# Design Document

## for

# Skilled Labour Support

Version<1.0>

Prepared by Team 17:
(Based on SRS Version 1.0)

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**Course:** **CS3004D Software Engineering**
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# Glossary

| DB | Database |
|----|----------|
| JS | Javascript |
| Opt | optional |

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*April 8th, 2021*

# 1. Detailed Design through UML diagrams

## 1.1 System model using Class Diagram

### 1.1.1 Class Diagram

**User**

Username: string
Name: string
Utype: int
Password: string
UserID: string

SetUsername(username: string) : void
SetPassword(password: string): void
Login(username: string, password: string) : bool
VerifyPwd(username: string, password: string): bool

**Site admin**

Roles: string

UpdateStatus(ComplaintID: string, statusFlag: int): void
AssignBadge(ServicePersonID: string, ServiceID: string): void
DeleteUser(UserID: string): void

1

**Resolves**

**Customer**

Contact No: string

searchByLocation(location: string,service Name:string): Array
searchByService(serviceName: string): Array
compareServiceperson(id1: string,id2: string):  Array
RateService(ServiceID: string): void
SeekSupport(SupportType: int): void

1

**Seeks**

0..*

**Support**

SupportID:String
SupportType: int
Subject: string
Details: string

GetDetails(Subject: string,Details: string):void

**Service Person**

Availability Status: bool

Register(ServiceName: string): string
Update Availability(Availability Status: bool): void

1

**Offers**

1..*

**Service**

ServiceID: string
ServiceName: String
Cost/hr : float
Contact: string
Rating: float
Location: String

setCost(cost: ): void
setContact(contact: string): void
setLocation(Location: string): void

1

**Reply**

**Complaints**

Status: string
Resolution: string

*

**Enquiry**

ServiceID: string
Reply: string

GetServiceID(ServieID: string): void

*

# 1.2 Responsibilities - Use Case Diagram

# 1.3 Static snapshot of the system - Object Diagram

**U3: User**

Username: Adm100
Name: Admin1
Utype: 1
Password: XXXXX
UserID: 1

**U1: User**

Username: Rav56
Name: Ravi
Utype: 2
Password: XXXXX
UserID: 1098

**U2: User**

Username: Jen09
Name: Jenny
Utype: 2
Password: XXXXX
UserID: 1010

**U4: User**

Username: JAY123
Name: Jay
Utype: 3
Password: XXXXX
UserID: 1762

**A1: Site Admin**

Role: CustomerCare

**C1: Customer**

Contact No: 701801901

**C2: Customer**

Contact No: 901801701

**SP1: Service Person**

Availability Status: Available

**Co1: Complaint**

Status: Unresolved
Resolution: N/A

**S1: Support**

SupportID:Co962
SupportType: 1
Subject: Fraud
Details: .......

**S2: Support**

SupportID:En709
SupportType: 2
Subject: Quote amount
Details: .......

**S1: Service**

 ServiceID: XYZ456
ServiceName: Electrician
Cost/hr : 300
Contact: 9988990011
Rating: 2.5
Location: Pune

**S2: Service**

 ServiceID: ABC123
ServiceName: Plumber
Cost/hr : 500
Contact: 9988990011
Rating: 3.7
Location: Pune

**En1: Enquiry**

ServiceID: XYZ456
Reply: Rs 10000

# 1.4 System Interactions through Sequence Diagrams

## 1.4.1 User Login - Rahul Kumawat

Initially for accessing authenticated services users have to login on the system. This sequence captures the message passing between activation bars to process login functionality. Initially the user types the credentials (username & password) in the input field of the login page and clicks on submit. Entered data are validated with data stored in the database.

