PES UNIVERSITY, BANGALORE

Department of Computer Science and Engineering

SOFTWARE ENGINEERING PROJECT GUIDELINES

Subject Code: UE 20CS303

Software Requirements Specification

for

Customer Relationship Management

Version 1.0 approval pending

Prepared by Team Don't Leave

PES University

11.09.2022

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Revision History

Name	Date	Reason For Changes	Version

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Introduction

Purpose

This is a web-based CRM application with an admin panel that is meant to facilitate any business sector in Bengaluru to build and strengthen its customer relationships by continuously keeping in touch with the customers and attending to their constantly evolving requirements/expectations.

Our purpose is to fulfill the following activities:

1. Customer Order

2. View Product

3. Suggestion

4. Feedback

5. Query Solve

6. Interact with company's employees

7. Inventory information (according to the type of company we provide service to.)

8. Customer pattern and churn analysis

Intended Audience

The document is intended for the professor, developers, testers and documentation writers. The SRS document contains overall descriptions, specific requirements, and other non-functional requirements of the project.

Product Scope

Our project is made in PHP, HTML, CSS, SQL, Javascript as it is made at

administrator level. Our objective is to maintain relationship with the customers where we aim to solve the queries of the client such as providing customers, information about the new products or developments , solve various queries, take suggestions and feedback from customers.

References

How to write software requirements specification at

http://www.microtoolsinc.com/Howsrs.php

SRS Template at

http://www.processimpact.com/process_assets/srs_template.doc

Overall Description

Product Perspective

Our CRM application is a client-server application, acting as a replacement for existing customer management services.

The server will be managed by the acting admin of the company and the client side caters to the needs of customers, where they can key in their feedback and provide suggestions to the company's services.

The codebase will be written with PHP. It is a diverse application that is compatible with any browser , for instance, Mozilla, Brave, Microsoft Edge, Google Chrome etc.

Requirements are that JavaScript must be enabled on the systems. The application is password protected and is therefore, a completely secure application.

Product Functions

The CRM application is designed for the business sector allowing companies to manage and analyze customer interactions and data throughout the customer lifecycle. The goal is to improve customer service relationships and assist in customer retention and drive sales growth. Customers can use the query system to solve their issues. It is a customizable CRM, i.e, The admin can restrict the user by accessing any forms, thus exercising data abstraction. Different users can access different forms as per user permissions, which is decided by the admin. The admin can monitor the inventory (products database), view customer order history etc. The application also evaluates customer experience through a feedback system and develops a revised sales plan in order to retain and grow their customer base.

User Classes and Characteristics

Operating Environment

dontleave.com is a sophisticated and effective web site to deal with all the major aspects related to customer's relationships with the company that can help the company's user base obtain all the information regarding new products and several other options that can be used to solve their queries online.

1.1. Software

The software requirements for the project are listed below :

Figma

My SQL

Operating system: Windows 10, MacOS, Linux etc.

Application tools: Microsoft Edge, Google chrome, Brave, Firefox, etc.

Languages:

PHP

HTML

CSS

Javascript

1.2. Hardware

The hardware requirements for the project are listed below :

PC with 800 mhz or above processor and 1 GB RAM.

Storage media: none (database is hosted on the company's servers).

Any OS with internet connectivity.

Design and Implementation Constraints

CRM requires a web server connected to the internet; a programming language for describing the system's logic; a server engine for generating the dynamic HTML content; and a database to provide a way of storing and retrieving large amounts of data. Only system administer has the right to change system parameters.The system should be secure and must use encryption to protect the databases.

- *As the customer and product database is hosted on the company's (our clients) servers, the available space acts as a constraint to an ever-expanding database.*

- *Another system constraint is that Javascript must be enabled for the smooth-running of the application.*

2.6 Assumptions and Dependencies

- *Systems are enabled with JS, and the companies possess adequate server space for hosting of required databases.*
- *The UI created is user-friendly.*
- *The hardware functions smoothly without any perturbations as long as the website is up and running and all the information provided by the user is correct and devoid of any discrepancies.*
- *The administrator is chosen by the company.*
- *User accessibility is decided by the admin.*
- *The user is authorized and provided with login credentials by the admin.*

External Interface Requirements

User Interfaces

This project is made to be used by any company from the B2C business sector. It caters to both customers and the company itself.

