Software Requirements Specification

for

Skilled Labour Support

Version <1.0>

Prepared by

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
1.0	Singam Sai Bala Subrahmanyam Goutham P Yacha Venkata Rakesh Rahul Kumawat Puchakayala Dheeraj Reddy	Draft version	23/02/21

1 Introduction

The skilled labour support website is focused to bridge the gap between skilled labourers, contractors and the people who want to hire these labourers. This section explains about this Document's Purpose , the intended audience of this document and how each type of audience can use this document, the abbreviations and conventions followed in this document, and also the scope of our final website.

1.1 Document Purpose

The primary objective of this document is to describe the specifications, requirements and functionalities of Skilled labour Support website. This document will also explain the constraints and interfaces of Skilled labour Support website at a functional level. It also includes other factors and parameters which are essential to completely comprehend the intricacies, requirements and attributes of the Skilled labour Support website

A clear understanding of the system and its functions will allow the right software to be developed for the end-user and used in future phases of the project. This SRS will provide the basis for the project. Through this SRS, the Skilled labour Support website can be designed, constructed, and finally tested. This document is SRS version 1.0 .
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1.2 Product Scope

The website is aimed to facilitate easy and effective communication between skilled labourers, contractors and people who want to hire them. It will enable the user to find skilled labourers based on their technical requirements, proximity, their previous work ratings etc. The skilled labourers can also display and update their profile, their cost/per hour, pictures of previous work, their availability etc. The site admin takes care of the customer care, and he/she can also give site assurity badges to good labourers.

1.3 Intended Audience and Document Overview

This SRS is intended for several audiences, including the client, designer as well as the developer.

● The client can use the SRS to verify if the product is acceptable to his/her specifications.
● The designers can use the SRS to design the system in such a way that it meets the requirements of the client.
● The developer can use the SRS to develop the system functionality as per the clients requirements.

The remainder of this document contains four chapters. The first one provides a detailed description of the project and also the functions performed by the system. The second chapter provides full details of each of the functions, interfaces. Different specification techniques are used to specify the requirements more precisely. The third chapter lists the non functional requirements of the system.The final chapter lists requirements like the Business rules, the legal requirements etc.

1.4 Definitions, Acronyms and Abbreviations

 # To be filled as and when acronyms are used in alphabetical order

Acronym	**Full Form**
DDoS	Distributed Denial of service
HTTP	HyperText Transfer Protocol
SRS	Software Requirements Specification

1.5 Document Conventions

In general this document follows the IEEE formatting requirements. The exact conventions followed are listed in tabular format below.

Italics	Diagram Titles
Bolds	Headings and Subheadings
Line spacing	1.5
Font type and size	Arial 11
Font Color	Black
Header and Footer	Page Numbers
Headings and Subheadings	Bold Arial 13

1.6 References and Acknowledgments

[1] IEEE Software Engineering Standards Committee, "IEEE Std 830-1998, IEEE Recommended practice for Software Requirements Specifications", October 20,1998.

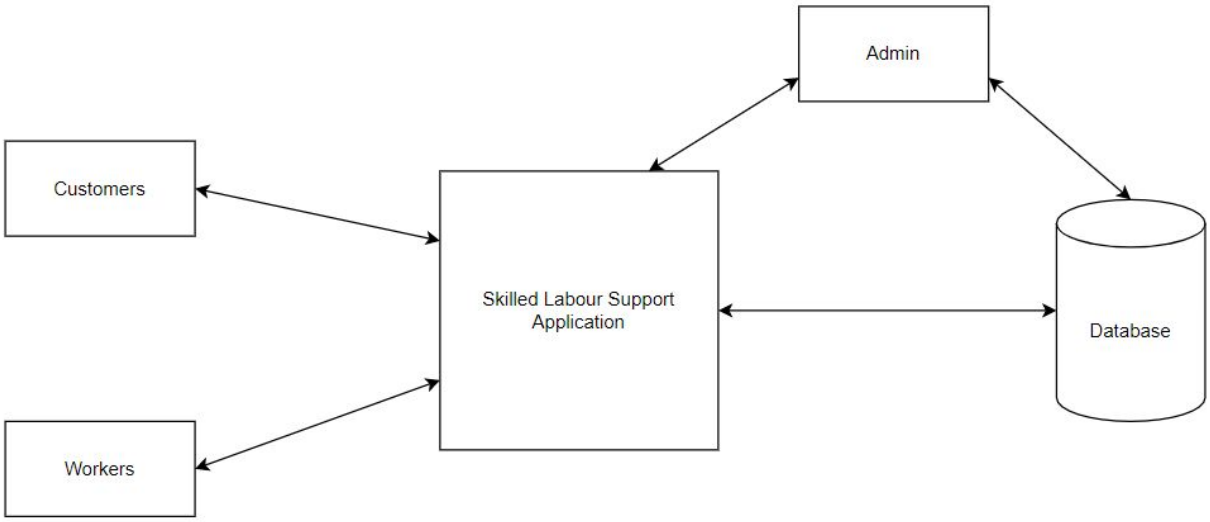
[2] Fundamentals Of Database Systems, 6th EDITION by Ramez Elmasri and Shamkant B. Navathe

[3] R. S. Pressman, Software Engineering: A Practitioner's Approach, 6/e, McGraw Hill, 2008.

2 Overall Description

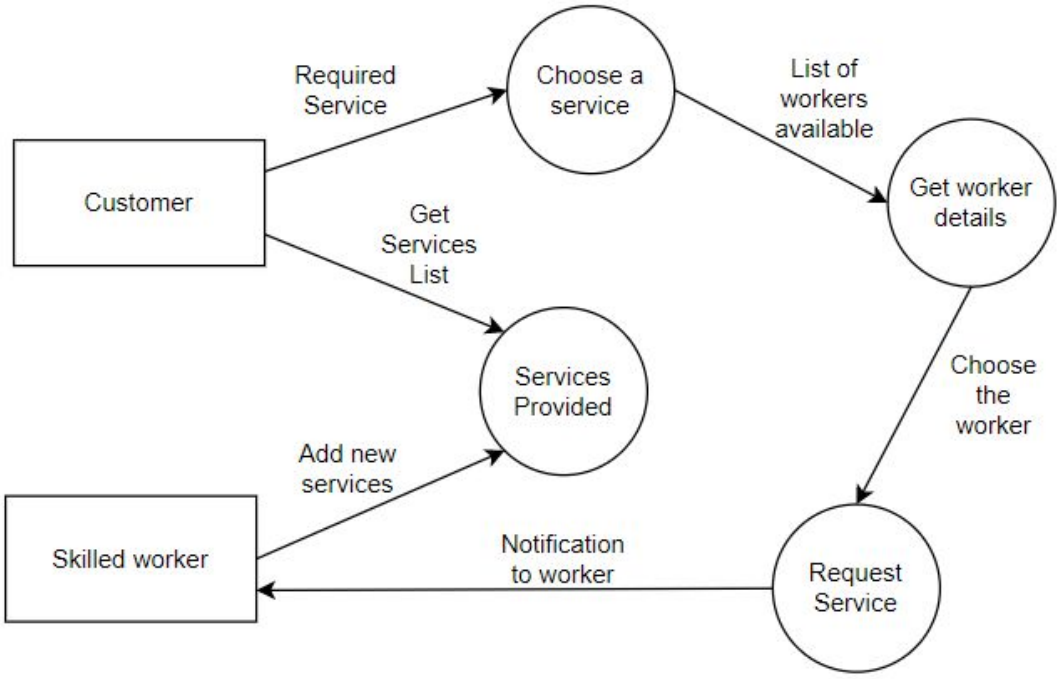
2.1 Product Overview

The Skilled Labour Support is an application developed to provide the services of any kind of skilled labour like plumbers, electricians, etc.., to the people in their nearby locality. It is a common platform where the skilled workers can advertise about their services and the people in their locality can make use of these advertisements to fulfil their needs. The users can also send their queries to the skillers workers to get the required solutions for their problems. It is self-contained and not a part of any other product. The goal is to develop a platform that can serve a vast segment of people in getting their needs fulfilled.