If details matched, the system fetches the user-type of the currently logged in user from the database and redirects the user to corresponding user-page.Else an error message is shown displaying that authentication failed and it clears the data entered in input fields.
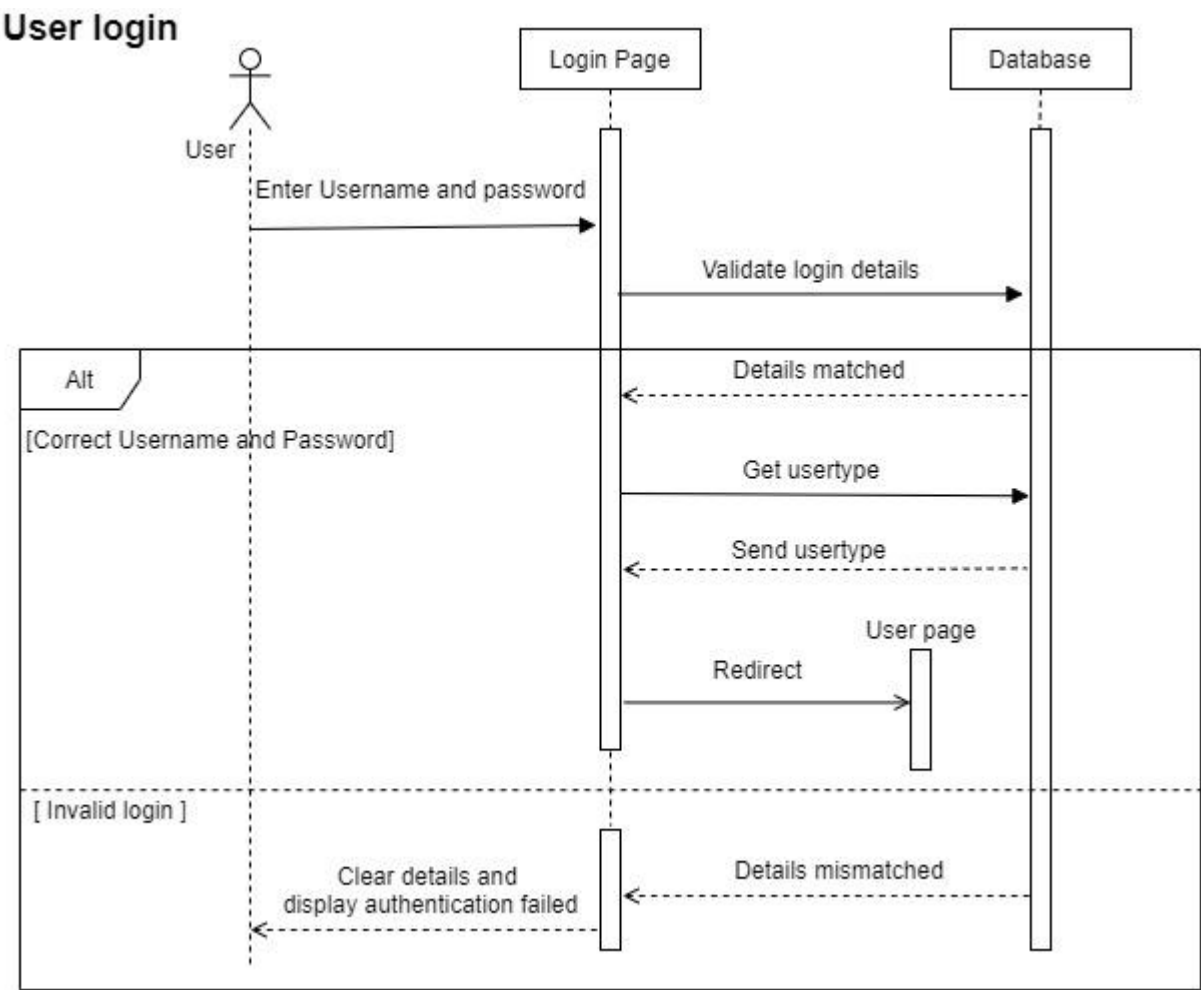
## 1.4.2 Service Registration - Yacha Venkata Rakesh

This sequence describes the process of registering a service by a service person. The service person logs into the site and then goto Register service and then enters their details. The service page raises a request to the site admin to register the service. Then the site admin validates the details provided, on success the service gets registered and the service registered message is displayed. Else the request will be dropped and service registration failed message is shown.