Earlier evaluation of customer satisfaction was done manually by company administrators, costing them a tremendous amount of time and manpower which could be put to use in other critical requirements. Login credentials are thoroughly checked and access is provided accordingly. The encryption of the database is also foolproof and protected from any expected attacks.

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Software Interfaces

- *Figma*
- *My SQL*
- *Operating system: Windows 10, MacOS, Linux etc.*
- *Application tools: Microsoft Edge, Google chrome, Brave, Firefox, etc.*

- *Languages:*
- *PHP*
- *HTML*
- *CSS*
- *Javascript*

Communications Interfaces

The Communication Between the client and the administrator takes place through Email and/or feedback forms hosted on the website.

This requires a web browser at the client side and a web server at the Server Side. The communication standards that will be used are FTP or HTTP. The system administrator alone, has the right to change pricing policy, reply to customer queries, assign the work to the employees according to their specialization and answer to the frequently asked questions etc. The system should be secure and must use encryption to protect the databases. Users need to be authenticated before having access to any personal data (usually handled by the admin.)

Analysis Models

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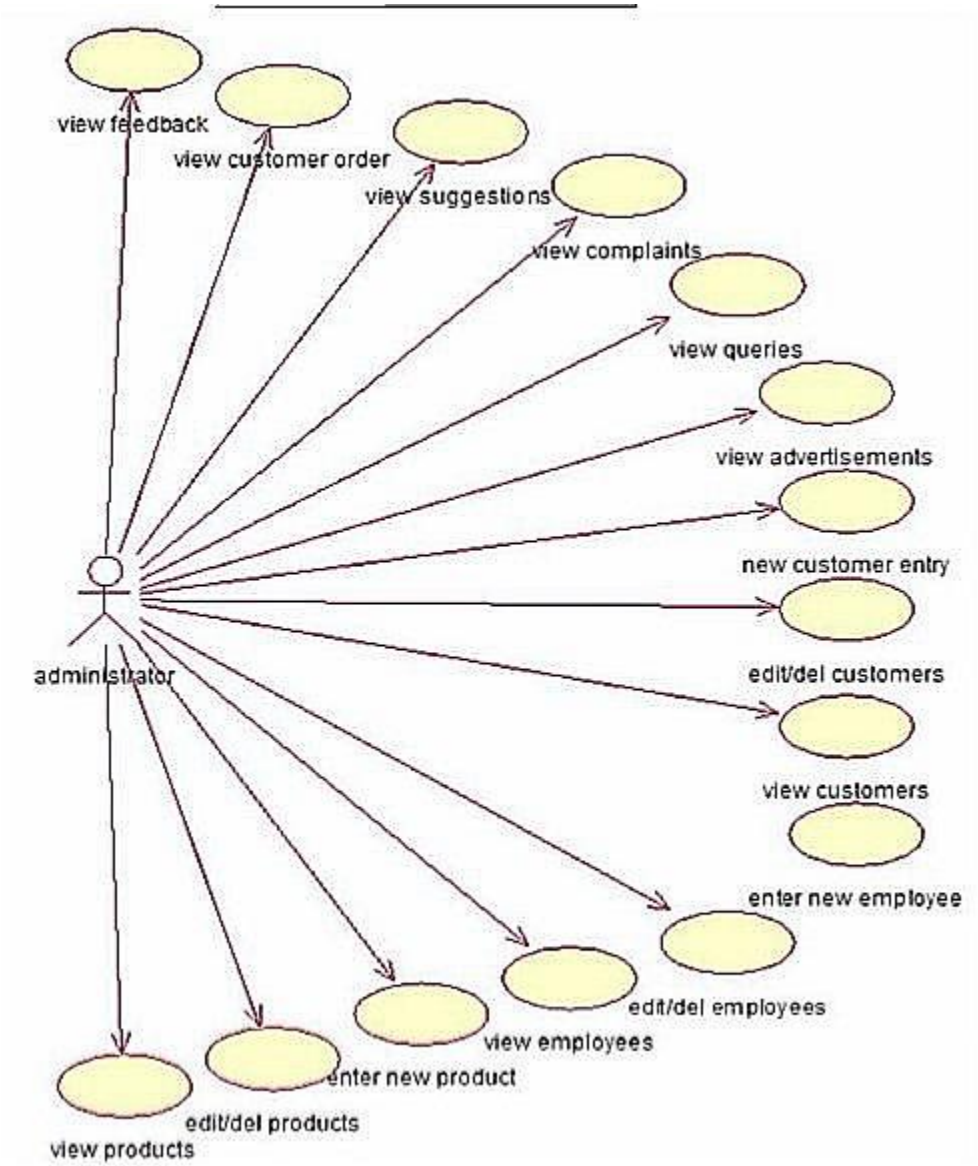

