

Claims Management System

A Project Work

submitted in partial fulfillment of the
requirements for the degree of

Bachelor of Technology

in

Computer Science and Engineering

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2019

DECLARATION

Project Title: **CLAIMS MANAGEMENT SYSTEM**

Degree for which the project work is submitted: **Bachelor in Technology in Computer
Science and Engineering**

I declare that the presented project represents largely my own ideas and work in my own words. Where others ideas or words have been included, I have adequately cited and listed in the reference materials. The report has been prepared without resorting to plagiarism. I have adhered to all principles of academic honesty and integrity. No falsified or fabricated data have been presented in the report. I understand that any violation of the above will cause for disciplinary action by the Institute, including revoking the conferred degree, if conferred, and can also evoke penal action from the sources which have not been properly cited or from whom proper permission has not been taken.

Shriyans Nidhish
(768818)

Date:

CERTIFICATE

It is certified that the work contained in this project entitled **“Claims Management System”** submitted by, Shriyans Nidhish (768818), for the degree of Bachelor in Technology in Computer Science and Engineering is absolutely based on **his/her** own work carried out under my supervision and this project work has not been submitted elsewhere for any degree.

Mr Sabbir Poonawala
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Chapter 1

Abstract

Claims Management System is developed to provide an online platform for the staff workers to manage the claim activities. By changing the current manual claim method to computerised system, the effectiveness and efficiency of claim process have been improved, for instances this system can quicken the approval process as well as allow applicants to check the status of claim application, minimizes human errors in calculation and provides several type of claim report. By putting the system online, there is no more problems of time and distance. Several frameworks such as Spring and hibernate along with, Model-View-Controller (MVC) architecture is also used for developing this project. Data dictionary is produced for better understanding on system database. Several user interfaces are created to visualise the actual system environment. Last but not least, Hypertext Mark-up Language(HTML), Cascading Style Sheets(CSS), JavaScript, Java Server Page(JSP), Spring, Hibernate and Oracle are used during system development. As a conclusion, Claims Management system can replace the existing manual claim management as well as bring benefits to Organization in which it is used.

Chapter 2

Introduction

2.1 Overall Description

Claims Management System project is implemented in java platform using oracle as backend application. Main aim of this project is to develop an online application for insurance company to atomize work procedure, The Claims Management System will be a platform independent solution developed that will have all the features and functionalities which shall let the insurance company allow its customer to submit a claim requests, view the real-time status of the submitted claims and also submit additional documents as required. The solution will also address the admins needs to view the submitted claims, view the member eligibility as per the policy plan and approve the claims.

In existing system manual procedure is followed where records are used to maintain data which is a time taking process and require more man power and calculating claim amounts...etc. are done manually.

In present system there is no need of human interference in calculating any details. Total work is done using management system which will save time and less paper work and even human resource.

This application is implemented in two modules, Admin and Customer.

Admin Module: This module is the main module in which admin, super user, will look after the claims that are to be processed. He is the person responsible for the final processing of all the claims and segregating fake or pseudo claim requests.

Customer Module: Using this module customer can register and login after which he/she can raise a claim request which will be further processed by the admin. If the admin approves then customer will be notified and requested amount will be sanctioned.

2.2 Purpose

Claims Management System (CMS) application. CMS is basically a system that helps members to do member registration for claims, profile update, Claim Request, Search Claims and View Status, Claim Process. This system helps in online processing of claims by the admin after it's verification so that no pseudo claim requests are granted approval. Hence, this system also helps in overcoming the old procedure that was followed where manual calculations were done which used to consume lots of time and resources. These are the few important modules in the system.

- Member registration & credential authentication.
- Member profile update.
- Member claim request.
- Search Claim and View Status
- Claim processing.

Chapter 3

Proposed Model

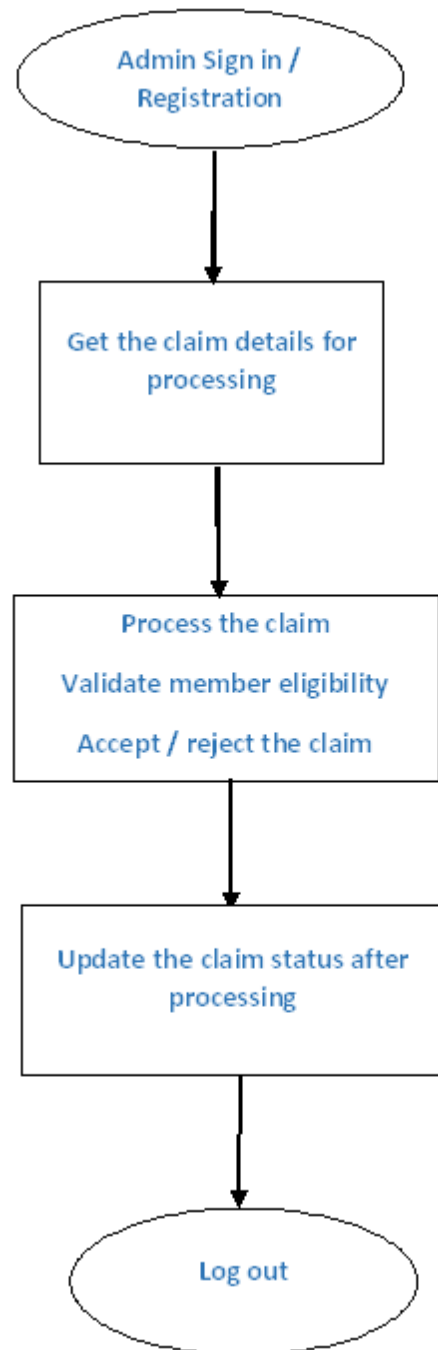
3.1 Process Architecture

Below is the overall functional flow of the project including the components of interaction

