**INDUSTRY ORIENTED PROJECT TRAINING REPORT**

**Interview Scheduling Management System**

Submitted in partial fulfilment of the Requirements for the project training of degree of

**BACHELOR OF ENGINEERING**

In

**Computer Science & Engineering**

**AS PART OF COURSE WORK OF B.E. (8TH SEM)**

**SUBMITTED BY**

Pranay Chouhan

(CSE)

15BCS1897

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| **CHANDIGARH UNIVERSITY, GHARUAN**  (Deemed University)  MOHALI |
|  |
| MAY 2019 |
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**CERTIFICATE OF ORIGINALITY OF WORK**

I hereby certify that the work which is being presented in the project report entitled by **‘Interview Scheduling Management System’** in partial fulfillment of requirements for the award of degree of B.E. Computer Science & Engineering (Info. Sec.) Submitted in the Department of Computer Science & Engineering at **Chandigarh University, Gharuan** is an authentic record of my own work under the supervision of **Mr. Abhinandan Chivate.**

**Pranay Chouhan**

**15BCS1897**

**Date:**

This is to certify that the above statement made by the student is correct to the best of our knowledge and belief.

**Signature of the Supervisor**

**Mr. Abhinandan Chivate**

**Signature of H.O.D.**

**CERTIFICATE**

This is to certify that Mr. **Pranay Chouhan** has completed the 6 Months Industrial Training during the period from FEB to MAY in our Organization as a Partial Fulfillment of Degree of Bachelor of Technology in Computer science & Engineering. He was trained in the field of **FULL STACK DEVELOPER.**

**Signature & Seal of Training Manager**

**Mrs. Shilpa Mahajan**

**DECLARATION**

I hereby declare that the work which is being presented in this project entitled **Interview Scheduling Management System** in partial fulfilment of degree of **Bachelor of Engineering** in **Computer Science and Engineering** is an authentic record of my own work carried out under the supervision and guidance of **Mr. Abhinandan Chivate, Trainer.**

I am fully responsible for the matter embodied in this project in case of any discrepancy found in the project and the project has not been submitted for the award of any other degree.

**DATE:**

**PLACE:**

**Pranay Chouhan**

**ACKNOWLEDGEMENT**

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**Pranay Chouhan**

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**CHAPTER-1**

**ABOUT**

* 1. **THE COMPANY**

**Cognizant** is an American multinational corporation that provides IT services, including digital, technology, consulting, and operations services. It is headquartered in Teaneck, New Jersey, United States of America. Cognizant is included in the NASDAQ-100 and the S&P 500 indices. It is also one of the fastest growing Fortune 500 companies. It was founded as an in-house technology unit of DUN & BRADSTREEIN in 1994 and started serving external clients in 1996.

Cognizant had a period of fast growth during the 2000s, becoming a Fortune 500 company in 2011. In 2015, the FORTUNE Magazine named it as the world's fourth most admired IT Services company. In 2017, Cognizant was named in Fortune’s Future 50 list.

Cognizant provides information technology, information security, consulting, ITO and BPO services. These include business and technology consulting, system integration, application development & maintenance, IT infrastructure services, analytics, business intelligence data, warehousing, customer relationship management, supply chain management, engineering & manufacturing solutions, enterprise resource planning, research and development, outsourcing, and testing solutions.

The company has more than 281,600 employees globally, of which over 150,000 are in India across 10 locations with a plurality in Chennai. The other centers of the company are in Bangalore, Coimbatore, Gurgaon, Noida, Hyderabad, Kochi, Kolkata, Mangalore, Mumbai, and Pune. The company has local, regional, and global delivery centers in the UK, Hungary, The Netherlands, Spain, China, Philippines, Canada, Brazil, Argentina, Mexico etc.

Cognizant has three key practice areas that span its business — Digital Business, Digital Operations, and Digital Systems & Technology.

* 1. **PURPOSE OF THIS DOCUMENT**

This document is aimed at:

* Providing the necessary inputs to the detailed requirements gathering phase and further on for the SDLC processes.
* This document also serves to establish the traceability between the Business Objectives and the requirements identified in the proposed solution and how they satisfy the stated objectives.
* Provide expectation traceability in terms of the requirements and the user expectation
* Serves as a formal template for documenting the Business Requirements which also includes statutory and regulatory requirements.

The purpose of this document is to systematically capture requirements for the project and the system to be developed. Functional requirements are captured in this document. It also serves as the input for the project scoping.

**CHAPTER-2**

**INTRODUCTION TO PROJECT**

**2.1. PURPOSE**

Interview Scheduling Management System (ISMS) is an application used for managing the job interviews of registered candidates. Candidates are requested to register themselves with the site for job interview. The HR managers can add/edit new job requirements into the system. Once a new job requirement is posted, the HR can schedule interviews for the eligible candidates and after the interview process the results can be updated in the system.

The following are the modules in the system

1. Register Candidate
2. Add Candidate Requirement
3. Edit Candidate Requirements
4. Interview Schedule
5. Interview Observations

**2.2. OBJECTIVES**

Below are the objectives that shall be fulfilled post the execution of this project:

* Admin-HR and User registration and credential authentication.
* Adding candidate details in database for scheduling his/her interview.
* Edit candidate details for interview if required.
* Scheduling interview for a candidate.
* Observation of Candidate’s interview by HR on the basis of rank (performance) of a candidate.
* Real time navigation.

**2.3. INTENDED AUDIENCE**

* All members of the project.
* Supplier group.