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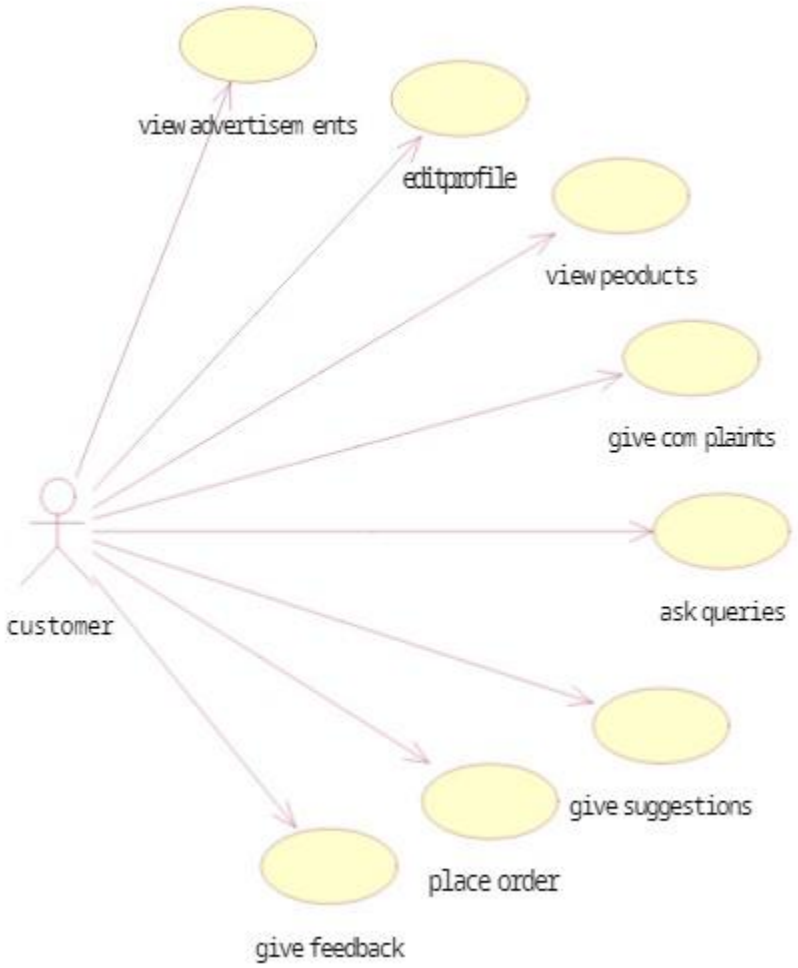