2.2 Product Functionality

- The Skilled workers can host their services in the application.
- The Skilled Workers can provide the customers with all the cost of their works and their contact.
- The customers can have their own account and check out the required services.
- The customers can contact the skilled workers to get their services.
- They can rate the services provided by workers to help others choose the services.
- The admin of the system provides the skilled workers with assurance badges which help the customers in choosing trusted workers in the list.



2.3 Design and Implementation Constraints

- The application is simple, interactive and easy to handle. The user of the application should have a basic knowledge about brower in the desktop or laptop, and basic intuition about form based websites.
- One of the challenges for the application would be to develop it for both Windows and Mac OS operating systems and to run on any web browser.
- The web application is intended to run on Mozilla Firefox version 4.0 and above, Google Chrome 10.2 and above, Microsoft Edge and Safari browser 12.0 and above.
- The user's device has to provide network connectivity in order for the application to work as intended.
- The database must be designed in such a way that it can handle parallel transactions seamlessly in order to provide the users with a better experience.
- The application has to use either email id or phone number as a user id. It should also facilitate the user to use both the phone number and email id interchangeably for the login purpose.

- The worker cannot be active in more than one location or provide more than one service. But the worker can change the service provided and the location he is operating in at any point of time.

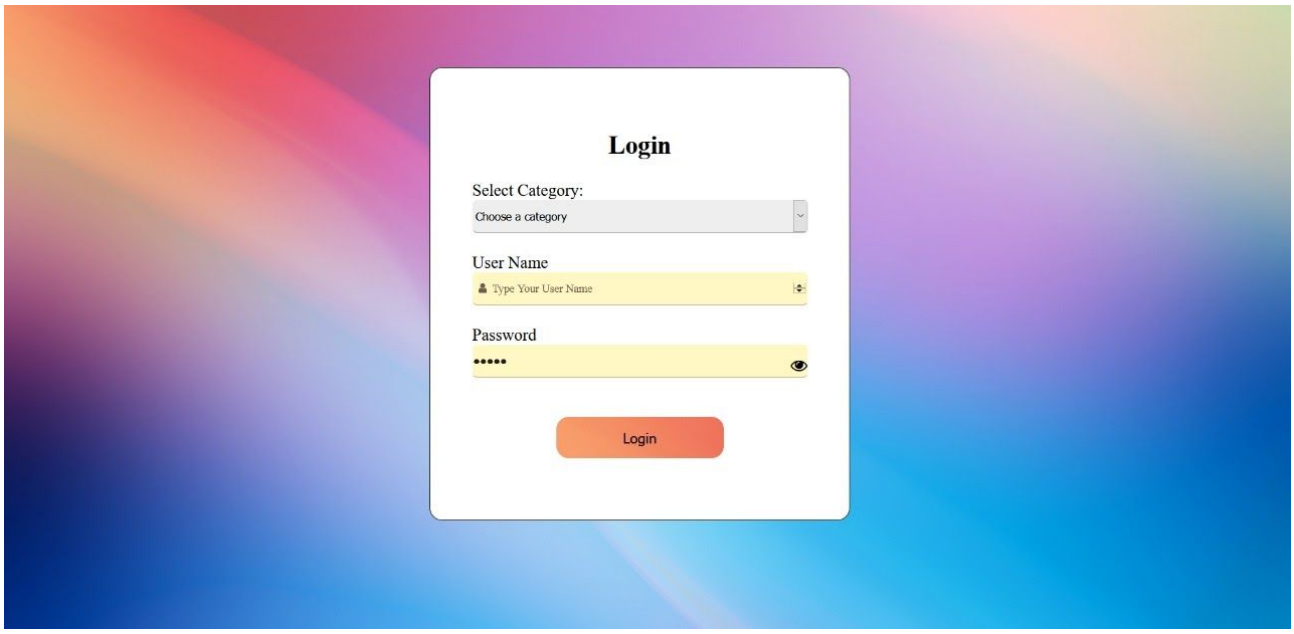
2.4 Assumptions and Dependencies

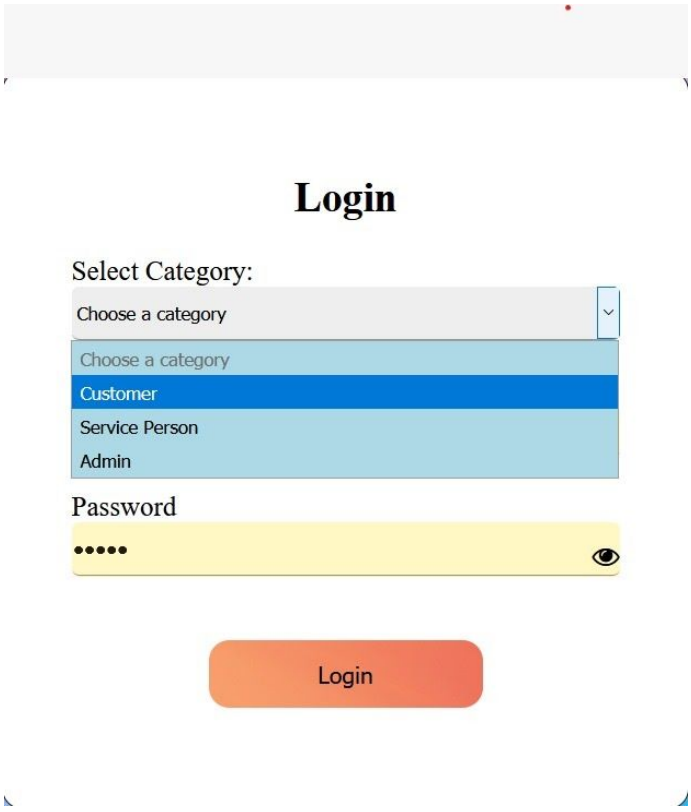
The user login and signup processes will also include authentication using google services. The google authentication service is to be used. The user provides access to the application to connect to the internet. The application should also be provided with the access to the location in order to search for the services in a particular region. The application also uses google map services to obtain the location of the user in order to provide the user with the skilled workers in that region.