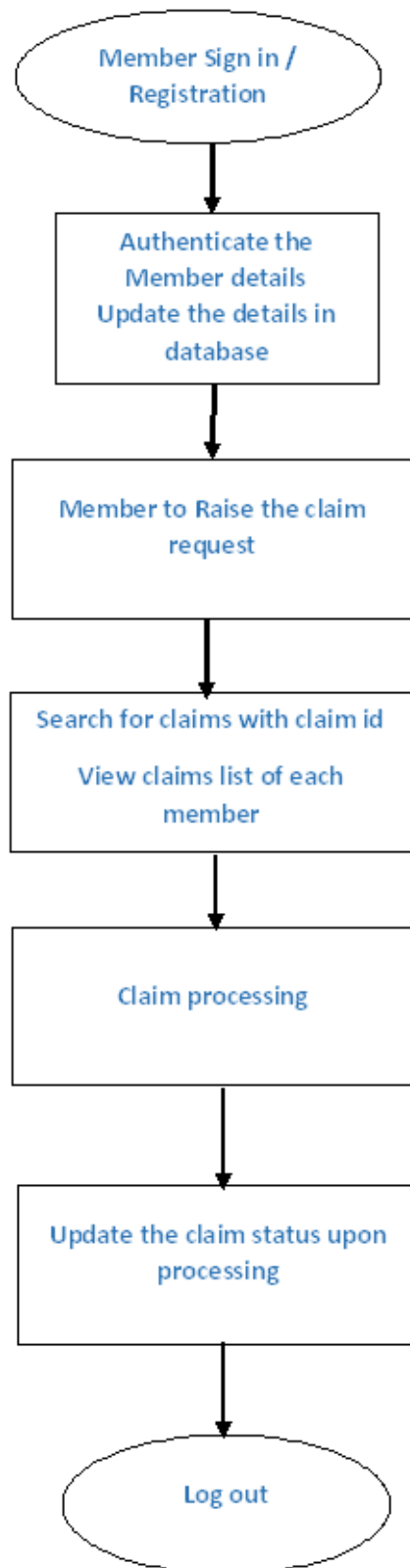
- Create Member Registration page & Authentication.
- Create Admin Registration page & Authentication.
- Get and manage Member details.
- Get the Claim details and save them.
- Process the claims.
- Update the claim status
- List the claims request for each member.
- Display the details of the claims.
- Disconnect on log off.

3.2 System Flow

3.2.1 Admin Process flow



3.2.1 Member Process flow



3.3 Business Requirements

S.No.	Business Requirement ID	Short Description	Description in detail	Interacting Business Processes
1	Req_1	Initial Selection	Ability of the system to allow to user to choose Admin/User Login/Registration	
2	Req_2	Member Registration	Ability of the system to procure the fundamental details of the Member	
3	Req_3	Member Authentication	Ability of the system to authenticate the Member credentials of the registered Member	
4	Req_4	Admin Registration	Ability of the system to procure the fundamental details of the Admin	
5	Req_5	Admin Authentication	Ability of the system to authenticate the credentials of the registered Admin	
6	Req_6	Claim request	Ability of the system to procure the Claim details	
7	Req_7	Claim process	Ability of the system to process the claim based on member eligibility	
8	Req_8	Display claim details at member level	Ability of the system to display the claim details at member level	
9	Req_9	Member / Admin logoff	Ability of the system to enable Member / Admin to logoff	

Req. #	Rationale Categorization	Business Requirement	Req. Type *	Priority **	Originator ***	BR Traced to Business Requirement / Use case ID	Impacted Stakeholders
Req_1.1	Initial selection	Screen should display the option for Admin login / Registration and Member login / Registration	UI	Critical	NA	Req_1	
Req_2.1	Member Registration	When the Member clicks on the registration link, it should re-direct to registration form.	UI	Critical	NA	Req_2	
Req_2.2	Member Registration	Member needs to fill some of the basic attributes/fields as mentioned below in requirement: First Name, Last Name, Age, Gender, Contact Number, Member Id, Password	UI	Critical	NA	Req_2	Please refer to Table 1.0 under References
Req_2.3	Member Registration	Clicking 'Submit' should validate the	F		NA	Req_2	

		datatype constraints for each field		Critical			
Req_2.4	Member Registration	Member failing to provide information on the mandatory fields be provided with an alert message – ‘Please update the highlighted mandatory field(s).’ Also, highlight the missed out field in red	E	Medium	NA	Req_2	
Req_2.5	Member Registration	Post-successful field level validation, save the information in the database	F	Critical	NA	Req_2	
Req_2.6	Member Registration	Upon saving the information in the database, display the message ‘Your details are submitted successfully’.	E	Medium	NA	Req_2	
Req_2.7	Member Registration	Admin should be able to view the	F		NA	Req_2	

	New Members for registration	Critical			
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Req. #	Rationale Categorization	Business Requirement	Req. Type *	Priority **	Originator ***	BR Traced to Business Requirement / Use case ID	Impacted Stakeholders
Req – 2.9	Member Registration	If rejected, the Member should not be allowed to login with the registered credentials	F	Critical	NA	Req _2	
Req – 2.10	Member Registration	Member should get SMS on Approval / Rejection	E	Medium	NA	Req _2	
Req – 3.1	Credential Authentication	A registered Member – is able click ‘Login’ link, after keying in ‘Member ID’ & ‘Password’ field and get his credentials authenticated with the existing database entry.	F	Critical	NA	Req _3	
Req – 4.1	Admin Registration	When the Admin clicks on the registration link, it should re-direct to registration form.	U I	Critical	NA	Req _4	
Req – 4.2	Admin Registration	Admin needs to fill some of the basic attributes/fields as mentioned below in requirement: First Name, Last	U I		NA	Req _4	Please refer to Table 2.0 under References

		Name, Age, Gender, Contact Number, Vendor Id, Password		Critical			
Req – 4.3	Admin Registratio n	Clicking ‘Submit’ should validate the datatype constraints for each field	F	Critical	NA	Req _4	
Req – 4.4	Admin Registratio n	Admin failing to provide information on the mandatory fields be provided with an alert message – ‘Please update the highlighted mandatory field(s).’ Also, highlight the missed out field in red	E	Medium	NA	Req _4	
Req – 4.5	Admin Registratio n	Post-successful field level validation, save the information in the database	F	Critical	NA	Req _4	