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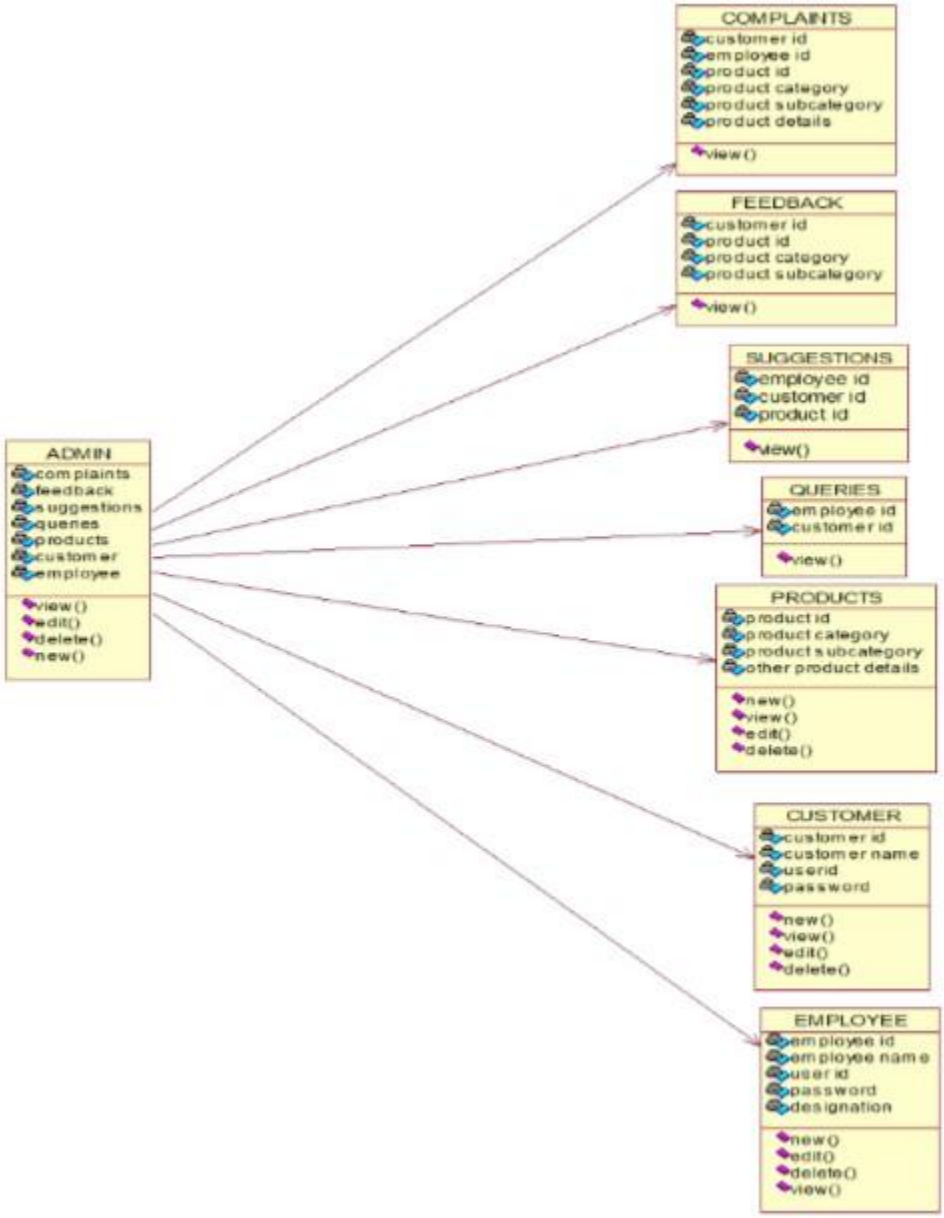

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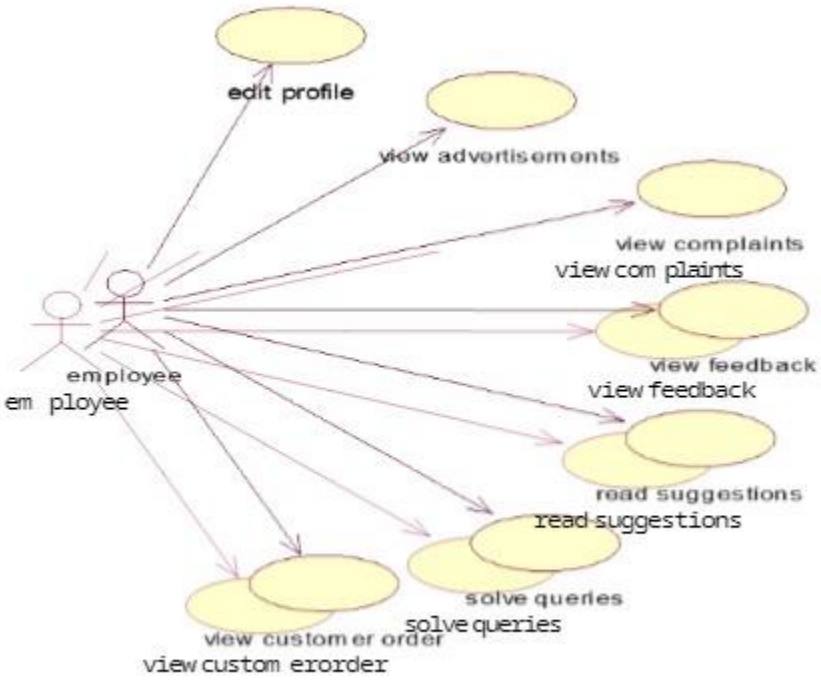

System Features

Customer order history and Inventory management

5.1.1 Description and Priority

Every interaction(purchase/return) by customer is mapped to the customer onto the customer database, along with other attributes, such as frequency of visits, recurring product purchase etc. New customers are added to the database by the admin. The inventory on the product database is updated accordingly.