3 Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces



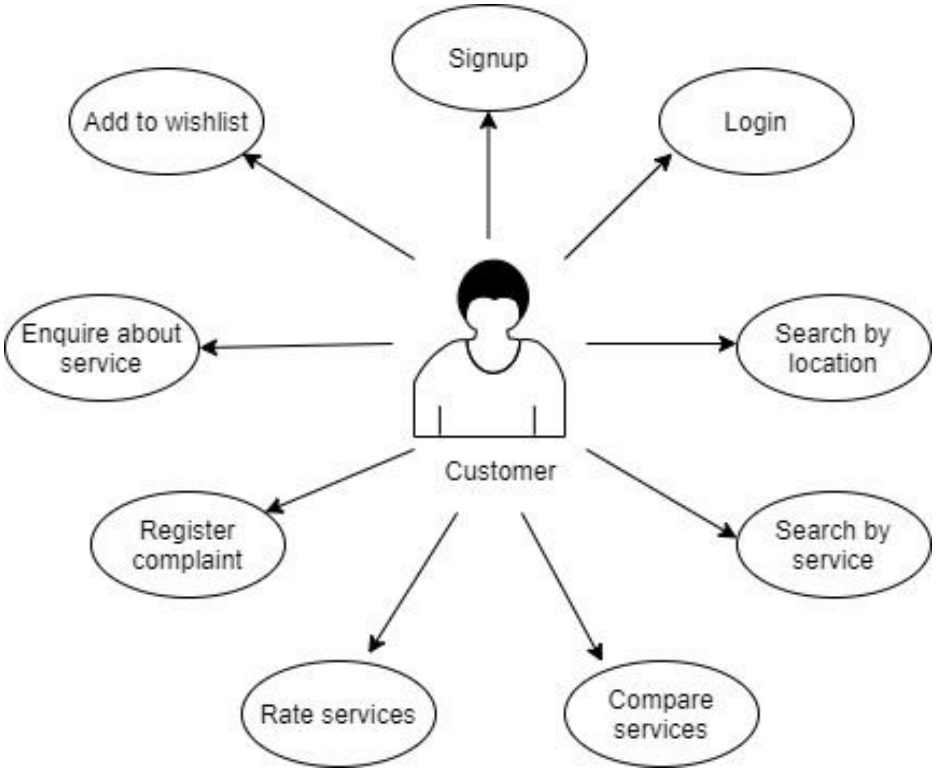


The user interface is intuitive, interactive, responsive and super simple to use which provides seamless user experience. It contains the following interfaces

- Welcome Interface

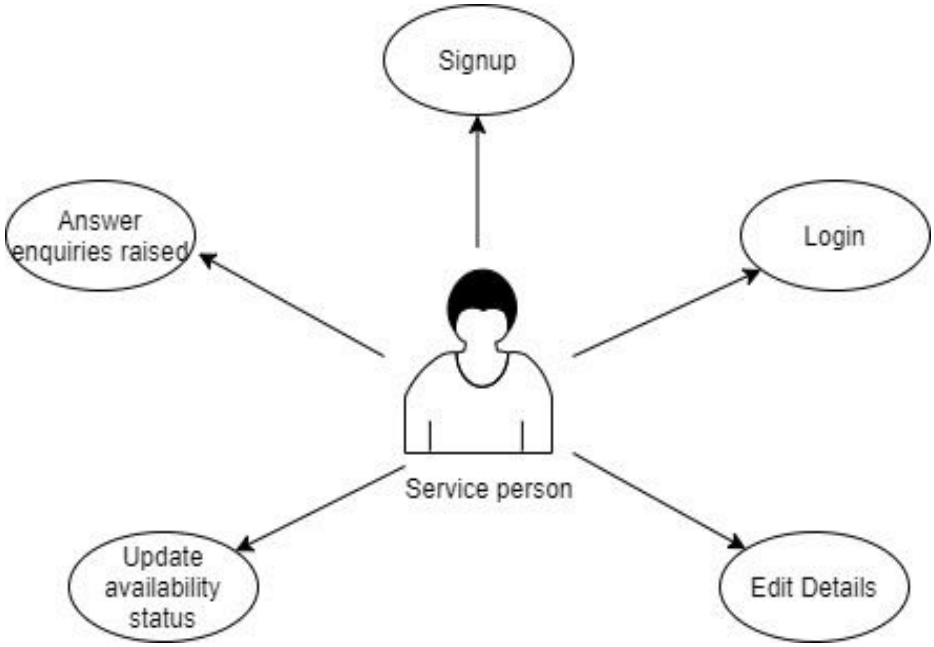
  This is the first interface that the user sees when they open the portal. In this interface, multiple login options(admin, customer, service person) will be displayed from which the user can choose one which directs them to the corresponding login page where they need to enter their username and password for authentication. If they do not have an account then they can create a new account.

- Customer Interface



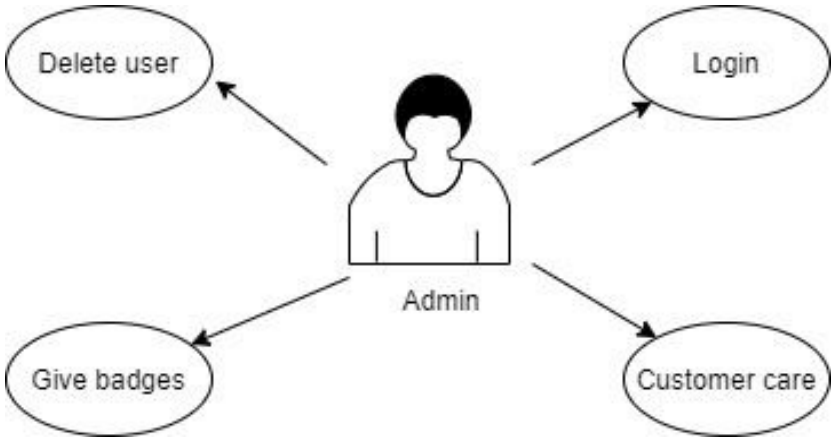
For new account creation, customers can provide their details and sign up.
After successful login, a customer can browse through catalogs of various services available on the site. He will be provided with filters by location, review, drop enquiry, register complaint, wishlist, compare services options.

➢ Service person Interface



For new account creation, service person can provide their details and sign up. After successful login, a service person will be provided with enter or edit details, update availability, respond to customer enquiries options.

➢ Site Admin Interface



After successful login, a site administrator can delete a user, provide badges to service persons, and provide customer care services.

3.1.2 Hardware Interfaces

➢ **Server side:**

The web application will be hosted on a web server and the server listen to the port number 80 which is standard for HTTP

➢ **Client side:**

- Processor: Pentium or greater
- RAM: 512MB
- Keyboard and Mouse
- Monitor

3.1.3 Software Interfaces

➢ **Server side:**

- An Apache web server will accept all requests from the client

.

- A database will be hosted centrally using MySQL.

➢ **Client side:**

OS capable of running modern webbrowser which can support Javascript & HTML5

3.2 Functional Requirements

F1 - Register

- The system shall allow the customer to create an account
- The system shall allow the service provider to register into the system by giving required details such as description about service offered, tentative cost per hour, contact details etc

F2 - Login

- The system shall allow the registered users to log into their account after successful authentication by verifying their username and password
- The system shall allow the user to change their password

F3 - Delete user

- The system shall give complete access to the site administrators to delete any user in the database
- The system should raise error if admin tries to delete an invalid user

F4 - Change profile

- The system shall allow the service person to change/ edit their profile whenever they want and reflect the respective changes in the database
- The system shall allow the service person to change their availability status
- The system shall notify all the customers who have added this service person to wishlist

F5 - View services

- The system shall show the services requested by the customer by querying the database
- The system shall be able to filter services based on their type and location preferences as set by the customer. Customers can also compare different services

F6 - Enquiry

- The system shall allow customers to raise enquiries regarding the details of service person and requirements of the customer
- The system shall allow service person to answer the enquiries raised by the customer and sends notification to customer when their enquiry has been addressed

F7 - Customer Care

- The system shall allow the customer to register a complaint against any service person or any fraudulent activities on the site
- The system allows the site administrator to resolve the complaints