**CHAPTER-3**

**TECHNOLOGIES AND SOFTWARES**

**3.1**. **TECHNOLOGIES**

**3.1.1. JAVA**

With the invention of microprocessors, the world is scientifically developed with sophisticated equipments, systems, and devices. Microprocessors are used in computers, televisions, and fax machines. Even the hand-held devices such as pagers, PDAs (Personal Digital Assistant), and cell phones make use of microprocessors. All these electronic devices are helpful because of their communication capabilities. With the increasing capabilities and decreasing cost of information processing and networking technologies, the network is growing rapidly for transmitting information through electronic systems. Internet is the network of networks between different types of computers located at different places to transmit information. Information can reach to any place in the world quickly at a cheaper rate through the Internet. Thus, the Internet has made the world a global village for information exchange. The emerging infrastructure of electronic devices and interconnected computer networks create an environment that presents new challenges to software industries. for this emerging computing environment, Java process to be a well – suited programming language. it is found suitable for networked environments involving a great variety of computer and devices. Java has many characteristics that have contributed to its popularity: Platform independence - Many languages are compatible with only one platform. **Java** was specifically designed so that it would run on any computer, regardless if it was running Windows, Linux, Mac, Unix or any of the other operating systems. Simple and easy to use - Java's creators tried to design it so code could be written¬ efficiently and easily. Multi-functional - Java can produce many applications from command-line programs to applets to Swing windows (basically, sophisticated graphical user interfaces). Java does have some drawbacks. Since it has automated garbage collection, it can tend to use more memory than other similar languages. There are often implementation differences on different platforms, which have led to Java being described as a "write once, test everywhere" system. Lastly, since it uses an abstract "virtual machine", a generic Java program doesn't have access to the Native API's on a system directly. None of these issues are fatal, but it can mean that Java isn't an appropriate choice for a particular piece of software.

**3.1.2. MAVEN**

**Maven** is a powerful project management tool that is based on POM (Project Object Model). It is used for projects build, dependency and documentation. It simplifies the build process like ANT. But it is too much advanced than ANT.

In short terms we can tell maven is a tool that can be used for building and managing any Java-based project. maven make the day-to-day work of Java developers easier and generally help with the comprehension of any Java-based project.

Maven does a lot of helpful task like:

* We can easily build a project using maven.
* We can add jars and other dependencies of the project easily using the help of maven.
* Maven provides project information (log document, dependency list, unit test reports etc.)
* Maven is very helpful for a project while updating central repository of JARs and other dependencies.
* With the help of Maven, we can build any number of projects into output types like the JAR, WAR etc. without doing any scripting.
* Using Maven, we can easily integrate our project with source control system (such as Subversion or Git).

Core Concepts of Maven:

* **POM Files:** Project Object Model(POM) Files are XML file that contains information related to the project and configuration information such as dependencies, source directory, plugin, goals etc. used by Maven to build the project. When you should execute a maven command you give maven a POM file to execute the commands. Maven reads pom.xml file to accomplish its configuration and operations.
* **Dependencies and Repositories:** Dependencies are external Java libraries required for Project and repositories are directories of packaged JAR files. The local repository is just a directory on your machine hard drive. If the dependencies are not found in the local Maven repository, Maven downloads them from a central Maven repository and puts them in your local repository.
* **Build Life Cycles, Phases and Goals:** A build life cycle consists of a sequence of build phases, and each build phase consists of a sequence of goals. Maven command is the name of a build lifecycle, phase or goal. If a lifecycle is requested executed by giving maven command, all build phases in that life cycle are executed also. If a build phase is requested executed, all build phases before it in the defined sequence are executed too.
* **Build Profiles:** Build profiles a set of configuration values which allows you to build your project using different configurations. For example, you may need to build your project for your local computer, for development and test. To enable different builds, you can add different build profiles to your POM files using its profiles elements and are triggered in the variety of ways.
* **Build Plugins:** Build plugins are used to perform specific goal. you can add a plugin to the POM file. Maven has some standard plugins you can use, and you can also implement your own in Java.

**3.1.3. SPRING MVC**

A **Spring MVC** is a Java framework which is used to build web applications. It follows the Model-View-Controller design pattern. It implements all the basic features of a core spring framework like Inversion of Control, Dependency Injection.

A Spring MVC provides an elegant solution to use MVC in spring framework by the help of DispatcherServlet. Here, DispatcherServlet is a class that receives the incoming request and maps it to the right resource such as controllers, models, and views.

Spring Web Model-View-Controller:

* **Model:** A model contains the data of the application. A data can be a single object or a collection of objects.
* **Controller:** A controller contains the business logic of an application. Here, the @Controller annotation is used to mark the class as the controller.
* **View:** A view represents the provided information in a particular format. Generally, JSP+JSTL is used to create a view page. Although spring also supports other view technologies such as Apache Velocity, Thymeleaf and FreeMarker.
* **Front Controller:** In Spring Web MVC, the DispatcherServlet class works as the front controller. It is responsible to manage the flow of the Spring MVC application.

Advantages of Spring MVC Framework

* **Separate roles:** The Spring MVC separates each role, where the model object, controller, command object, view resolver, DispatcherServlet, validator, etc. can be fulfilled by a specialized object.
* **Light-weight:** It uses light-weight servlet container to develop and deploy your application.
* **Powerful Configuration:** It provides a robust configuration for both framework and application classes that includes easy referencing across contexts, such as from web controllers to business objects and validators.
* **Rapid development:** The Spring MVC facilitates fast and parallel development.
* **Reusable business code:** Instead of creating new objects, it allows us to use the existing business objects.
* **Easy to test:** In Spring, generally we create JavaBeans classes that enable you to inject test data using the setter methods.
* **Flexible Mapping:** It provides the specific annotations that easily redirect the page.

**3.1.4. HIBERNATE**

**Hibernate** is a framework which provides some abstraction layer means programmer don’t have to worry about the implementations, hibernate do implementations for you internally like Establishing a connection with the database, writing query to perform CRUD operations etc.

It is a java framework which is used to develop persistence logic. Persistence logic means to store and process the data for long use. More precisely Hibernate is a open source, non-invasive, light-weight java ORM (Object relational mapping) framework to develop objects which is independent of the database software and make independent persistence logic in all JAVA, JEE.

Framework means it is a special install-able software that provides abstraction layer on one or more technologies like JDBC, Servlet etc. to simplify or reduce the complexity for development process.

Open Source means:

* Hibernate framework is available for everyone without any cost.
* The source code of Hibernate is also available on the Internet and we can also modify the code.

Light-weight means:

* Hibernate is less in size means the installation package is not big is size.
* Hibernate does not require any heavy container for execution.
* It does not require POJO and POJI model programming.
* Hibernate can be used alone or we can use Hibernate with other java technology and framework.

