

PROJECT REPORT ON CUSTOMER MANAGEMENT SYSTEM

YEDU KRISHNAN C U

845325

CHN19AJ029

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ABSTRACT

The goal of this project was a simple Customer Database Management web application, where personnel with proper authorization would be able to perform create, store, manipulate and remove customer details to maintain customer data set.

Customer management is defined as the process of managing the relationship between an organisation, its people and its customers over time. Every organization, whether big or small, encounters data management challenges and have to overcome it for the organization to be successful. The challenges vary from organization to organization and therefore we have designed an exclusive employee management system.

This application is developed exclusively for a customer manager and makes sure no one else has access to it. The manager is provided with options to add, edit or to delete customers from existing database. Application also provides a search module where the manager can search the customer using first name and/or last name and also the unique id provided to each customer, the search result returns a single customer in the case of id and list of customers which matches name in the data to the name provided by manager when the manager chooses to search using customer name.

The application is built using few of the most secure and widely used java frameworks namely Spring and Hibernate. Spring is one of the most used Java EE Frameworks which helps in inversion of control or Dependency injection. Hibernate is also one the most popular ORM frameworks used for mapping domain classes to relational databases. Here technology stack used was Spring - Hibernate combination, more specifically Java Spring 5, Hibernate, MySQL and basic HTML with CSS. Customer details are stored in a MySQL database while the HTML and CSS along with JavaScript provides the look and feel of the application.

INTRODUCTION

Customer management system facilitates managers to create, manipulate, store and delete customer records using a web application. It stores all the customer's information in a database which the only the managers of the organization have access to. The application begins with a login page where the manager can provide his credentials to verify his authority, which takes the manager to a page which displays the list of all existing customer and an option to perform the following CRUD operations on the database:

- Add a new Customer to the database.
- Search an existing customer using his name or id.
- Display all customers
- Update/Delete an existing customer.

REQUIREMENT SPECIFICATION

For building and executing this software, these requirements have to be followed.

1. Java 1.8+

JDK is an acronym for Java Development Kit. The Java Development Kit (JDK) is a software development environment which is used to develop java applications and applets. It physically exists. It contains JRE + development tools. JDK is an implementation of any one of the below given Java Platforms released by Oracle corporation: Standard Edition Java Platform, Enterprise Edition Java Platform, Micro Edition Java Platform. The JDK contains a private Java Virtual Machine (JVM) and a few other resources such as an interpreter/loader (Java), a compiler (javac), an archiver (jar), a documentation generator (Javadoc) etc. to complete the development of a Java Application.

2. Tomcat Server 7.0 or above

Apache Tomcat (sometimes simply "Tomcat") is an open-source implementation of the Java Servlet, Java Server Pages, Java Expression Language and WebSocket technologies. Tomcat provides a "pure Java" HTTP web server environment in which Java code can run. Tomcat is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation, released under the Apache License 2.0 license.

3. MySQL database 5.0 or above

MySQL is a relational database management system based on the Structured Query Language, which is the popular language for accessing and managing the records in the database. The data in MySQL database are stored in tables.

4. Eclipse IDE / STS 2018-2019

5. Maven 3.0 or above

Maven is a software project management and comprehension tool. Based on the concept of a project object model (POM), Maven can manage a project's build, reporting and documentation from a central place.

6. JUnit 4

JUnit is a unit testing framework for the Java programming language. JUnit has been important in the development of test-driven development, and is one of a family of unit testing frameworks. Its main use is to write repeatable tests for our application code units

ARCHITECTURAL DESIGN

The whole software design can be divided mainly into 3 parts - WebUI, a middleware layer and a persistence layer.

Web UI is composed of HTML, CSS, JavaScript components which together provides the interface which acts as the middle man between user and the application and is very appealing and simple. The UI is kept simple so that every guidelines or instructions to the user can be directly given through UI.

Next comes the server unit that consist of another four blocks - the Presentation layer, Business layer, Integration layer and a domain model.

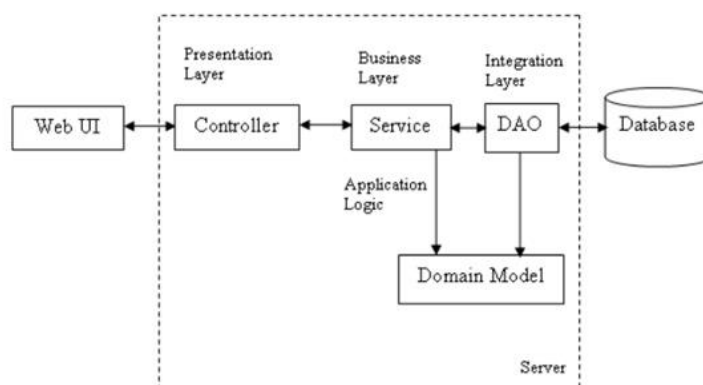
The presentation layer contains various Controllers. These are responsible for all the controlling and coordination of mappings between web UI and the server.

Next comes the Business layer which is otherwise called as the service layer. The service layer consists of application logics and functions related to business level actions.

Next is the integration layer or Data access object layer that is responsible for maintaining connection to the database. All the methods that are implemented in this web application like addition of employee details, deletion of employee details, manipulation of details are implemented into database through this layer.