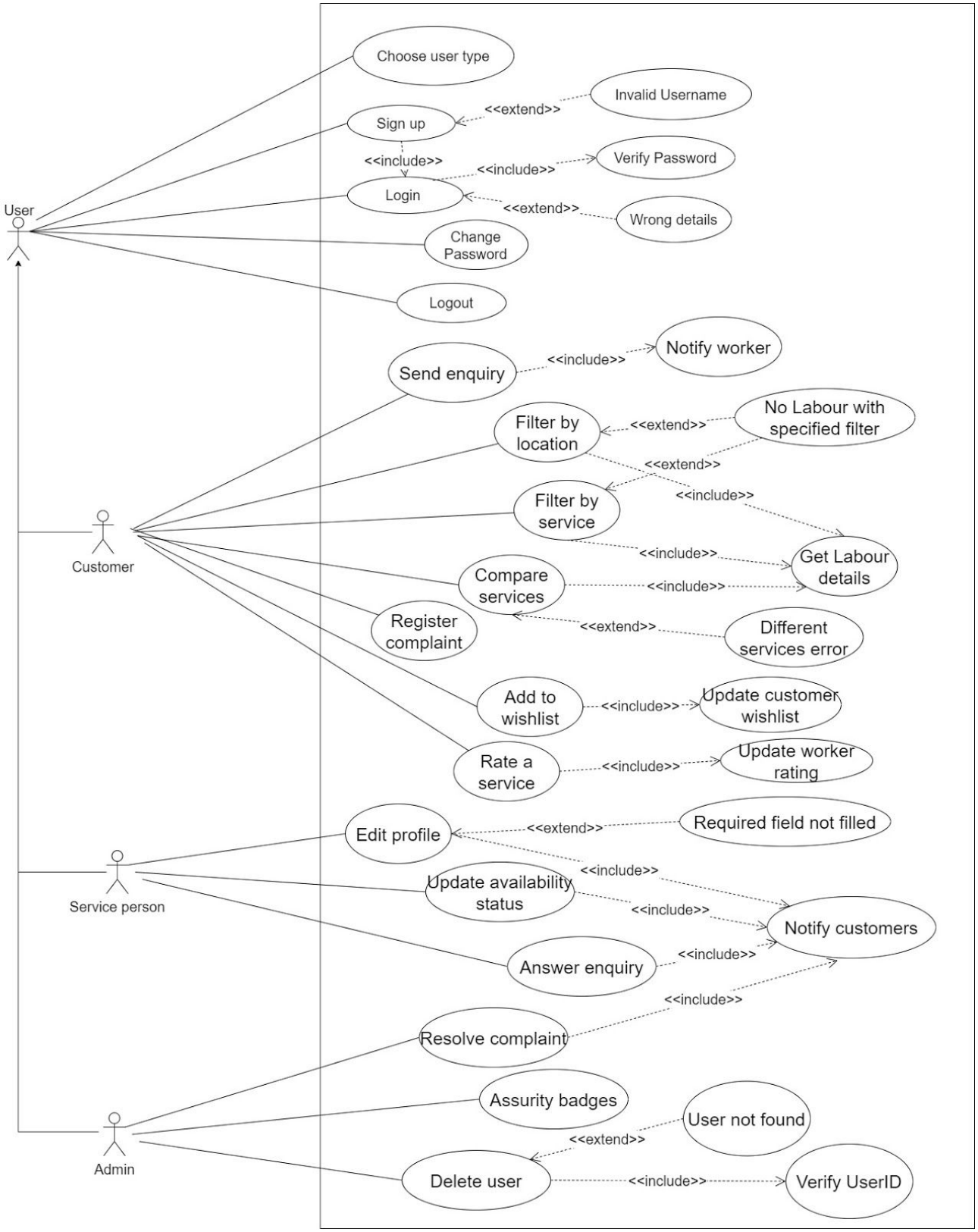
F8 - Wish list

- The system shall allow the customer to add their favorite service or service person to wish list showing their interest in that particular service
- The system should notify the customers whenever a service person in their wish list has changed their availability status or updated their profile

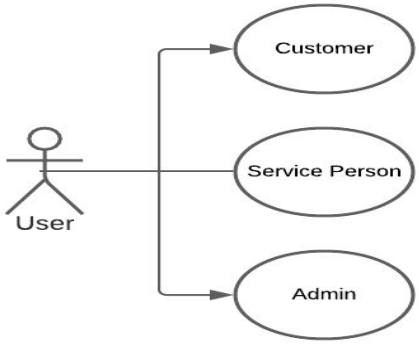
F9 - Ratings and Badges

- The system shall allow the customer to give ratings and review the service they opted for
- The site administrator shall take these ratings into consideration and allot assurity badges to the service persons which is testimony for their excellent service

3.3 Use Case Model

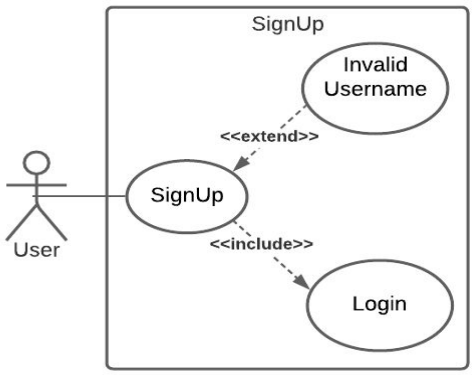


3.3.1 U1 - Choose User



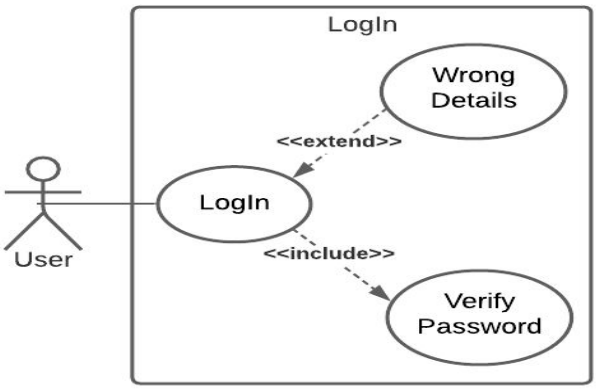
Author	Rahul kumawat
Purpose	User can choose from multiple user types.
Requirements traceability	None
Priority	High
Pre conditions	User is not already logged in and is on the homepage of the website.
Post conditions	User will be directed to the corresponding Admin /Customer/Service Person page.
Actors	User (Admin/Customer/Service Person)
Extends	None
Flow of events	➢ User access website/App ➢ user select User-Type
Includes	None
Notes/Issues	Nil

3.3.2 U2 - User SignUp



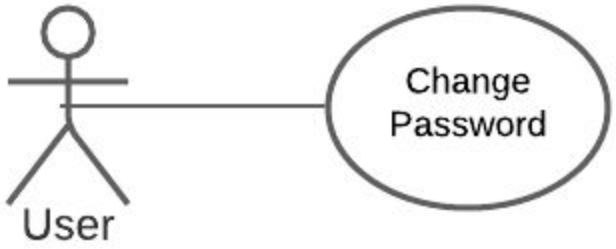
Author	Rahul kumawat
Purpose	Admin can sign-up to the portal.
Requirements traceability	F1 - Registration
Priority	High
Pre conditions	None.
Post conditions	A new user will be added to the database.
Actors	Customer/Service Person
Extends	Extend to invalid details if details entered by the user aren't valid.
Flow of events	➢ User click SingUp button ➢ Fill the details ➢ User data will be validated.
Includes	Includes Login if the details filled by the user were valid.
Notes/Issues	Nil

3.3.3 U3 - User Login



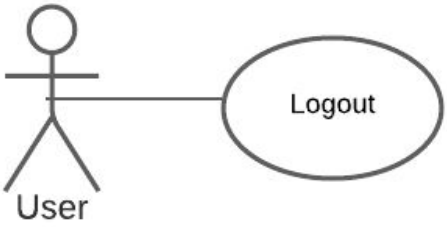
Author	Rahul kumawat
Purpose	User will be logged into the system.
Requirements traceability	F2 - Login
Priority	High
Pre conditions	User must be registered on the portal
Post conditions	The user will be logged into the portal.
Actors	Admin/Customer/Service Person
Extends	Extend to wrong details if the credentials were wrong.
Flow of events	➢ User click LogIn button ➢ Fill the details ➢ Details will be verified.
Includes	Includes Verify details for Login.
Notes/Issues	Nil