Non-invasive means:

* The classes of Hibernate application development are loosely coupled classes with respect to Hibernate API i.e. Hibernate class need not to implement hibernate API interfaces and need not to extend from Hibernate API classes.

Functionalities supported by Hibernate framework:

* **Hibernate** framework support Auto DDL operations. In JDBC manually we have to create table and declare the data-type for each and every column. But Hibernate can do DDL operations for you internally like creation of table, drop a table, alter a table etc.
* **Hibernate** supports Auto Primary key generation. It means in JDBC we have to manually set a primary key for a table. But Hibernate can this task for you.
* **Hibernate** framework is independent of Database because it supports HQL (Hibernate Query Language) which is not specific to any database, whereas JDBC is database dependent.
* In **Hibernate**, Exception Handling is not mandatory, whereas in JDBC exception handling is mandatory.
* **Hibernate** supports Cache Memory whereas JDBC does not support cache memory.
* **Hibernate** is a ORM tool means it support Object relational mapping. Whereas JDBC is not object oriented moreover we are dealing with values means primitive data. In hibernate each record is represented as an Object but in JDBC each record is nothing but a data which is nothing but primitive values.

**3.1.5. HTML**

**Hypertext Markup Language (HTML)** is the standard  for creating [web pages](https://en.wikipedia.org/wiki/Web_page) and [web applications](https://en.wikipedia.org/wiki/Web_application). With [Cascading Style Sheets](https://en.wikipedia.org/wiki/Cascading_Style_Sheets) (CSS) and [JavaScript](https://en.wikipedia.org/wiki/JavaScript), it forms a triad of [cornerstone](https://en.wikipedia.org/wiki/Cornerstone) technologies for the [World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web).

[Web browsers](https://en.wikipedia.org/wiki/Web_browser) receive HTML documents from a [web server](https://en.wikipedia.org/wiki/Web_server) or from local storage and [render](https://en.wikipedia.org/wiki/Browser_engine) the documents into multimedia web pages. HTML describes the structure of a web page [semantically](https://en.wikipedia.org/wiki/Semantic_Web) and originally included cues for the appearance of the document.

[HTML elements](https://en.wikipedia.org/wiki/HTML_element) are the building blocks of HTML pages. With HTML constructs, [images](https://en.wikipedia.org/wiki/HTML_element#Images_and_objects) and other objects such as [interactive forms](https://en.wikipedia.org/wiki/Fieldset) may be embedded into the rendered page. HTML provides a means to create [structured documents](https://en.wikipedia.org/wiki/Structured_document) by denoting structural [semantics](https://en.wikipedia.org/wiki/Semantics) for text such as headings, paragraphs, lists, [links](https://en.wikipedia.org/wiki/Hyperlink), quotes and other items. HTML elements are delineated by tags, written using [angle brackets](https://en.wikipedia.org/wiki/Bracket#Angle_brackets). Tags such as <img /> and <input /> directly introduce content into the page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a [scripting language](https://en.wikipedia.org/wiki/Scripting_language) such as [JavaScript](https://en.wikipedia.org/wiki/JavaScript), which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The [World Wide Web Consortium](https://en.wikipedia.org/wiki/World_Wide_Web_Consortium) (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.

**3.1.6. CSS**

**Cascading Style Sheets (CSS)** is a [style sheet language](https://en.wikipedia.org/wiki/Style_sheet_language) used for describing the [presentation](https://en.wikipedia.org/wiki/Presentation_semantics) of a document written in a [markup language](https://en.wikipedia.org/wiki/Markup_language) like [HTML](https://en.wikipedia.org/wiki/HTML). CSS is a cornerstone technology of the [World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web), alongside HTML and [JavaScript](https://en.wikipedia.org/wiki/JavaScript).

CSS is designed to enable the separation of presentation and content, including [layout](https://en.wikipedia.org/wiki/Page_layout), [colors](https://en.wikipedia.org/wiki/Color), and [fonts](https://en.wikipedia.org/wiki/Typeface). This separation can improve content [accessibility](https://en.wikipedia.org/wiki/Accessibility), provide more flexibility and control in the specification of presentation characteristics, enable multiple [web pages](https://en.wikipedia.org/wiki/Web_page) to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or [screen reader](https://en.wikipedia.org/wiki/Screen_reader)), and on [Braille-based](https://en.wikipedia.org/wiki/Braille_display) tactile devices. CSS also has rules for alternate formatting if the content is accessed on a [mobile device](https://en.wikipedia.org/wiki/Mobile_device).

The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable.

The CSS specifications are maintained by the [World Wide Web Consortium](https://en.wikipedia.org/wiki/World_Wide_Web_Consortium) (W3C). Internet media type ([MIME type](https://en.wikipedia.org/wiki/MIME_media_type)) text/css is registered for use with CSS by [RFC 2318](https://tools.ietf.org/html/rfc2318) (March 1998). The W3C operates a free [CSS validation service](https://en.wikipedia.org/wiki/W3C_Markup_Validation_Service#CSS_validation) for CSS documents.

In addition to HTML, other markup languages support the use of CSS including [XHTML](https://en.wikipedia.org/wiki/XHTML), [plain XML](https://en.wikipedia.org/wiki/Plain_Old_XML), [SVG](https://en.wikipedia.org/wiki/Scalable_Vector_Graphics), and [XUL](https://en.wikipedia.org/wiki/XUL).

**3.1.7. JAVASCRIPT**

**JavaScript** often abbreviated as JS, is a [high-level](https://en.wikipedia.org/wiki/High-level_programming_language), [interpreted](https://en.wikipedia.org/wiki/Interpreted_language) [programming language](https://en.wikipedia.org/wiki/Programming_language) that conforms to the [ECMAScript](https://en.wikipedia.org/wiki/ECMAScript) specification. It is a programming language that is characterized as [dynamic](https://en.wikipedia.org/wiki/Dynamic_programming_language), [weakly typed](https://en.wikipedia.org/wiki/Weak_typing), [prototype-based](https://en.wikipedia.org/wiki/Prototype-based_programming) and [multi-paradigm](https://en.wikipedia.org/wiki/Multi-paradigm_programming_language).