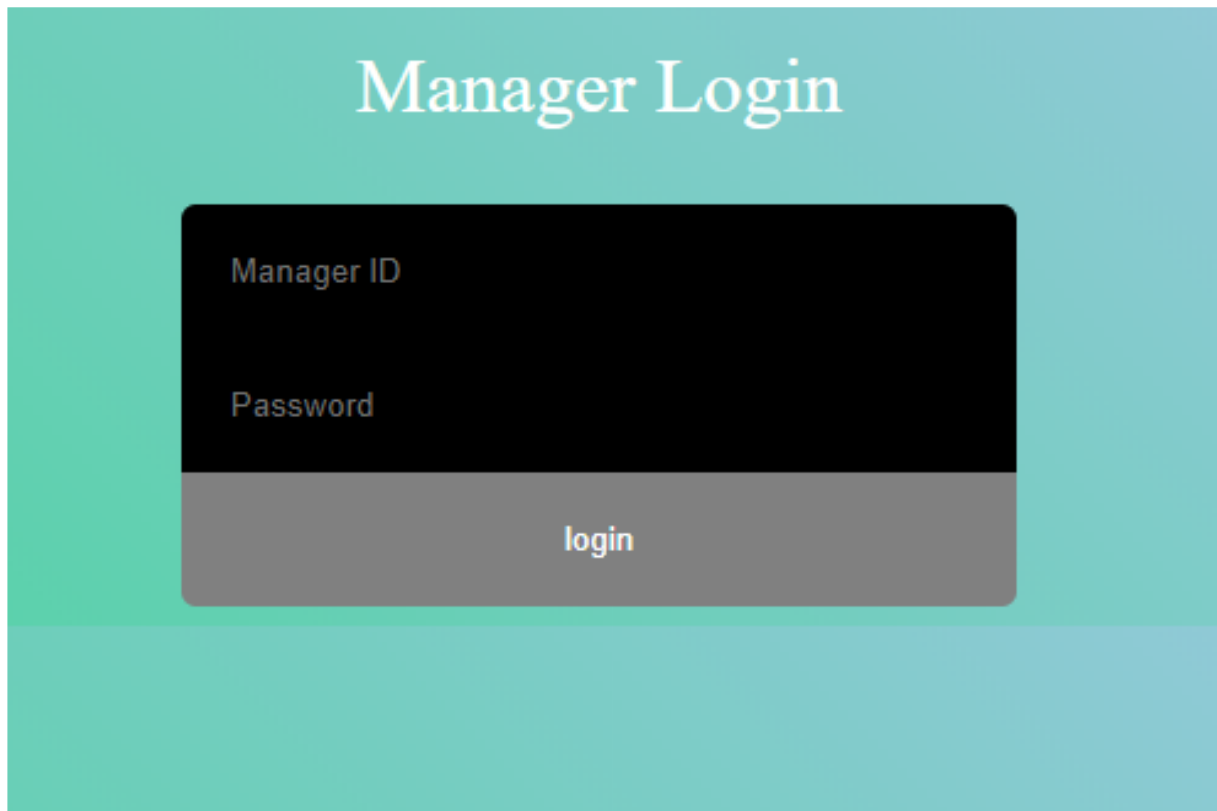
Domain Model is the layer containing entity classes. Every POJO class relating to the application is included under this section.

The last layer, that is persistence layer is nothing but the database where all the information is getting stored or manipulated.



Screenshots of UI

1. Login



A screenshot of a web application's login interface. The background is a teal-to-blue gradient. At the top, the text "Manager Login" is displayed in a white, serif font. Below this, there is a dark gray rectangular box with rounded corners. Inside this box, the labels "Manager ID" and "Password" are positioned above their respective input fields. Both labels and the input fields are dark gray. At the bottom of the dark gray box is a light gray rectangular button with the word "login" in a white, sans-serif font.

2.Customer List

New Customer		List Customers		Customer List				search	Enter customer name or id
ID	First Name	Last Name	Date of birth	Gender	Email-ID	Phone No	Action		
3	Yedu	Krishnan	1997-11-02	male	yedukcu@gmail.com	+917736483750	DELETE UPDATE		
5	tendulkar	sachin	1875-02-22	male	st@gma	565464	DELETE UPDATE		
6	deva	khana	1344-02-22	male	asdcu@gmail.com	5465	DELETE UPDATE		
7	shanthanu	devan	1999-03-31	male	sdasd@asdas	1231255	DELETE UPDATE		
8	Ching	min	1999-03-22	female	chinmi@gas123	123123	DELETE UPDATE		
10	neguur	salam	1333-12-31	male	negurroz@gmad	123123123	DELETE UPDATE		
11	qweqwe	qweqwe	1211-03-21	male	thar@rors	32234	DELETE UPDATE		
12	joseph	tharaw	3111-12-12	male	negurosp@gma	124566	DELETE UPDATE		

3.Add new Customer

Customer's First Name

First Name

Customer's Last Name

Last Name

Date of Birth

dd - mm - yyyy

Gender

Male/Female

Email-ID

Email

Contact No

Phone Number

Register

Reset

List Customers

4.Search Customer

localhost8080/Customer_Management/searchCustomer?val=k

New Customer List Customers

Customer List

search Enter customer name or id

ID	First Name	Last Name	Date of birth	Gender	Email-ID	Phone No	Action
3	Yedu	Krishnan	1997-11-02	male	yedukcu@gmail.com	+917736483750	DELETE UPDATE
6	deva	khana	1344-02-22	male	asdcu@gmail.com	5465	DELETE UPDATE
14	Yedu	Krishnan	1997-11-02	male	yedukcu@gmail.com	07736483750	DELETE UPDATE

CONCLUSION AND FUTURE SCOPE

The "Customer Management System " has been developed to override the problems prevailing in the practicing manual system. This Web Application is supported to eliminate and, in some cases, reduce the hardships faced in existing system. Moreover, this system is designed for the particular need of various companies to carry out the operations in a smooth and effective manner.

In future, we could implement this web application as a mobile application supportable by both android and iOS mobile phones. I would also try to implement some extra features in the customer management web application like customer patterns, likes and dislikes, most bought product, credit scores, etc. I would also like to modify our current UI to a more attractive UI by using latest technologies in the future.

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