3.3.4 U4 - User Change-Password



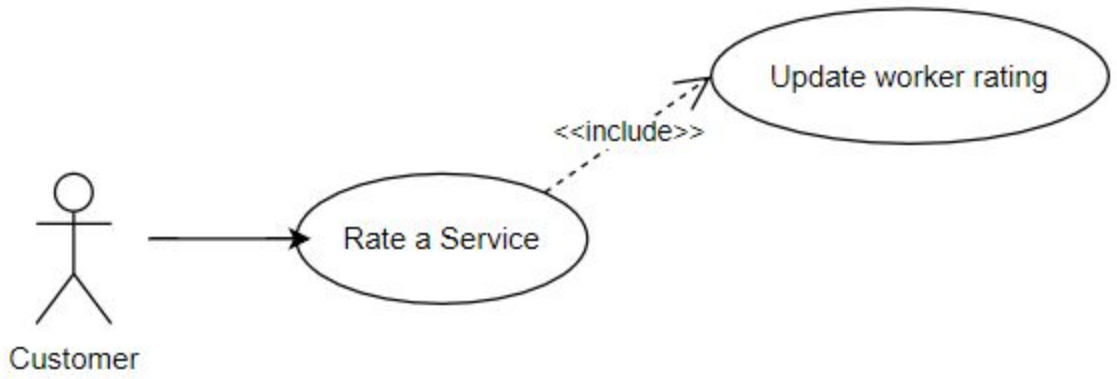
Author	Rahul kumawat
Purpose	The user can change his password.
Requirements traceability	F2 - Login
Priority	Low
Pre conditions	User has to be logged into the system.
Post conditions	The user can only login to the system further with his new password.
Actors	Admin/Customer/Service Person
Extends	None
Flow of events	➢ The user can change his default password set by the admin or can change his current password by entering his new password.
Includes	None
Notes/Issues	Nil

3.3.5 U5 - User Logout



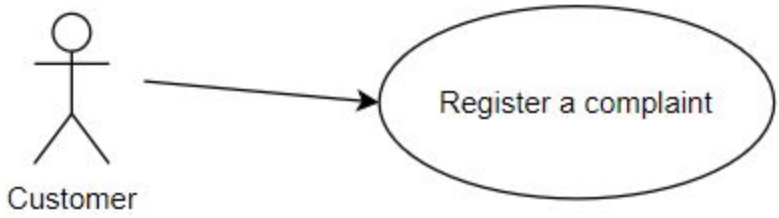
Author	Rahul kumawat
Purpose	The user will be logged out from the system.
Requirements traceability	None
Priority	Low
Pre conditions	The user must be logged into the system.
Post conditions	The user will be logged out from the system and will be redirected to the Welcome Interface.
Actors	Admin/Customer/Service Person
Extends	None
Flow of events	➢ User click Logout button ➢ User will be logged out.
Includes	None
Notes/Issues	Nil

3.3.6 U6 - Rate a Service



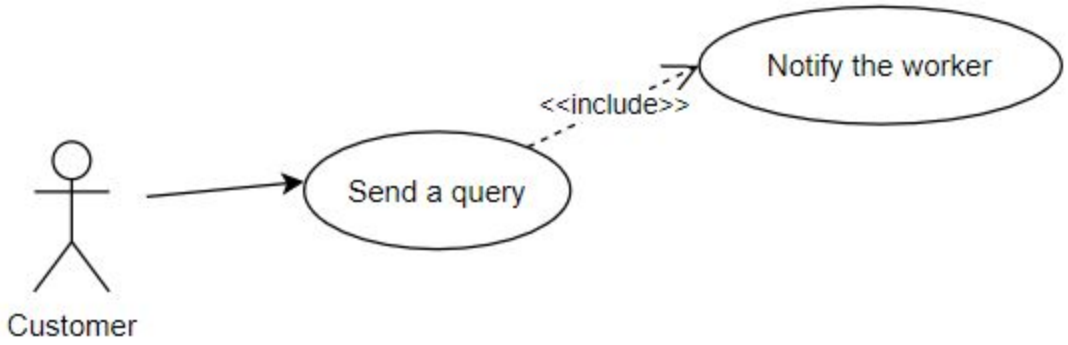
Author	Puchakayala Dheeraj Reddy
Purpose	Rate a Service opted by the Customer
Requirements traceability	F9 - Ratings and Badges
Priority	Medium
Pre conditions	The user must have logged in to the Application. The user must have taken the corresponding service.
Post conditions	The rating for that particular service will be collected. The overall rating of the worker providing the service will be updated.
Actors	Customer
Extends	None
Flow of events	• The user selects the service they opted • He rates the service and the worker on a scale of 5. • The overall rating of the worker will be updated considering the new rating.
Includes	The overall rating of the worker is updated
Notes/Issues	Nil

3.3.7 U7 - Register a complaint with site admin



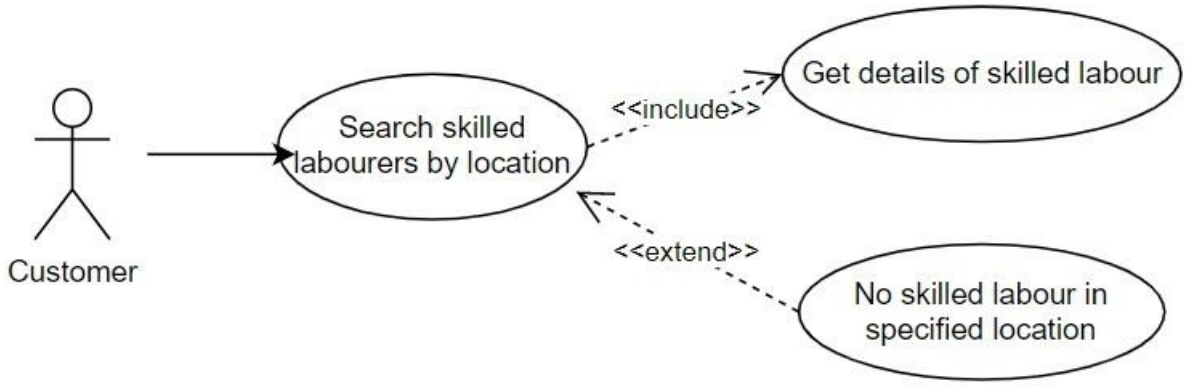
Author	Puchakayala Dheeraj Reddy
Purpose	To register a complaint with the server admin
Requirements traceability	F7 - Customer Care
Priority	Medium
Pre conditions	The user must be logged in to the application
Post conditions	A complaint is registered with the site admin
Actors	Customers
Extends	None
Flow of events	• The User chooses the option to register a complaint. • The necessary form is filled. • The user submits the form. • The complaint is registered.
Includes	None
Notes/Issues	Nil