Req. #	Rationale Categorization	Business Requirement	Req. Type	Priority	Originator	BR Traced to Business Requirement / Use case ID	Impacted Stakeholders
Req _ 4.6	Admin Registration	Upon saving the information in the database, display the message 'Your details are submitted successfully'.	E	Medium	NA	Req _4	
Req _ 5.1	Credential Authentication	A registered user – is able click 'Login' link, after keying in 'Admin ID' & 'Password' field and get his credentials authenticated with the existing database entry.	F	Critical	NA	Req _5	
Req _ 6.1	Claim request	On clicking "Raise claim request", it should redirect to the Claim request Page	U I	Critical	NA	Req _6	
Req _ 6.2	Claim request	Member should be able to update the mandatory fields of the claim	F	Critical	NA	Req _6	Please refer to Table 3.0 under References
Req _ 6.3	Claim request	Clicking 'Submit' should validate the datatype constraints for each field	F	Critical	NA	Req _6	

Req _ 6.4	Claim request	Member failing to provide information on the mandatory fields be provided with an alert message – ‘Please update the highlighted mandatory field(s).’ Also, highlight the missed out field in red	F	Critical	NA	Req _6	
Req _ 6.5	Claim request	Post-successful field level validation, save the information in the database	F	Critical	NA	Req _6	
Req _ 6.5	Claim request	Upon saving the information in the database, display the message ‘Your details are submitted successfully’.	F	Critical	NA	Req _6	
Req _ 7.1	Claim Process	When Admin clicks “Claims to be processed”, it should list all the claims available for Processing	U I	Critical	NA	Req _7	

Req . #	Rationale Categorization	Business Requirement	Req . Type *	Priority **	Originator ***	BR Traced to Business Requirement / Use case ID	Impact ed Stakeholders
Req_7.2	Claim Process	When Admin clicks the Claim ID, the claim details should be displayed.	F	Critical	NA	Req_7	
Req_7.3	Claim Process	Admin should validate the Claim, check member eligibility by checking the Member details and plan	F	Critical	NA	Req_7	
Req_7.4	Claim Process	Upon processing, update the claim status as Accepted / Denied. If accepted, Claim amount should be updated	F	Critical	NA	Req_7	
Req_7.5	Claim Process	Clicking 'Submit' should validate the datatype constraints for each field	F	Critical	NA	Req_7	
Req_7.6	Claim Process	Admin failing to provide information on the mandatory fields be provided with an alert message – 'Please update	F		NA	Req_7	

		he highlighted mandatory field(s).’ Also, highlight the missed out field in red		Critical			
Req_7.7	Claim Process	Post-successful field level validation, save the information in the database	F	Critical	NA	Req_7	
Req_7.8	Claim Process	Upon saving the information in the database, display the message ‘Your details are submitted successfully’.	F	Critical	NA	Req_7	
Req_7.9	Claim Process	When Admin clicks “Processed Claims”, it should list all the Processed Claims	UI	Critical	NA	Req_7	
Req_7.10	Claim Process	On clicking the Claim ID, it should display the details of the claims	F	Critical	NA	Req_7	
Req_7.11	Claim Process	When Admin clicks “Member Details”, it should ask for the Member ID	F	Critical	NA	Req_7	

Req. #	Rationale Categorization	Business Requirement	Req. Type	Priority	Originator	BR Traced to Business Requirement / Use case ID	Impacted Stakeholders
Req_7.12	Claim Process	On entering the Member ID, Admin should be able to view the Member details.	UI	Critical	NA	Req_7	
Req_7.12	Claim Process	Admin on clicking “Plan codes” it should redirect to the page where Admin can add/update plan code details	UI	Critical	NA	Req_7	Please refer to Table 4.0 under References
Req_8.1	Display claim details at member level	When Member clicks on “Claim Requests”, it should display all the claim IDs raised by the member	F	Critical	NA	Req_8	
Req_8.2	Display claim details at member level	When Member clicks on Claim ID, it should Display the claim details with status	F	Critical	NA	Req_8	
Req_9.1	User Log off	Option to log off from the system.	UI	Critical	NA	Req_9	

(Member Table)

Field Name	Field Type	Data Type	Mandatory	Possible Values
Member ID	Text(10)	Alphabetic	Yes	System Generated
First Name	Text(50)	Alphabetic	Yes	
Last Name	Text(50)	Alphabetic	Yes	
Age	Numeric(2)	Numeric	Yes	
Gender	Drop Down	NA		Male, Female
DoB	Text(10)	Alphanumeric	Yes	
Contact Number	Text(10)	Numeric	Yes	
Alt Contact Number	Text(10)	Numeric	No	
Email ID	Text(50)	Alphanumeric	Yes	
Password	Text(15)	Alphanumeric	Yes	
Plan Code	Text(10)	Alphanumeric	Yes	
Coverage Start Date	Text(10)	Alphanumeric	Yes	
Coverage End Date	Text(10)	Alphanumeric	Yes	
Address Line 1	Text(100)	Alphanumeric	Yes	
Address Line 1	Text(100)	Alphabetic	Yes	
City	Text(50)	Alphabetic	Yes	
State	Text(50)	Alphabetic	Yes	
Zip Code	Text(10)	Numeric	Yes	

(Admin Table)

Field Name	Field Type	Data Type	Mandatory	Possible Values
Admin ID	Text(10)	Alphabetic	Yes	System Generated
First Name	Text(50)	Alphabetic	Yes	
Last Name	Text(50)	Alphabetic	Yes	
Age	Numeric(2)	Numeric	Yes	
Gender	Drop Down	NA		Male, Female
DoB	Text(10)	Alphanumeric	Yes	
Contact Number	Text(10)	Numeric	Yes	
Alt Contact Number	Text(10)	Numeric	No	
Email ID	Text(50)	Alphanumeric	Yes	

(Claim Table)