Alongside [HTML](https://en.wikipedia.org/wiki/HTML) and [CSS](https://en.wikipedia.org/wiki/CSS), JavaScript is one of the core technologies of the [World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web). JavaScript enables interactive [web pages](https://en.wikipedia.org/wiki/Web_page) and is an essential part of [web applications](https://en.wikipedia.org/wiki/Web_application). The vast majority of [websites](https://en.wikipedia.org/wiki/Website) use it, and major [web browsers](https://en.wikipedia.org/wiki/Web_browser) have a dedicated [JavaScript engine](https://en.wikipedia.org/wiki/JavaScript_engine) to execute it.

As a multi-paradigm language, JavaScript supports [event-driven](https://en.wikipedia.org/wiki/Event-driven_programming), [functional](https://en.wikipedia.org/wiki/Functional_programming), and [imperative](https://en.wikipedia.org/wiki/Imperative_programming) (including [object-oriented](https://en.wikipedia.org/wiki/Object-oriented_programming) and [prototype-based](https://en.wikipedia.org/wiki/Prototype-based_programming)) [programming styles](https://en.wikipedia.org/wiki/Programming_paradigm). It has [APIs](https://en.wikipedia.org/wiki/Application_programming_interface) for working with text, [arrays](https://en.wikipedia.org/wiki/Array_data_type), dates, [regular expressions](https://en.wikipedia.org/wiki/Regular_expression), and the [DOM](https://en.wikipedia.org/wiki/Document_Object_Model), but the language itself does not include any [I/O](https://en.wikipedia.org/wiki/Input/output), such as [networking](https://en.wikipedia.org/wiki/Computer_network), [storage](https://en.wikipedia.org/wiki/Data_storage), or [graphics](https://en.wikipedia.org/wiki/Computer_graphics) facilities. It relies upon the host environment in which it is embedded to provide these features.

Initially only implemented [client-side](https://en.wikipedia.org/wiki/Client-side) in web browsers, JavaScript engines are now embedded in many other types of host software, including [server-side](https://en.wikipedia.org/wiki/Server-side) in web servers and databases, and in non-web programs such as word processors and [PDF](https://en.wikipedia.org/wiki/Portable_Document_Format) software, and in runtime environments that make JavaScript available for writing mobile and desktop applications, including desktop widgets.

The terms Vanilla JavaScript and Vanilla JS refer to JavaScript not extended by any frameworks or additional libraries. Scripts written in Vanilla JS are plain JavaScript code.

Although there are similarities between JavaScript and [Java](https://en.wikipedia.org/wiki/Java_(programming_language)), including language name, [syntax](https://en.wikipedia.org/wiki/Syntax_(programming_languages)), and respective [standard libraries](https://en.wikipedia.org/wiki/Standard_library), the two languages are distinct and differ greatly in design. JavaScript was influenced by programming languages such as [Self](https://en.wikipedia.org/wiki/Self_(programming_language)) and [Scheme](https://en.wikipedia.org/wiki/Scheme_(programming_language)).

**3.1.8. LOGGER**

Logger is a class in the org.apache.log4j package. We have to initialize one Logger object for each Java class. We use Logger’s methods to generate log statements. Log4j provides the factory method to get Logger objects.

The Logger class has some methods that are used to print application status.

We have five methods in the Logger class

* info()
* debug()
* warn()
* fatal()
* error()

**3.2.** **SOFTWARES**

**3.2.1 APACHE TOMCAT**

**Apache Tomcat**, often referred to as Tomcat Server, is an open-source [Java Servlet Container](https://en.wikipedia.org/wiki/Servlet_container) developed by the [Apache Software Foundation](https://en.wikipedia.org/wiki/Apache_Software_Foundation) (ASF). Tomcat implements several [Java EE](https://en.wikipedia.org/wiki/Java_Platform,_Enterprise_Edition) specifications including [Java Servlet](https://en.wikipedia.org/wiki/Java_Servlet), [JavaServer Pages](https://en.wikipedia.org/wiki/JavaServer_Pages) (JSP), [Java EL](https://en.wikipedia.org/wiki/Unified_Expression_Language), and [WebSocket](https://en.wikipedia.org/wiki/WebSocket), and provides a "pure [Java](https://en.wikipedia.org/wiki/Java_(programming_language))" [HTTP](https://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol) [web server](https://en.wikipedia.org/wiki/Web_server) environment in which [Java](https://en.wikipedia.org/wiki/Java_(programming_language)) code can run.

Tomcat is developed and maintained by an open community of developers under the auspices of the [Apache Software Foundation](https://en.wikipedia.org/wiki/Apache_Software_Foundation), released under the [Apache License](https://en.wikipedia.org/wiki/Apache_License) 2.0 license, and is [open-source software](https://en.wikipedia.org/wiki/Open-source_software).

**Web** **Application**:

It has also added user- as well as system-based web applications enhancement to add support for deployment across the variety of environments. It also tries to manage sessions as well as applications across the network.

Tomcat is building additional components. A number of additional components may be used with Apache Tomcat. These components may be built by users should they need them or they can be downloaded from one of the mirrors.

**Features**:

Tomcat 7.x implements the Servlet 3.0 and JSP 2.2 specifications. It requires Java version 1.6, although previous versions have run on Java 1.1 through 1.5. Versions 5 through 6 saw improvements in [garbage collection](https://en.wikipedia.org/wiki/Garbage_collection_(computer_science)), JSP parsing, performance and scalability. Native wrappers, known as "Tomcat Native", are available for [Microsoft Windows](https://en.wikipedia.org/wiki/Microsoft_Windows) and Unix for platform integration.

Tomcat 8.x implements the Servlet 3.1 and JSP 2.3 Specifications. Apache Tomcat 8.5.x is intended to replace 8.0.x and includes new features pulled forward from Tomcat 9.0.x. The minimum Java version and implemented specification versions remain unchanged.