3.3.8 U8 - Send a Query to the skilled worker



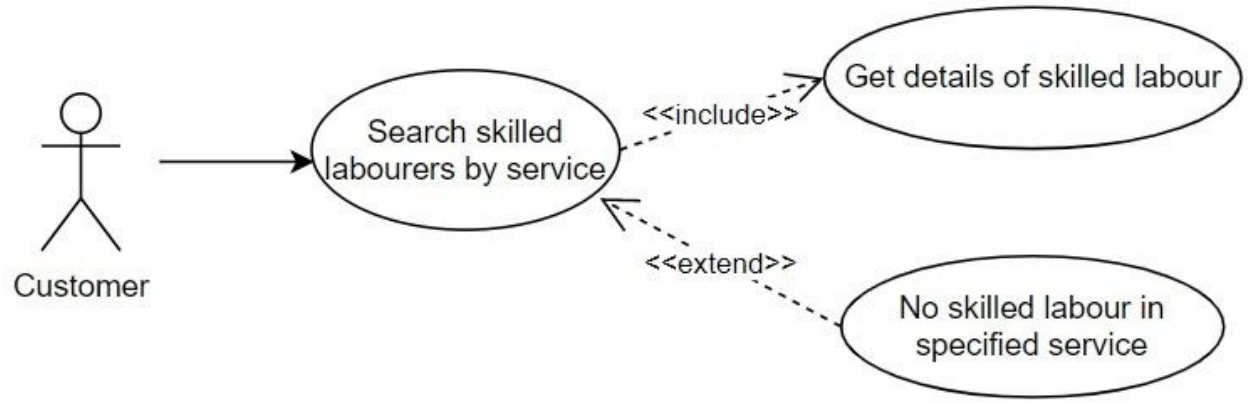
Author	Puchakayala Dheeraj Reddy
Purpose	To send a query to the skiller worker.
Requirements traceability	F6 - Enquiry
Priority	High
Pre conditions	The user must have logged in to the application
Post conditions	The query is sent to the worker and the worker gets a notification.
Actors	Customer, Worker
Extends	None
Flow of events	• The customer chooses a particular worker to send a query. • The customer fills the necessary information in a form and submits it. • The query is sent to the worker and he also gets a notification.
Includes	Send a notification to the worker
Notes/Issues	Nil

3.3.9 U9 - Search by location



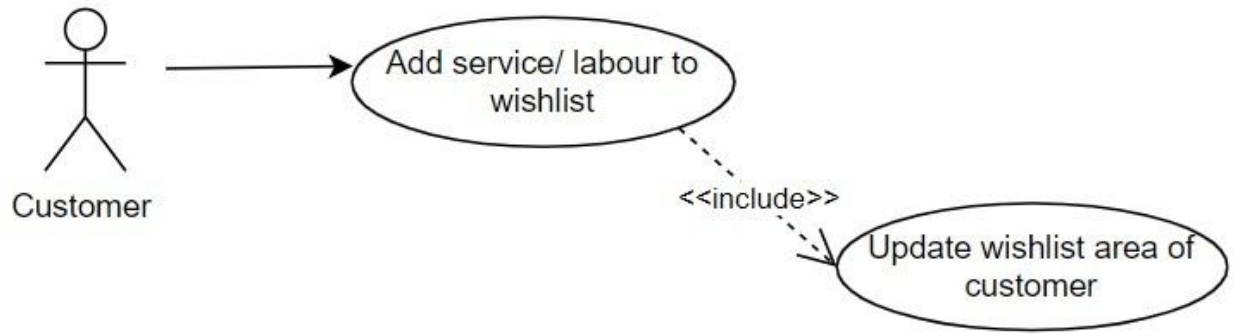
Author	Goutham P
Purpose	Potential Customers can search skilled labourers by location.
Requirements traceability	F5 - View Services
Priority	Medium
Pre conditions	An User who is visiting the Skilled Labour Site.
Post conditions	A web page with the skilled labourers in the specified location is displayed.
Actors	Customer
Extends	A notification is shown in case there are no skilled labourers in the specified location.
Flow of events	The data relating to all the skilled labourers is scanned and those whose location falls in the specified location are listed.
Includes	The details of the relevant skilled labourers is also displayed along with their names.
Notes/Issues	Nil

3.3.10 U10 - Search by service type



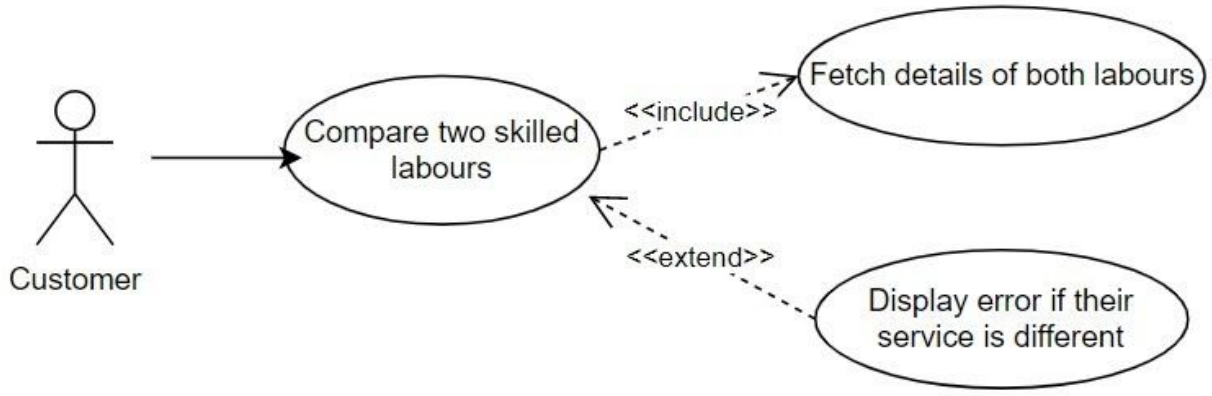
Author	Goutham P
Purpose	Potential Customers can search skilled labourers by service.
Requirements traceability	F5 - View services
Priority	High
Pre conditions	An User who is visiting the Skilled Labour Site.
Post conditions	A web page with the skilled labourers with the specified service is displayed.
Actors	Customer
Extends	A notification is shown in case there are no skilled labourers with the specified service.
Flow of events	The data relating to all the skilled labourers is scanned and those whose service type is specified are listed.
Includes	The details of the relevant skilled labourers is also displayed along with their names.
Notes/Issues	Nil

3.3.11 U11 - Add to wishlist



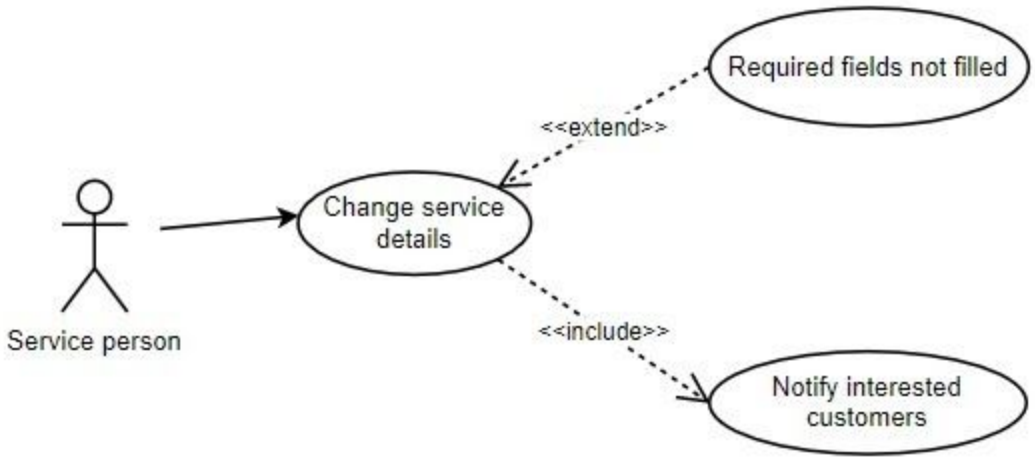
Author	Goutham P
Purpose	Logged in Customer can add a service to wishlist and receive updates about them
Requirements traceability	F8 - Wish list
Priority	Medium
Pre conditions	A logged in customer.
Post conditions	A particular service/ labourer is added to the wishlist of the respective logged in customer.
Actors	Logged in customer
Extends	Nil
Flow of events	The logged in customer browses through the available service/ skilled labourers and clicks on the wishlist button beside the required service/skilled labourer. Consequently the clicked entity is added to the wishlist of the logged in customer, which can be viewed under his wishlisted items.
Includes	The wishlist area of the logged in customer is updated with the chosen service/ labourer.
Notes/Issues	Nil