Field Name	Field Type	Data Type	Mandatory	Possible Values
Claim ID	Auto-generated(5)	Numeric	Yes	Non-editable system generated
Member ID	Text(10)	Alphabetic	Yes	System Generated
Claim Service Date	Text(10)	Alphanumeric	Yes	
Claim Submission Date	Text(10)	Alphanumeric	Yes	
Claim Processing Date	Text(10)	Alphanumeric	Yes	
Claim status	Text (10) Drop down	Alphabetic	Yes	Submitted Approved Denied
Claim Amount	Numeric (10)	Numeric	Yes	Default 0
Approved Amount	Numeric (10)	Numeric	Yes	Default 0

(Plan code Table)

Field Name	Field Type	Data Type	Mandatory	Possible Values
Plan Code	Text(10)	Alphanumeric	Yes	
Plan Description	Text(50)	Alphabetic	Yes	
Coverage1	Text(50)	Alphabetic	Yes	
Coverage2	Text(50)	Alphabetic	Yes	
Coverage3	Text(50)	Alphabetic	Yes	
Coverage4	Text(50)	Alphabetic	Yes	
Coverage5	Text(50)	Alphabetic	Yes	

3.4 Business Case

3.4.1 Technologies Recommended

Front End	Java (HTML5, CSS3, JavaScript, Angular)
Middleware	Java (Spring, Spring MVC, Hibernate MVC, WEB API2)
Backend	Oracle/SQL Server

3.4.2 Hardware and Software Requirements

Technology	Hardware	Software
Java	Desktop PC with 8GB RAM	<ol style="list-style-type: none">1. Node.js 10.15.12. Angular 5.03. Visual Studio Code 1.304. Eclipse IDE for Java EE Developers (Oxygen)5. Maven 3.6.06. Tomcat 97. MySQLCommunity Server 8.08. MySQL Workbench 8.0.149. Putty10. WinSCP 5.9.411. Oracle 11g express version