**Service Registration**
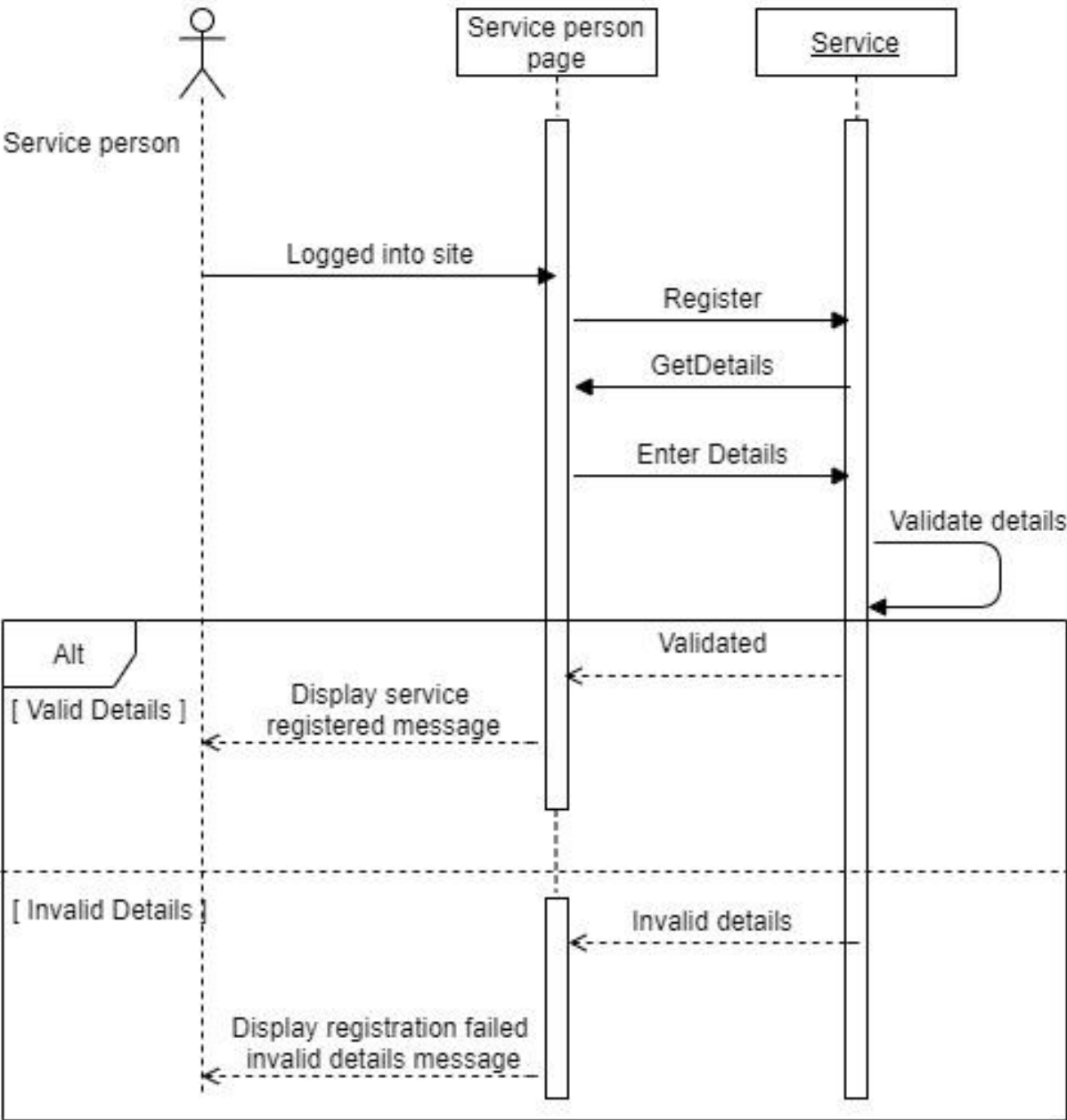
## 1.4.3 Filter Services - Goutham P

This sequence captures the process of searching for a particular service by a customer. The customer has to go to the search bar and then give the customer page the type of filter to be used to retrieve the data. There are two types of filters that are Filter By Location and Filter by Service Name.After this location/ servicename is entered by the customer. In case of a valid search the corresponding data is retrieved from service and shown else an error message is displayed.