**History**:

Tomcat started off as a servlet [reference implementation](https://en.wikipedia.org/wiki/Reference_implementation_(computing)) by [James Duncan Davidson](https://en.wikipedia.org/wiki/James_Duncan_Davidson), a software architect at Sun Microsystems. He later helped make the project [open source](https://en.wikipedia.org/wiki/Open-source_software) and played a key role in its donation by Sun Microsystems to the Apache Software Foundation. The [Apache Ant](https://en.wikipedia.org/wiki/Apache_Ant) software build automation tool was developed as a side-effect of the creation of Tomcat as an open source project.

Davidson had initially hoped that the project would become open sourced and, since many open source projects had [O'Reilly](https://en.wikipedia.org/wiki/O%27Reilly_Media) books associated with them featuring an animal on the cover, he wanted to name the project after an animal. He came up with [Tomcat](https://en.wikipedia.org/wiki/Cat) since he reasoned the animal represented something that could fend for itself. Although the tomcat was already in use for another O'Reilly title, his wish to see an animal cover eventually came true when O'Reilly published their Tomcat book with a [snow leopard](https://en.wikipedia.org/wiki/Snow_leopard) on the cover in 2003.

**3.2.2. MySQL**

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons −

* MySQL is released under an open-source license. So you have nothing to pay to use it.
* MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
* MySQL uses a standard form of the well-known SQL data language.
* MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
* MySQL works very quickly and works well even with large data sets.
* MySQL is very friendly to PHP, the most appreciated language for web development.
* MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).
* MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

**3.2.3. ECLIPSE**

Eclipse is an [integrated development environment](https://en.wikipedia.org/wiki/Integrated_development_environment) (IDE) used in [computer programming](https://en.wikipedia.org/wiki/Computer_programming), and is the most widely used Java IDE. It contains a base [workspace](https://en.wikipedia.org/wiki/Workspace) and an extensible [plug-in](https://en.wikipedia.org/wiki/Plug-in_(computing)) system for customizing the environment. Eclipse is written mostly in [Java](https://en.wikipedia.org/wiki/Java_(programming_language)) and its primary use is for developing Java applications, but it may also be used to develop applications in other programming languages via plug-ins, including Ada, ABAP, C, C++, C#, Clojure, COBOL, D, Erlang, Fortran, Groovy, Haskell, JavaScript, Julia, Lasso, Lua, NATURAL, Perl, PHP, Prolog, Phython, R, Ruby (including Ruby on Rails framework), Rust, Scala and Scheme. It can also be used to develop documents with [LaTeX](https://en.wikipedia.org/wiki/LaTeX) (via a TeXlipse plug-in) and packages for the software [Mathematica](https://en.wikipedia.org/wiki/Mathematica). Development environments include the Eclipse Java development tools (JDT) for Java and Scala, Eclipse CDT for C/C++, and Eclipse PDT for PHP, among others.

The initial [codebase](https://en.wikipedia.org/wiki/Codebase) originated from [IBM VisualAge](https://en.wikipedia.org/wiki/IBM_VisualAge). The Eclipse [software development kit](https://en.wikipedia.org/wiki/Software_development_kit) (SDK), which includes the Java development tools, is meant for Java developers. Users can extend its abilities by installing plug-ins written for the Eclipse Platform, such as development toolkits for other programming languages, and can write and contribute their own plug-in modules. Since the introduction of the [OSGi](https://en.wikipedia.org/wiki/OSGi) implementation ([Equinox](https://en.wikipedia.org/wiki/Equinox_(OSGi))) in version 3 of Eclipse, plug-ins can be plugged-stopped dynamically and are termed (OSGI) bundles.

Eclipse [software development kit](https://en.wikipedia.org/wiki/Software_development_kit) (SDK) is [free and open-source software](https://en.wikipedia.org/wiki/Free_and_open-source_software), released under the terms of the [Eclipse Public License](https://en.wikipedia.org/wiki/Eclipse_Public_License), although it is incompatible with the [GNU General Public License](https://en.wikipedia.org/wiki/GNU_General_Public_License).[[10]](https://en.wikipedia.org/wiki/Eclipse_(software)#cite_note-10) It was one of the first IDEs to run under [GNU Classpath](https://en.wikipedia.org/wiki/GNU_Classpath) and it runs without problems under [IcedTea](https://en.wikipedia.org/wiki/IcedTea).

**CHAPTER-4**

**PROJECT OVERVIEW**

**4.1. PROJECT SCOPE**

The system functions and features of our system will include the following:

• **Registration**

This function allows the admin-HR and user to register as a user to interact

With the system. The system requires the user to login before viewing and editing

Any information.

• **Add Candidate Requirement**

HR will be able to add candidate details in the database for scheduling their interview based on their requirement ID.

• **Edit Candidate Requirement**

HR will be able to edit the details of candidate if required in case of any discrepancy, and the updated details are further stored in the database.

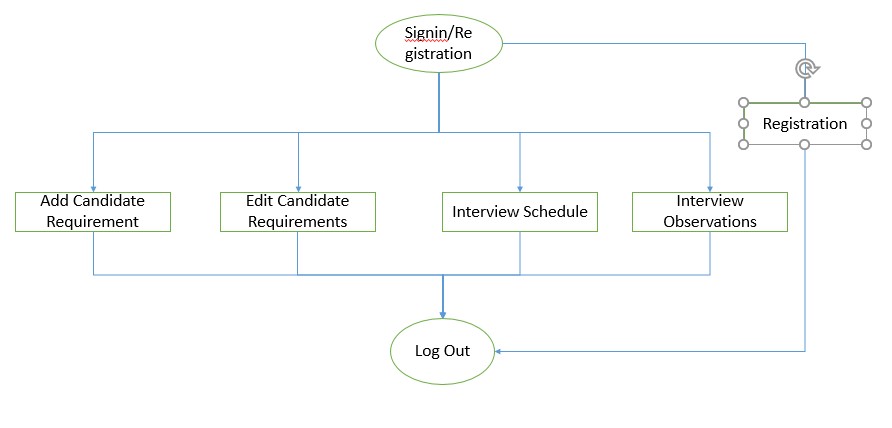
• **Interview Scheduling**

The HR will schedule an interview for the candidate. In this procedure, a venue for attending the interview is also been allotted to the candidate based on the business requirement.