3.3.12 U12 - Compare services



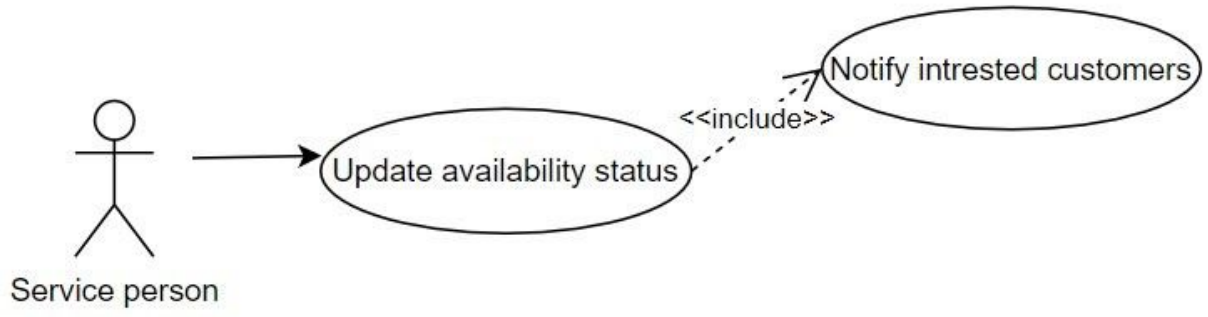
Author	Goutham P
Purpose	Customer can compare between two skilled labourers offering a particular service.
Requirements traceability	F5 - View services
Priority	High
Pre conditions	An User visiting the Skilled Labour Site.
Post conditions	A side by side comparison of the chosen skilled labourers including their past work experience, their rating, cost per hour and other factors.
Actors	Customer
Extends	In case the chosen skilled labourers are not providing the same service, an error message will be shown.
Flow of events	The customer can click on the compare button on a skilled labourer and then choose another skilled labourer. After this the data related to both the skilled labourers are fetched and displayed side by side, provided both of them offer the same service.
Includes	Details of both the labourers are fetched.
Notes/Issues	Nil

3.3.13 U13 - Change Service details



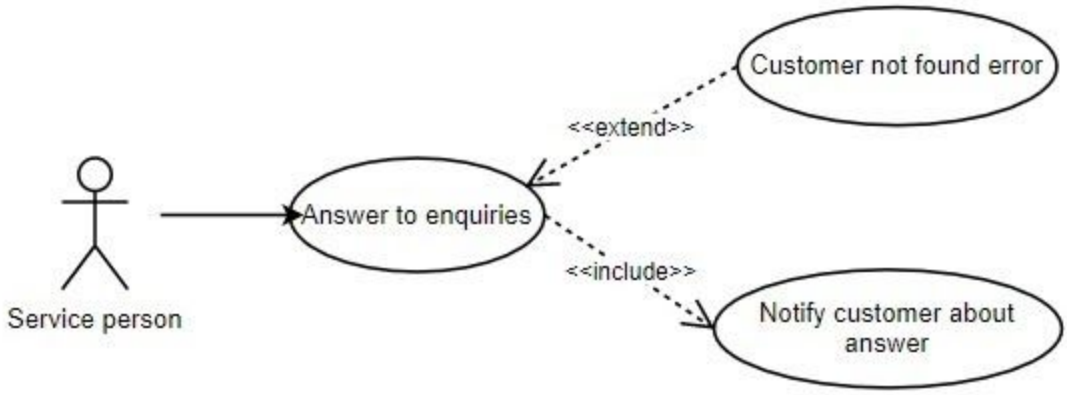
Author	Singam Sai Bala Subrahmanyam
Purpose	Service person enter/ change service details (cost/hr, contact, summary, pictures)
Requirements traceability	F4 - Change Profile
Priority	High
Pre conditions	Service person logged into their account
Post conditions	Service details gets updated & reflected on site
Actors	Service persons
Extends	Display error if required fields not filled
Flow of events	➢ Service person selects change service details option ➢ Service person can make changes in corresponding fields such as cost/hr, contact, summary, pictures ➢ Changed fields gets updated in the database and reflected on site
Includes	Notify those customers who added this service person to wish list about changes
Notes/Issues	Nil

3.3.14 U14 - Update availability status



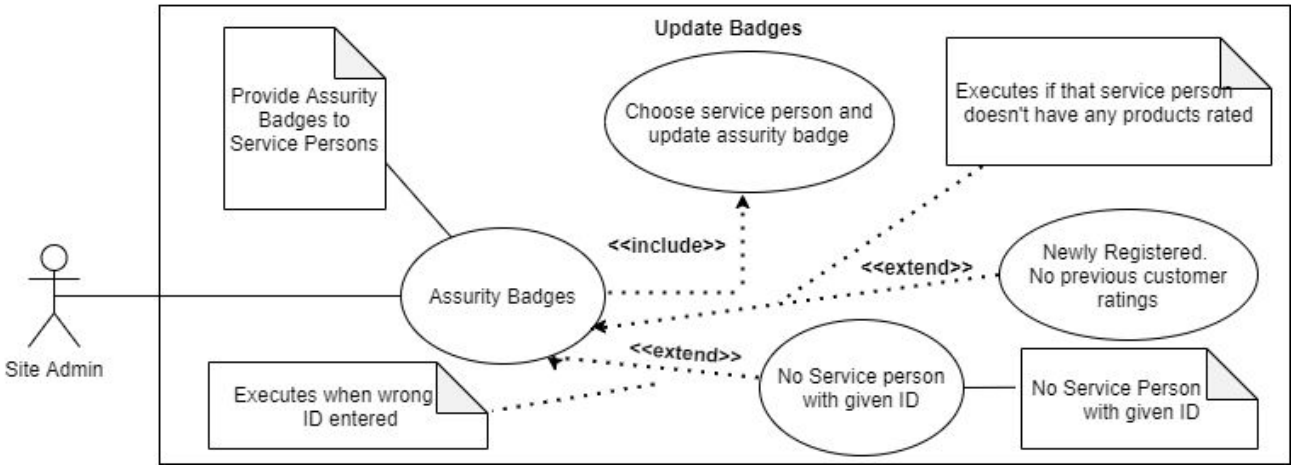
Author	Singam Sai Bala Subrahmanyam
Purpose	Service person changes their availability status
Requirements traceability	F4 - Change Profile
Priority	High
Pre conditions	Service person logged into their account and select update availability option
Post conditions	Availability status of service person gets updated and reflected on site
Actors	Service person
Extends	None
Flow of events	➢ Service person selects update availability status option ➢ Service person changes the status and it gets updated in database and reflected on site
Includes	Notify all customers who added the particular service person to their wish list.
Notes/Issues	Nil

