand, White

box testing in software engineering is based on the inner workings of an application and revolves around internal testing.

The term "WhiteBox" was used because of the see-through box concept. The clear box or WhiteBox name symbolizes the ability to see through the software's outer shell (or "box") into its inner workings. Likewise, the "black box" in "Black Box Testing" symbolizes not being able to see the inner workings of the software so that only the end-user experience can be tested.

5.4.3 Gray Box Testing

Grey Box Testing or Gray box testing is a software testing technique to test a software product or application with partial knowledge of internal structure of the application. The purpose of grey box testing is to search and identify the defects due to improper code structure or improper use of applications.

In this process, context-specific errors that are related to web systems are commonly identified. It increases the testing coverage by concentrating on all of the layers of any complex system.

5.6Testing Case

A test case is a document, which has a set of test data, preconditions, expected results and post conditions, developed for a particular test scenario in order to verify compliance against a specific requirement.

Test Case acts as the starting point for the test execution, and after applying a set of input values, the application has a definitive outcome and leaves the system at some end point or also known as execution post condition.

Table 5.0, caption

Test case ID	Id of test case
Test case	Tester name
Testing type	Which testing technique is used
Test case name	Name of the test case
Description	Description of functional requirements
Procedure	Describe steps of that function
Expected result	What should it do
Actual result	What it did
Status	Success or fail

Table 5.1, create user

Test case ID	01
Teat case	User
Testing type	Block box testing
Test case name	Create user
Procedure	User enter • Company Name • Email • Password • Confirmed password • Primary contact Number • Secondary Number • Country • City • Address line1 • Address line 2 • Gender • Martial status • Press create
Expected result	User data is stored in database and an account is created for user to login
Actual status	Successfully singed up
Status	Pass

Table 6.2 signup

Test case ID	01
Test case	User
Testing type	Block box testing
Test case name	User Signup
Description	In this test case user signup process is tested.
Procedure	User enters email and password •Name: Ghulam muhayyudin • Email: ghulam.muhayyudin079@gmail.com • Password:123abc • Press signup
Expected result	User data is stored in database and account is created for user to login
Status	Pass

Table 6.3 ,Login

Test case ID	02
Test case	User
Testing type	Black Box testing
Test case name	Login
Description	Login process is to be tested in this test case.
Procedure	User enters email and password Email: ghulam.muhayyudin079@gmail.com Password:123abc
Expected result	a. If user not register then register first b. If user is registered then authorize the user
Actual result	Successful

Table 6.4 salary history

Test case ID	03
Test case	User
Testing type	Block Box Testing
Test case name	Salary history
Description	Updates the salary after allowance salary
Procedure	User enters category of previous salary record
Excepted	User gets record in database
Actual result	Successful

Table 6.4 city

Test case ID	04
Test case	User
Testing type	Black box testing
Test case name	City table
Description	This test is aimed to check that table Exists in database
Procedure	User fills the forms with valid data • Name: Ghulam muhayyudin • Email:123abc • City name
Expected result	Table will be exists then data will be valid
Actual results	Successful

Table 6.5 Logout

Test case ID	05
Test case	User
Testing type	Black box testing
Test case name	Log Out
Description	This test is to test that the user can log out form system successfully
Procedure	Click the logout button
Expected result	The user is logged out successfully from system
Actual result	Successfully

Conclusion

In today world, the Human Resource Management plays a very significant role in the daily life. On the one hand, the Soft and Hard Human Resource Management influence on the business and lets them development rapidly. It can improve employee's motivation in a business and pay attention to company's policy and law respectively, which can increase the efficiency of company and get higher profits. On the other hand, trade unions help the employee to achieve negotiation successfully in the early time; it means the employee can negotiate a better wages and a good the world, because it has more restrictive and morefavorable to protecting employee's benefit. working condition. However, at the present, the employment law gradually becomes the focus in

In the future, the Human Resources Management will continue to play its role in each business.

Future Enhancement

HRMSfacilitates the safe and efficient storage of employee data. With the help of **HRMS**, an HR representative can easily process employee information on the system without wasting much time doing the paperwork. Plus, the software system is an efficient way to store and recall employee data as and when required.