Chapter 4

Implementation

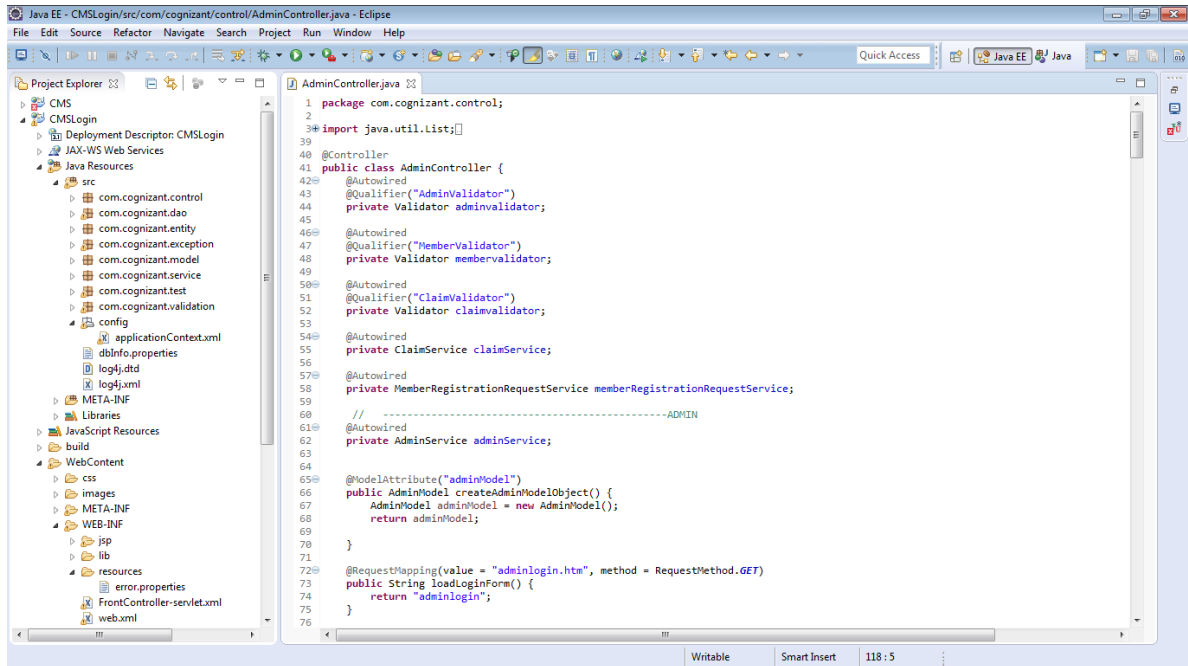


Fig: 4.1 – Project Hierarchy

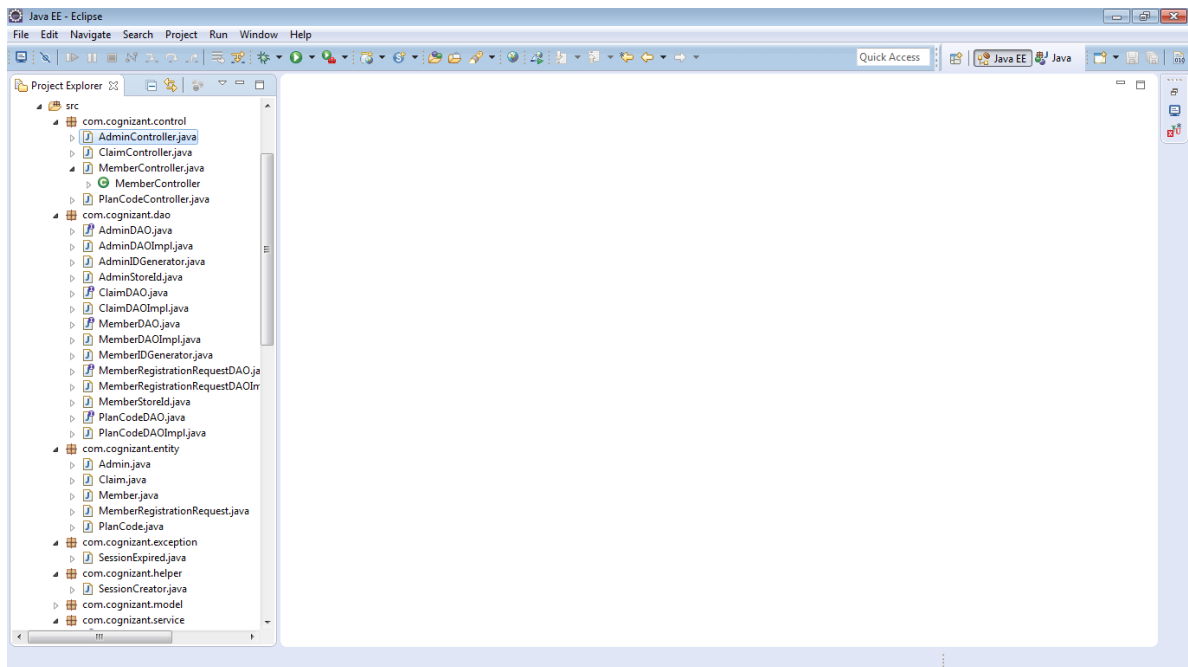


Fig: 4.2 – Classes in packages

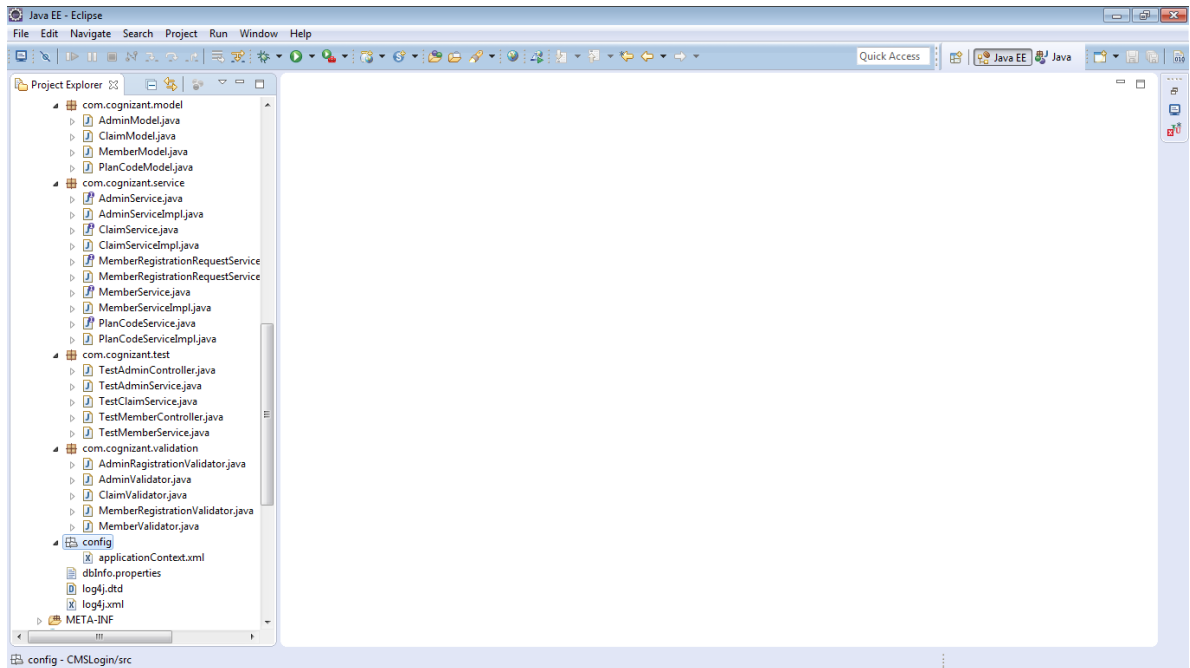


Fig. 4.3 – Classes in packages

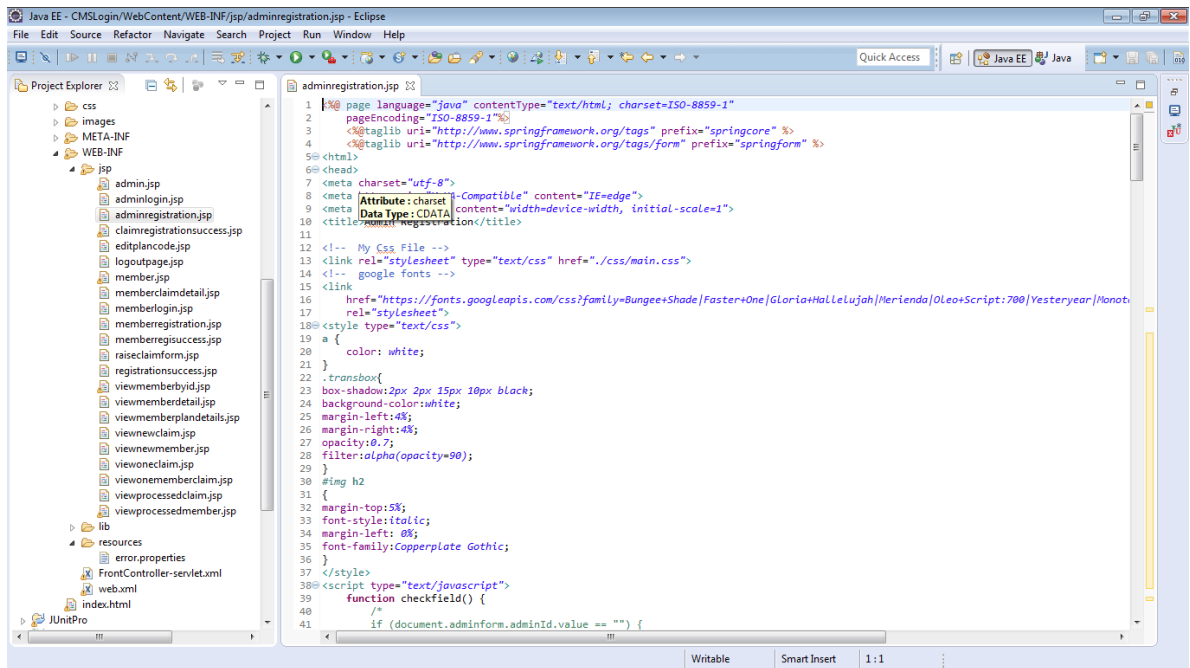


Fig. 4.4 – JSP Pages

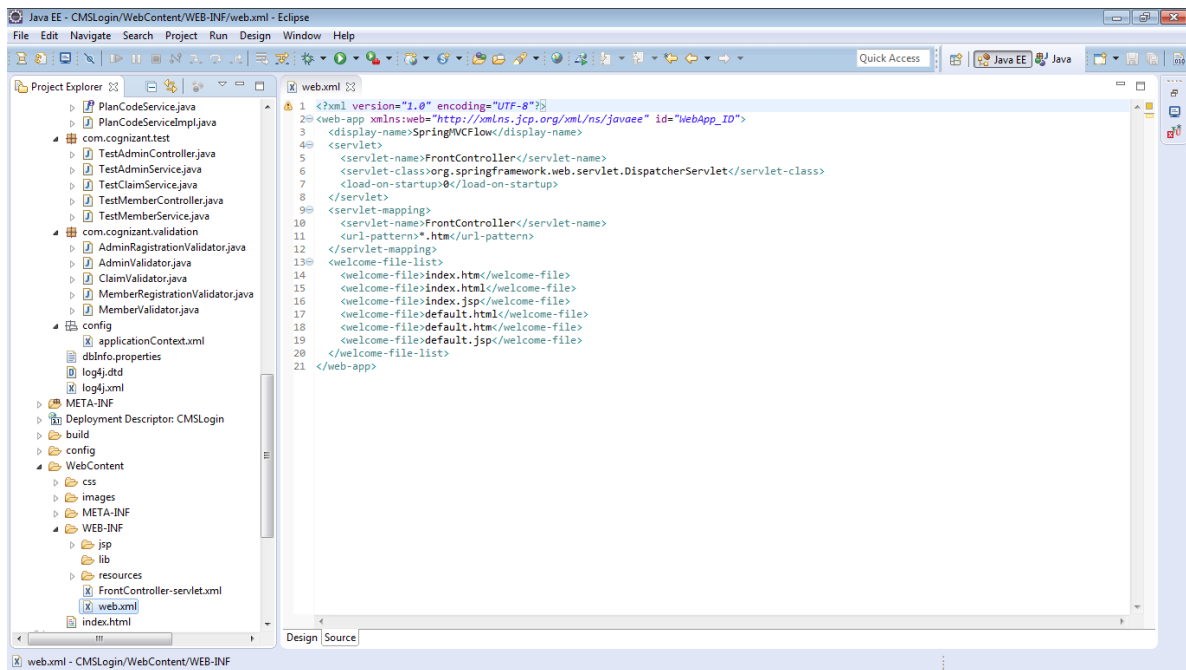


Fig: 4.5 – web.xml

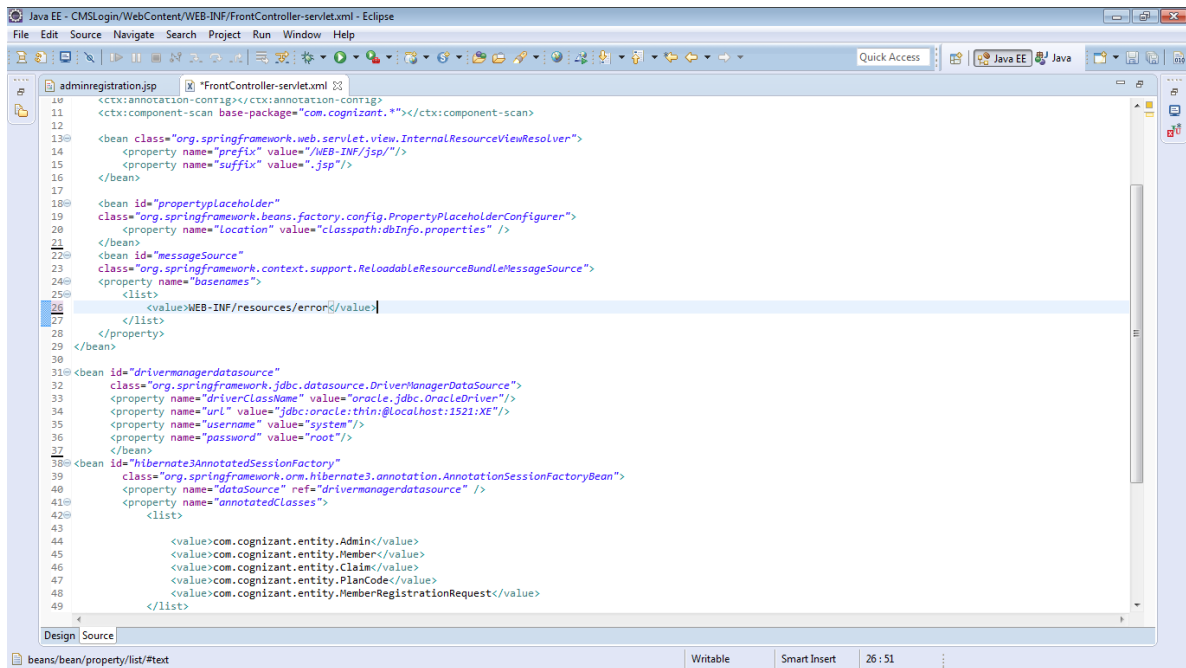


Fig: 4.6 – Front Controller-servlet.xml

Chapter 5

Results and Discussions

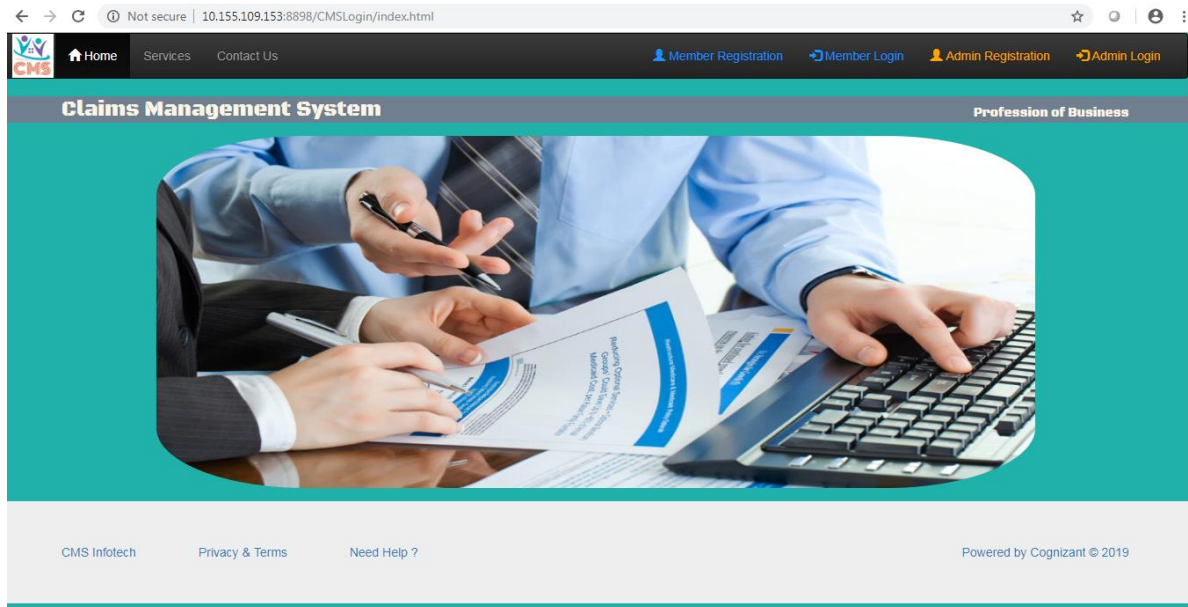


Fig: 5.1 – Homepage

The screenshot displays the 'ADMIN REGISTRATION' form. The browser address bar shows '10.155.109.153:8898/CMSLogin/adminregistration.htm'. The