Both customer and product databases are handled by the admin alone.

Queries can be given to both databases by customers based on their accessibility level, which is further decided by the admin.

5.1.2 Stimulus/Response Sequences

The database is accessible to admin alone, after user authentication through username and password. The customers can only send queries to the database and receive responses after customer authentication through login credentials.

5.1.3 Functional Requirements

PC with 800 mhz or above processor and GB RAM

Storage media: company's servers (distributed or stand-alone)

Operating system: Windows 7,8, 9, 10, 11, MacOSX, Linux etc.

Customer feedback and evaluation along with improvement plans

5.1.1 Description and Priority

Customer evaluation is done by the application based on their reviews and feedback, collected by forms on the website or email and a subsequent revised sales plan is provided to the admin.

Customers of any level, have access to the forms after login verification. Revised plans are available to the admin after user authentication.

5.1.2 Stimulus/Response Sequences

A button functionality is available to obtain revised policy. A click will trigger the customer evaluation and output a report with an extensive sales plan to retain and grow the customer base.

The customers can send mails to the feedback mail provided on the website, or fill out forms in the feedback section of the website. The forms will be transferred to the admin's page under the customer's feedback tab which will also reflect on the profiles of employees responsible for attending to the customer's complaints.

5.1.3 Functional Requirements

PC with 800 mhz or above processor and 1 GB RAM

Storage media: not necessary

Operating system: Windows 10, MacOS, Linux etc.

Other Nonfunctional Requirements

Performance Requirements

Response time of CRM for dontleave.com will depend on the query made by the user to the employee. When the user complains about his/her problem by email or form, the problems will be transferred to the employee and a response will be outputted when the problem is addressed and resolved. It may take hours or days depending on the complexity of the problem at hand. Response time refers to the waiting time while the system accesses, queries and retrieves the information from the databases.(DB-user, DB-schedule etc) (A local copy of property database is maintained as DB-schedule to reduce this access time). It also depends on the strength of internet connectivity on both server (website) and client (web browser) ends.

Safety Requirements

- *CRM shall be available 24 hours a day, 7 days a week.*
- *CRM shall always provide real time information about available product information.*

- *CRM shall be able to recover from hardware failures, power failures and other natural catastrophes and rollback the databases to their most recent valid state.*

Security Requirements

- *System admin is chosen and thus authorized by the company.*
- *Only system administrator has the right to change system parameters, such as pricing policy etc.*
- *The system should be secure and must use encryption to protect the databases.*
- *Users need to be authenticated before having access to any personal data.*

Software Quality Attributes

- *Software quality attributes that need to be addressed are:*
- *Availability of server space to store databases.*
- *The website is up and running 24x7 despite possible hardware/software disruptions.*
- *Correctness of the customer information, inventory data, pricing policy etc.*
- *The application is diverse and is compatible with any OS configuration.*
- *Interoperability that is introduced as the project is made using .net.*
- *Maintainability of the project.*
- *Reliability of the information and the software.*

- *Robustness of the software.*
- *Testability and usability of the software.*

Business Rules

- Customer and product databases can be updated by authorized admin and employees alone.
- Databases can be queried to by authentic customers.
- Customer evaluation is performed by the server implicitly. Admins and employees have access to the revised business plan.
- Customers can give feedback via forms or mail. These are received by the employees and admin.