3.3.15 U15 - Answer Enquiry



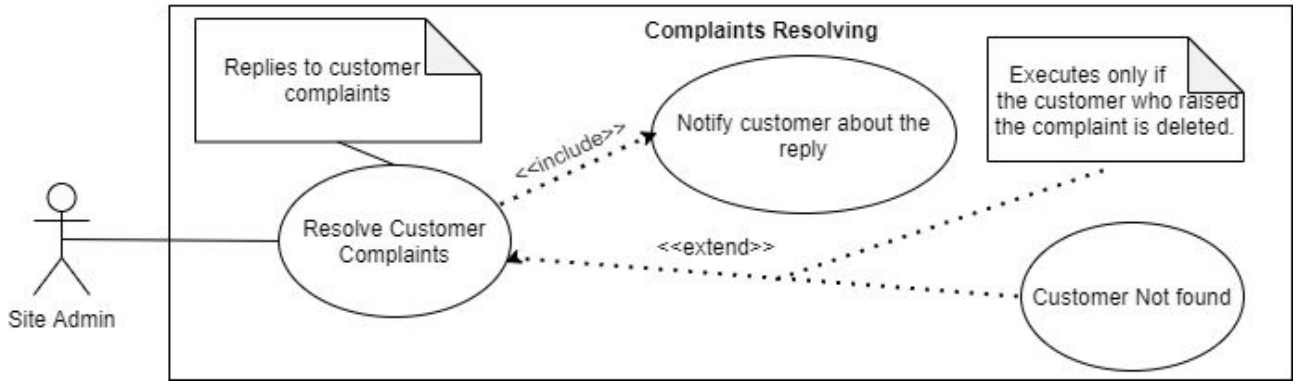
Author	Singam Sai Bala Subrahmanyam
Purpose	To answer the enquiries raised by customers
Requirements traceability	F6 - Enquiry
Priority	Medium
Pre conditions	Service person selects the enquiry
Post conditions	Answer to the enquiry will be sent to customer who raised it and customer gets notified
Actors	Service person
Extends	When customer is deleted, error message is displayed while sending message
Flow of events	➢ Answers the enquiry raised which will be sent to customer ➢ Customer will get notified when he receives a reply from service person
Includes	Notify corresponding customer
Notes/Issues	Nil

3.3.16 U16 - Assurity Badges



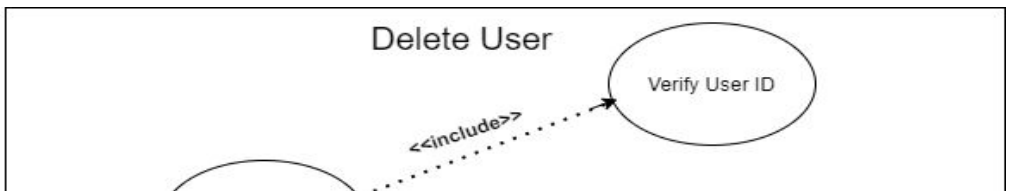
Author	Yacha Venkata Rakesh
Purpose	To provide assurity badges to Service Person
Requirements traceability	F9 - Ratings and Badges
Priority	High
Pre conditions	Has to successfully log in to their respective account and choose a service person
Post conditions	Service Person is awarded with assurity badges based on his past customer ratings
Actors	Site Admin
Extends	If the service person has no previous service then an error message gets prompted. Or if the chosen service person's account is deleted then the error message gets prompted.
Flow of events	➢ Chooses a service person and updates their assurity badges based on recent activities.
Includes	Update assurity badges
Notes/Issues	Nil

3.3.17 U17 - Resolve Customer complaints



Author	Yacha Venkata Rakesh
Purpose	To resolve the complaints raised by customers
Requirements traceability	F7 - Customer care
Priority	Medium
Pre conditions	Site Admin selects the complaint
Post conditions	Reply to that particular complaint will be notified to the customer who raised it.
Actors	Site Admin
Extends	When the customer who raised the issue is deleted, an error message will be displayed while submitting the request.
Flow of events	➢ Answers the complaint raised by the customer and submits to the system. ➢ Customer will get notified when they receives a reply from the Site Admin
Includes	Notify customer with corresponding ID about the reply.
Notes/Issues	Nil.

3.3.18 U18 - Delete User



Author	Yacha Venkata Rakesh
Purpose	To delete an existing customer/Service Person
Requirements traceability	F3 - Delete user
Priority	High
Pre conditions	Has to successfully login to admin account
Post conditions	User with provided userID will get deleted from the database and user gets notified
Actors	Site Admin
Extends	When the user ID entered by the Admin doesn't show any valid User an error message will be displayed while submitting the request.
Flow of events	➢ Enters the user ID of the user whom admin wants to delete. ➢ The corresponding user and their data gets deleted from the database.
Includes	Verify User ID and once if it's successful delete the user from the database.
Notes/Issues	Nil.

4 Other Non-functional Requirements

4.1 Performance Requirements

As this is a professional web application, the system should support at least 2000 concurrent users. This statement provides a general sense of reliability when the system is under load. it is important that a substantial number of users be able to access the system at the same time. The times when the system will be under the most stress are likely during joining the group or special project sample submission. Therefore, it must be able to handle at least 2000 concurrent users.

4.2 Safety and Security Requirements

Safety Requirements

If there is extensive damage to the wide portion of the database due to catastrophic failure, such as disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

Security Requirements

Passwords will be saved in encrypted form using SHA-3 in the database in order to ensure user's privacy. User's IP will be logged to monitor whether any bad attempts are initiated and also limit the number of requests from a particular IP or MAC address to prevent DDOS attacks.

4.3 Software Quality Attributes

4.3.1 Reliability

The reliability of the overall program depends on the reliability of the separate components.

4.3.2 Availability

The system should be available at all the times, meaning the user can access it using a web browser, only restricted by the down time of the server on which the system runs. In case of hardware failure or database corruption, a replacement page will be shown. Also in case of a hardware failure or database corruption, backups of the database should be retrieved with the MySQL server and saved by the administrator.

4.3.3 Usability

The application should satisfy a maximum number of users needs for which we could monitor average usage statistics and maximum usage statistics based on which we could upgrade the capacity of the database to support more concurrent users.

4.3.4 Maintainability

MySQL is used for maintaining the database and the Node.js server takes care of the site. In case of failure, a re-initialization of the program is recommended.

4.3.5 Portability

The application is windows-based and should be compatible with other operating systems as well. Node.js programs are practically independent of the OS-system which they communicate with. The end-user part is fully portable and any system using any web browser should be able to use the features of the application.

5 Other Requirements

Business rules ⇒

- Charges will be taken from the service person on the basis of the type of service and how many times that service was chosen by customers through our website/App.
- Charges defined by the service person could vary depending on the customer's reviews and rating.

Database requirements ⇒

- Operations performed on databases should not result in any inconsistency.
- Storage for the databases must be sufficient to store large amounts of data.

Legal requirements ⇒

- Service persons must not enter any wrong information.
- Charges must be defined on each condition for all services beforehand and must not change by the service person onsite.
- Administrators can block accounts of service persons or customers if found any illegal uses or frauds.
- Customers must not review any content which is illegal, obscene, abusive, threatening, defamatory, invasive of privacy etc.
- All contents available on a website are copyright and must not be used by anyone without the permission of the website administrator.

Other requirements ⇒

- All the users are expected to be familiar with basic web browsing and web interfaces.
- The language of the entire web interface will be in English. So basic English is assumed to be known by the corresponding users
- Customer care should investigate appropriately if it gets a complaint from a customer regarding the service provided by a service person.

Appendix A - Activity Log

Meeting Log

Meeting	*Date - Time*	*Duration*	*Agenda*
Meeting - 1	*09-02-2021 - 4:00 PM*	*30 minutes*	*Discuss action plan* *Compile use cases by next meet*
Meeting - 2	*12-02-2021 - 5:00 PM*	*60 minutes*	*Finalise use cases* *Work division*
Meeting - 3	*23-02-2021 - 5:00 PM*	*30 minutes*	*Finalise SRS*

Contributions

Group member	Contributions
Singam Sai Bala Subrahmanyam B180522CS	Section 3 Usecases: U13, U14, U15
Goutham P B180330CS	Section 1 Usecases: U9, U10, U11, U12
Yacha Venkata Rakesh B180427CS	Section 4 Usecases: U16, U17, U18
Rahul Kumawat B180635CS	Section 5 Usecases: U1, U2, U3, U4, U5
Puchakayala Dheeraj Reddy B180902CS	Section 2 Usecases: U6, U7, U8