page has a dark blue header with the CMS logo and navigation links (Home, About Us, Services, Contact Us). The form is centered on a teal background and includes the following fields: First Name, Last Name, Age (with a value of 0), Gender (a dropdown menu showing 'Select'), DoB, ContactNo (with a value of 0), AltContactNo (with a value of 0), Email ID, and Password. A green 'Register' button is located at the bottom of the form.

Fig: 5.2 – Admin Registration



Fig: 5.3 – Admin Login

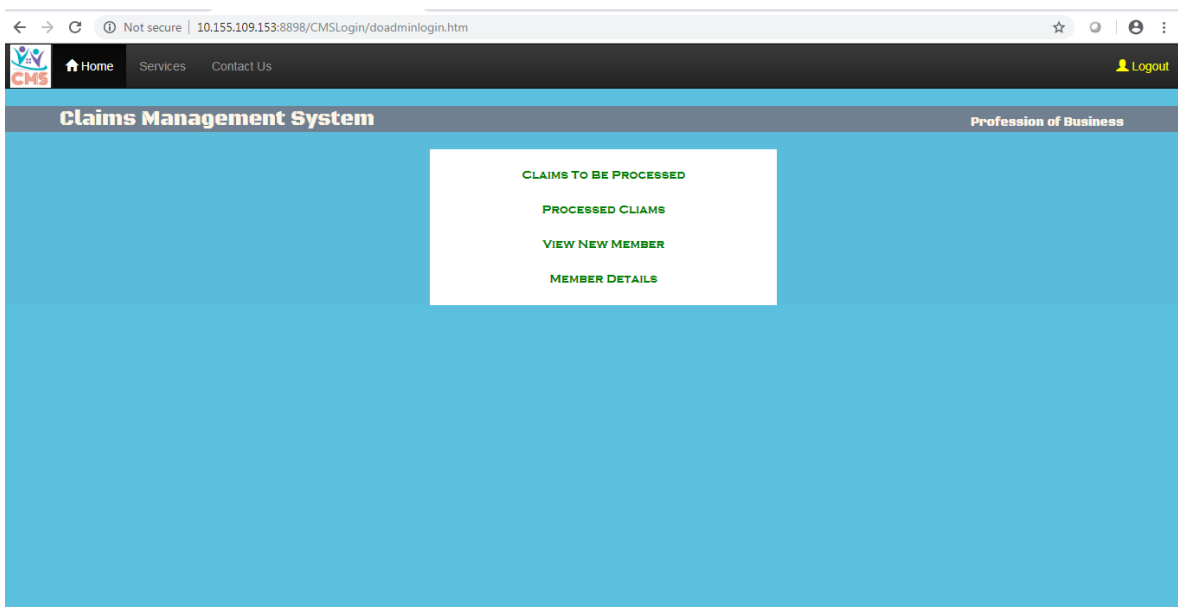



Fig: 5.4 – Admin Dashboard

← → ↻ ⓘ Not secure | 10.155.109.153:8898/CMSLogin/memberregistration.htm ☆ ○ ⌵


[Home](#) [About Us](#) [Services](#) [Contact Us](#)

MEMBER REGISTRATION

First Name :	<input type="text"/>
Last Name :	<input type="text"/>
Age :	<input type="text" value="0"/>
Gender :	<input type="text" value="Select"/>
DoB :	<input type="text"/>
ContactNo :	<input type="text" value="0"/>
AltContactNo :	<input type="text" value="0"/>
Email ID :	<input type="text"/>
Password :	<input type="text"/>
PlanCode :	<input type="text"/>
Coverage StartDate :	<input type="text"/>
Coverage EndDate :	<input type="text"/>
AddressLine1 :	<input type="text"/>
AddressLine2 :	<input type="text"/>
City :	<input type="text"/>
State :	<input type="text"/>
Zip Code :	<input type="text" value="0"/>