• **Interview Observation**

At the final stage, HR will also be able to observe the interview of a candidate based on his/her Rank (performance).

**4.2. PROCESS ARCHITECTURE**



**4.3. MODULES**

The entire project mainly consists of modules:

* Admin-HR/User Module
* Add Candidate requirement Module
* Edit Candidate requirements Module
* Interview Schedule Module
* Interview Observation Module

**Admin-HR/User Module**

* Register for new user.
* Login with credentials.
* Validate the login credentials.
* View the list of registered candidates.
* Submit the data to the database.

**Add Candidate Requirement Module**

* Register for new candidate.
* It determines the mode of interview.
* Interview is determined based on the available vacancies and the required experience as per the table.
* Details entered by HR is saved in the database along with the mode of Interview.

**Edit Candidate Requirements Module**

* The HR will re-determine the mode of interview and update a job requirement already available in the system
* Again the mode of interview will be based on the required number of vacancies and the amount of experience as per the table.

**Interview Schedule Module**

* The interview for the entered requirement ID should not have been already scheduled.
* The closing date for the job requirement should not be over.
* Maximum number of candidates allowed to be scheduled for the given requirement must be less than or equal to three times the vacancies.
* Interview ID will be generated for the each candidate based on the current requirement.

**Interview Observation Module**

* It will generate candidate’s interview result based on candidate’s marks, time for joining and rank.
* Store the interview result details into the system.
* The status of candidate is set to 0 in case he/she is rejected in the interview.

**4.4. REQUIREMENT ENGINEERING**

Systematic requirements analysis is also known as requirements engineering. It is sometimes referred to loosely by names such as requirements gathering, requirements capture, or requirements specification. The term requirements analysis can also be applied specifically to the analysis proper, as opposed to elicitation or documentation of the requirements, for instance. Requirements engineering can be divided into discrete chronological steps:

* Requirements elicitation,
* Requirements analysis and negotiation,
* Requirements specification,
* System modeling,
* Requirements validation,
* Requirements management.

Systems engineering and software engineering that is concerned with determining the goals, functions, and constraints of hardware and software systems. In some life cycle models, the requirement engineering process begins with a feasibility study activity, which leads to a feasibility report. If the feasibility study suggests that the product should be developed, then requirement analysis can begin. The requirement engineering provides the appropriate mechanism for Requirement engineering according to Laplante (2007) is "a sub discipline of understanding what customer wants.

**CHAPTER-5**

**BUSINESS REQUIREMENTS**

**5.1. HIGH LEVEL BUSINESS REQUIREMENTS**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Business Requirement ID** | **Short Description** | **Description in detail** |
| 1 | Req\_1 | User Registration | Used to register the details of a candidate into the system. The system should calculate the rank for each candidate and store the details in the system. |
| 2 | Req\_2 | Add Candidate requirement | Used by company HR to add a new job requirement for their company. |
| 3 | Req\_3 | Edit Candidate Requirements | Used by HR to make modification for his/her request for candidate which has been already registered in the system. |
| 4 | Req\_4 | Interview Schedule | Used by HR to schedule the interview for the candidates based on their profile and job requirement. |
| 5 | Req\_5 | Interview Observations | Used by HR executives to register the details of candidate interview observation into the system. The HR Executive should have the details of the interview observations to be entered into the system. |

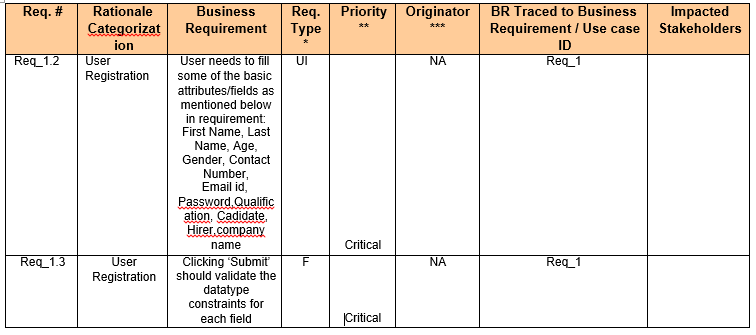
**5.2. DETAILED BUSINESS REQUIREMENTS**

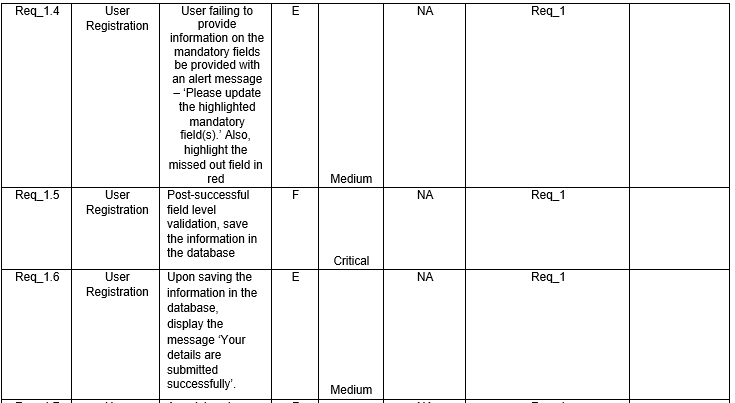
**5.2.1**. **Functional Requirements**

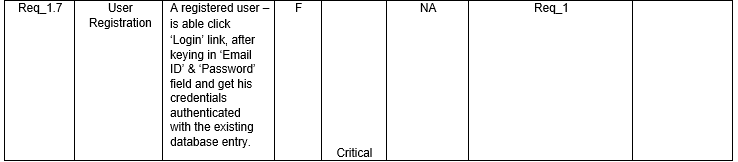
The Requirements in this document are prioritized as follows:

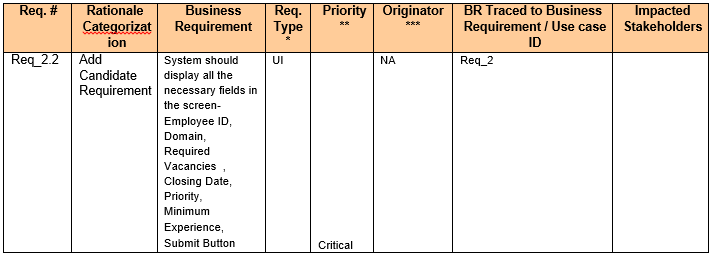
|  |  |  |
| --- | --- | --- |
| **Value** | **Rating** | **Description** |
| 1 | Critical | This requirement is critical to the success of the project. The project will not be possible without this requirement. |
| 2 | High | This requirement is high priority, but the project can be implemented at a bare minimum without this requirement. |
| 3 | Medium | This requirement is somewhat important, as it provides some value but the project can proceed without it. |
| 4 | Low | This is a low priority requirement, or a “nice to have” feature, if time and cost allow it. |
| 5 | Future | This requirement is out of scope for this project, and has been included here for a possible future release. |

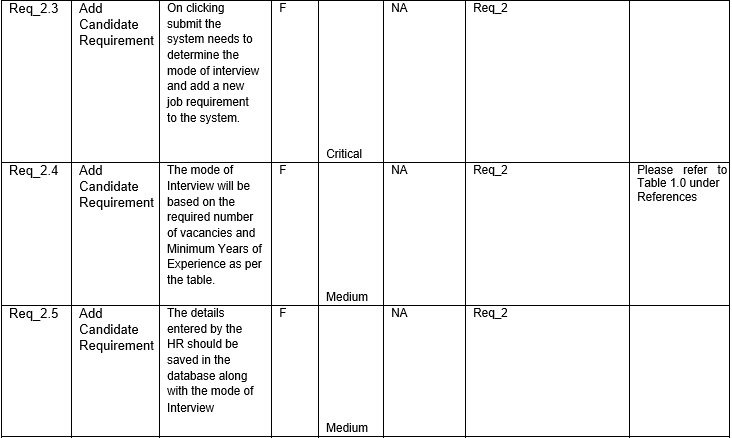
Detailed Description Table:

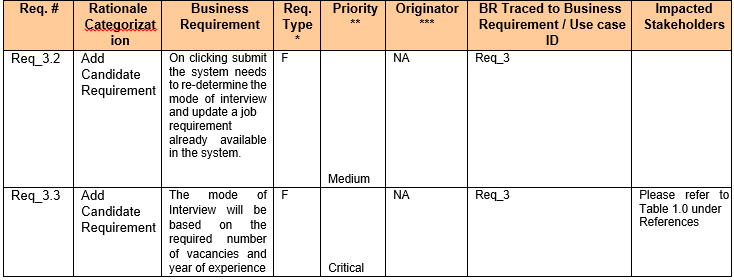


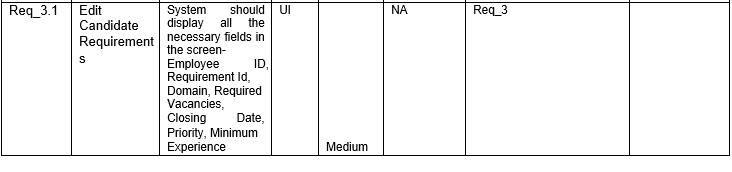


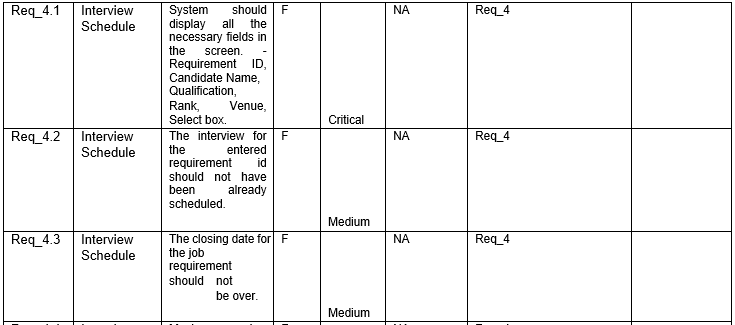


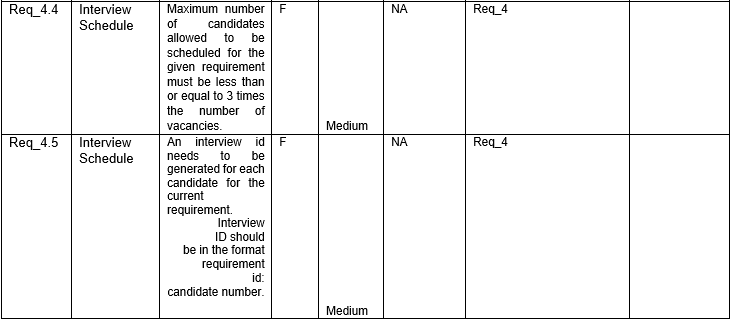


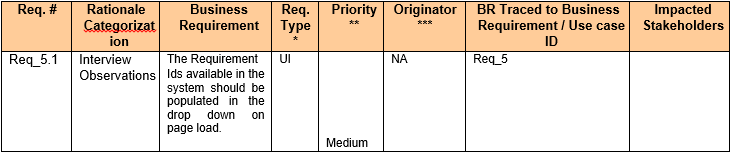


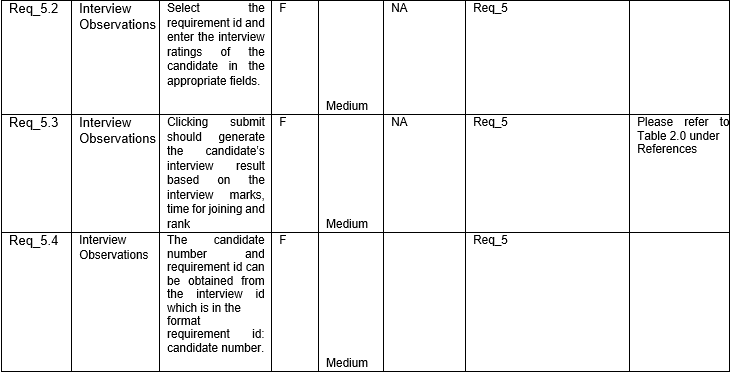


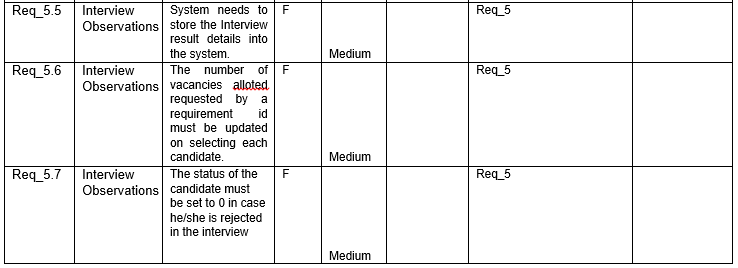






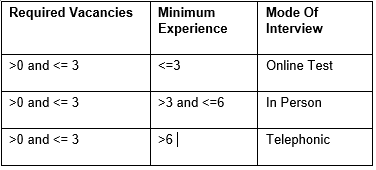


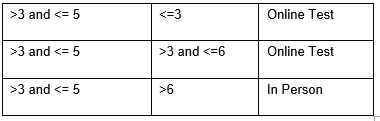




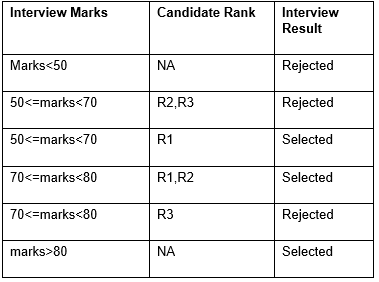
**5.2.2. References:**

**MODE OF INTERVIEW**

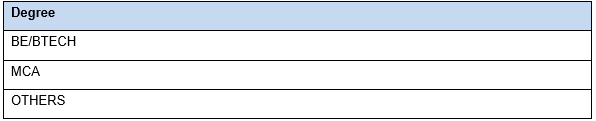




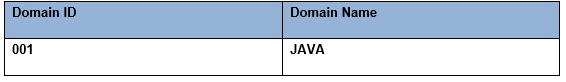
**INTERVIEW OBSERVATION**

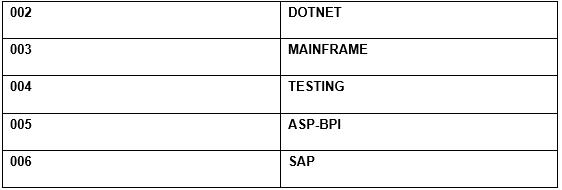


**DEGREE\_MASTERS**

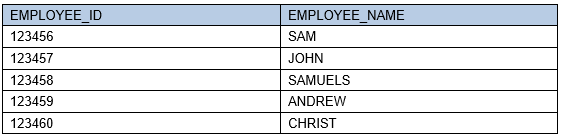


**DOMAIN\_MASTERS**





**EMPLOYEE\_MASTER**



**CHAPTER-6**

**ANALYSIS**

**6.1. HARDWARE REQUIREMENTS**

* Desktop PC with 8GB RAM.

**6.2. SOFTWARE REQUIREMENTS**

* Eclipse IDE for Java EE Developers (Oxygen)
* Maven 3.6.0
* Tomcat 8.0
* MySQL

**CHAPTER-7**

**TABLES**

7.1. Table 1.0(Candidate)

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Type** | **Data Type** | **Mandatory** |
| emailId | Varchar(255) | AlphaNumeric | Yes |
| Age | Int(11) | Numeric | Yes |
| candidateNumber | Int(11) | Numneric | Yes |
| companyName | Varchar(255) | AlphaNumeric | Yes |
| contactNumber | Varchar(255) | Numeric | Yes |
| firstName | Varchar(255) | Alphabetic | Yes |
| Gender | Varchar(255) | Alphabetic | Yes |
| lastName | Varchar(255) | Alphabetic | Yes |
| Password | Varchar(255) | Alphanumeric | Yes |
| Qualification | Varchar(255) | Alphanumeric | Yes |
| userType | Varchar(255) | Alphabetic | Yes |

**7.2. Table 2.0(candidateRequirement)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Field Type** | | **Data Type** | **Mandatory** |
| requirementId | Int(11) | | Numeric | Yes |
| closindDate | Date | Numeric | | Yes |
| Domain | Varchar(255) | AlphaNumeric | | Yes |
| employeeId | Varchar(255) | AlphaNumeric | | Yes |
| minExperience | Int(11) | Numeric | | Yes |
| modeOfInterview | Varchar(255) | AlphaNumeric | | Yes |
| Priority | Int(11) | Numeric | | Yes |
| requiredVacancies | Int(11) | Numeric | | Yes |
| Qualification | Varchar(255) | Alphanumeric | | Yes |
| maxNoCan | Int(11) | Numeric | | Yes |

**7.3. Table 3.0(interviewSchedule)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Type** | **Data Type** | **Mandatory** |
| interviewId | Varchar(255) | AlphaNumeric | Yes |
| candidateName | Varchar(255) | Alphabetic | Yes |
| Qualification | Varchar(255) | AlphaNumeric | Yes |
| Rank | Varchar(255) | Alphanumeric | Yes |
| requirementId | Varcjar(255) | AlphaNumeric | Yes |
| Venue | Varchar(255) | AlphaNumeric | Yes |

**7.4. Table 4.0(interviewObservation)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Field Name** | | **Field Type** | | **Data Type** | | **Mandatory** |
| interviewId | Varchar(255) | | AlphaNumeric | | Yes | |
| candidateStatus | Int(11) | | Numeric | | Yes | |
| interviewMarks | Varchar(255) | | Numeric | | Yes | |
| Rank | Varchar(255) | | Numeric | | Yes | |
| Toi | Varchar(255) | | AlphaNumeric | | Yes | |
| requirementId | Int(11) | | Numeric | | Yes | |
| candidateName | Varchar(255) | | Alphabetic | | Yes | |