Other Requirements

- *A database of a fixed large memory size would be required.*
- *All the legal formalities regarding the usage of internet space need to be addressed.*
- *All commercial and privacy policies need to be kept in mind during the development and implementation of the project.*

Appendix A: Glossary

1	*Admin*	*Company appointed admin who handles all server side functionalities and maintains databases.*
2	*Employee*	*Company authorized person who receives and replies to customers' feedback and complaints.*
4	*HTTP*	*Application layer protocol in the Internet protocol suite model for distributed, collaborative, hypermedia information systems.*

5	*FTP*	*A standard communication protocol used for the transfer of computer files from a server to a client on a computer network. FTP is built on a client–server model architecture using separate control and data connections between the client and the server.*
6	*UI*	*UI stands for User Interface. It is defined as the space where interaction between humans and machines occurs.*
7	*SRS*	*A document that describes what the software will do and how it will be expected to perform. It also describes the functionality the product needs to fulfill all stakeholders (business, users) needs.*
8	*CRM*	*Customer Relationship Management System is the combination of practices, strategies and technologies that companies use to manage and analyze customer interactions and data throughout the customer lifecycle. The goal is to improve customer service relationships and assist in customer retention and drive sales growth.*

9	*PHP*	*A general-purpose scripting language geared toward web development.*

Appendix B: Field Layouts

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Appendix C: Requirement Traceability Matrix

Sl. No	Requirement ID	Brief Description of Requirement	Architecture Reference	Design Reference	Code File Reference	Test Case ID	System Test Case ID

Created by-

Team Members	SRN
Nitish Rathore	PES1UG20CS270
Niveditha Kundapuram	PES1UG20CS271
Prarthana Prasanna Rajapurohit	PES1UG20CS299
Prateek Pangal Rao	PES1UG20CS303

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Format 3

Project Plan Document

Instructions:

1: Prepare a detailed plan for your project which comprises of the below mentioned details.

2: Upload pdf document through the given link.

3: The name of the document should be your Project ID.

Things to be included as part of the project plan.

1: Identify the lifecycle to be followed for the execution of your project and justify why you have chosen the model. Prototype

2: Identify the tools which u want to use throughout the lifecycle like planning tool, design tool, version control, development tool, bug tracking, testing tool.

3: Determine all the deliverables and categorize them as reuse/build components and justify the same.

4: Create a WBS for the entire functionalities in detail.

5: Do a rough estimate of effort required to accomplish each task in terms of months.

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6: Create the Gantt Chart for scheduling using any tool.

Format 4

Test Plan Document

Instructions:

1: Prepare at least 8-10 test cases for each **implemented use case** (functional requirements) as per the below given template which should include Unit, Integration and System Test cases.

2: Carry out manual testing for all the test cases and populate the columns Actual Result and Test Result.

Template of a Test case:

Test Case ID	Name of Module	Test case description	Pre-conditions	Test Steps	Test data	Expected Results	Actual Result	Test Result

- **Test Case ID :** Each test case should be represented by a unique ID. To indicate test types, follow some convention like "UT_01" indicating "Unit Testing - Test Case#1."
- **Name of the module :** Specify the name of the **main module or sub module** being tested
- **Test Case Description :** Specify the summary or test purpose in brief
- **Pre- Conditions :** Any requirement that needs to be done before execution of this test case.

- **Test Steps** : Mention all the steps in detail and specify the order in which it is to be executed.
- **Test Data :** Input for the test case to be executed. Specify different data sets with precise values to be used as input. (create test case for both valid and invalid inputs)
- **Expected Results :** Mention the expected results including error or precise messages that should be displayed on screen
- **Actual Results :** After execution of test case fill this column with the result obtained
- **Test Result (Pass/Fail) :** Mark this field as "fail" if the actual result is not same as expected result else mark as "pass".

Sample Test Case:

Test Case ID	Name of Module	Test case description	Pre-conditions	Test Steps	Test data	Expected Results	Actual Result	Test Result

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UT-01	User registration module	To test the login functionality	Access to Chrome Browser	1: Navigate to http://www.demo.com 2: Enter Username and Password 3: Click Submit	User name: PESU Student. Password : pes123	Login should be successful with "welcome message"	Login successful with "welcome message" displayed	Pass

Format 5-Final Report

B.TECH. (CSE)

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V SEMESTER

UE20303 –SOFTWARE ENGINEERING

PROJECT REPORT

ON

PROJECT TITLE HERE

SUBMITTED BY

NAME	SRN
1) Student Name	
2) Student Name	
3) Student Name	

August – Nov 2022

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

BENGALURU – 560100, KARNATAKA, INDIA

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