Fig: 5.5 – Member Registration


← → ↻ ⓘ Not secure | 10.155.109.153:8898/CMSLogin/domemberlogin.htm ☆ ○ ⌵

[Home](#) [Services](#) [Contact Us](#) [Logout](#)

Claims Management System

[Raise Claim](#) [View All Claims Id](#) [Profession of Business](#)


Fig: 5.6 – Member Dashboard


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[Logout](#)

Claims Management System
Profession of Business

MemberID	MEMBEREC
FirstName	Rahul
LastName	Kumar
Age	21
Gender	male
DOB	19/12/1996
ContactNo	1010101100
AltContactNo	1847634733
EmailID	ragah@hi.com
Password	Rahu@234
PlanCode	p2
CoverageStartDate	12/09/2016
CoverageEndDate	31/09/2016
AddressLine1	pune
AddressLine2	hardwar
City	chennai
ZipCode	34
	Accept
	Reject

Fig: 5.7 – Member Request Approval


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[Contact Us](#)
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CLAIM REGISTRATION

Claim Service Date :

Claim Submission Date :

Claim Processing Date :

Claim Amount :

Approved Amount :

Fig: 5.8– Claim Registration

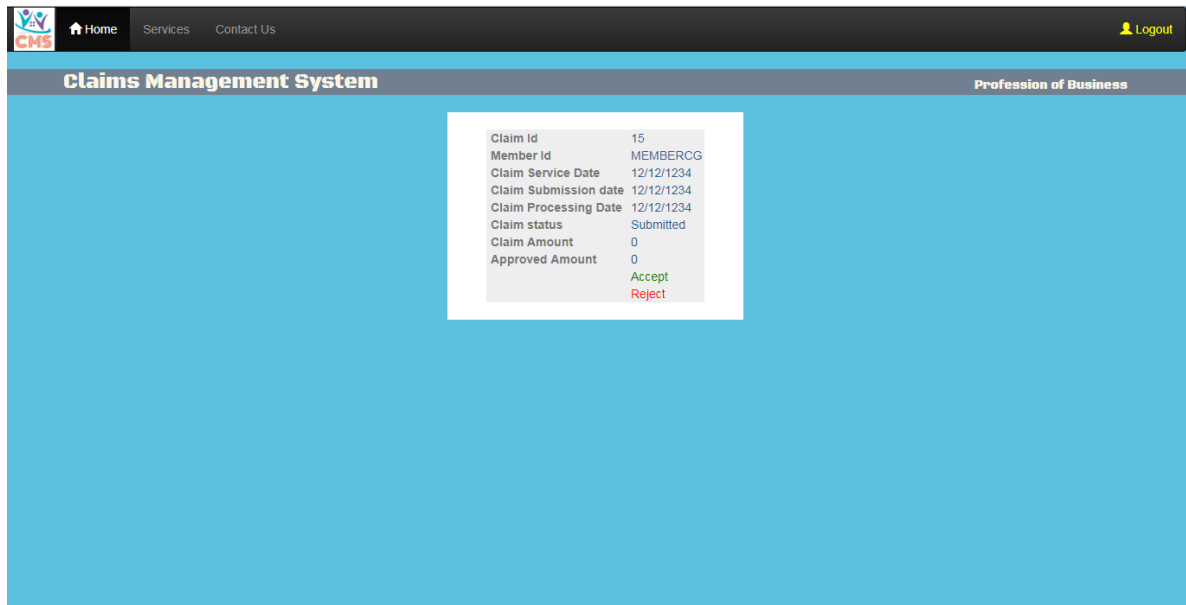




Fig: 5.9– Claim Approval

The screenshot shows the 'Claims Management System' interface with a table of claim details. The table has the following columns: CLAIM ID, MEMBER ID, CLAIM SERVICE DATE, CLAIM SUBMISSION DATE, CLAIM PROCESSING DATE, CLAIM STATUS, CLAIM AMOUNT, and APPROVED AMOUNT. The table contains 12 rows of data.

CLAIM ID	MEMBER ID	CLAIM SERVICE DATE	CLAIM SUBMISSION DATE	CLAIM PROCESSING DATE	CLAIM STATUS	CLAIM AMOUNT	APPROVED AMOUNT
4	MEMBERCG	12/12/1345	12/12/1345	12/12/1345	APPROVED	0	0
5	MEMBERCG	12/12/1987	12/12/1987	12/12/1987	APPROVED	666	565
6	MEMBERCG	12/12/1986	12/12/1988	12/12/1983	DENIED	123	87
7	MEMBERCG	12/12/1234	12/12/1234	12/12/1234	APPROVED	0	0
11	MEMBERCG	12/15/2019	12/15/2019	12/15/2019	APPROVED	12	10
12	MEMBERDF	12/15/2019	12/15/2019	12/15/2019	APPROVED	12	10
17	MEMBERCG	12/13/1234	12/2/1234	12/12/1234	DENIED	0	0
20	MEMBERCG	13/13/1234	12/2/1234	12/12/1234	DENIED	0	0
21	MEMBERCG	12/12/1234	12/2/1234	12/12/1234	APPROVED	0	0
24	MEMBERCG	12/12/1234	12/12/1234	12/12/1234	APPROVED	0	0

Fig: 5.10– Claim Details

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 [Logout](#)

Claims Management System**Profession of Business**

UPDATE PLAN

Plan Code

p1

Plan Description

Coverage 1

Coverage 2

Coverage 3

Coverage 4

Coverage 5

Fig: 5.11– Plan Code Update

Chapter 6

Conclusions and Future Works

6.1 Conclusions

This project of Managing Claims is successful in determining between pseudo and legal claims and hence is successful in implementing what was asked in the requirement specification. Claims submitted by the member are approved by the admin who is solely responsible for processing of claims as he only decides which claim request is pseudo/legal. Further member is notified if the claim is approved and the claim amount is credited into his account. Thus in this manner asked requirements are successfully implemented.

6.2 Future Works

- ▶ Development of mobile application for managing claims.
- ▶ Focussing more on ways of efficient processing of claims.
- ▶ Adding more security features.
- ▶ Making it more user friendly.

Chapter 7

References

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