**Service Search**
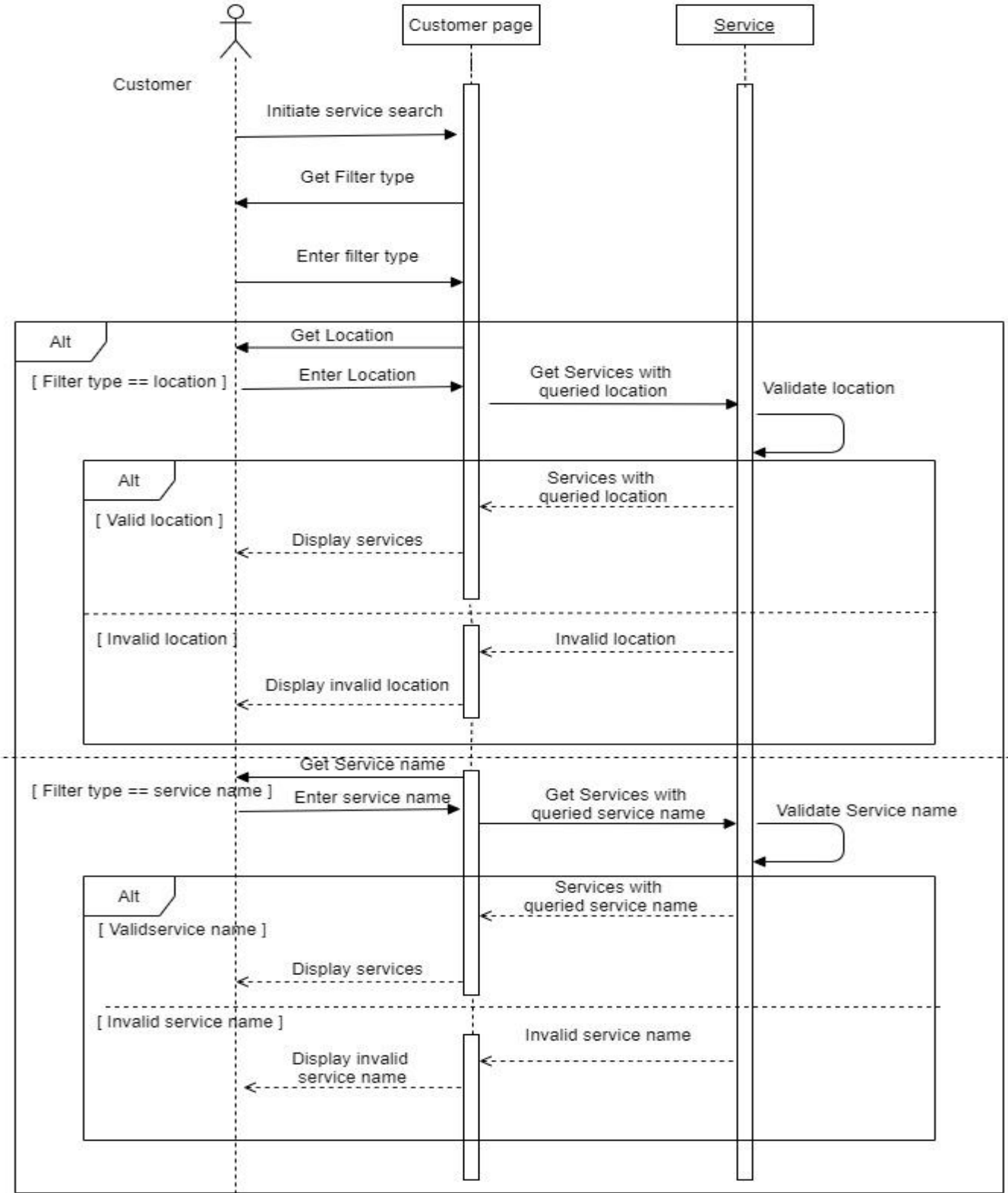
## 1.4.4 Customer Support - Singam Sai Bala Subrahmanyam

The following sequence diagram shows series messages exchanged between objects when a customer initiates the customer support option. The customer support page requests for the details and support type. If the customer chooses a complaint type then the complaint will be forwarded to the site admin and if site admin resolves the issue then the customer is notified about resolution. If the support type is enquiry then the customer will further enter service id and an enquiry case will be forwarded to the service person who offers that service and when they replies with the details, customer will be notified.

**Customer Support**
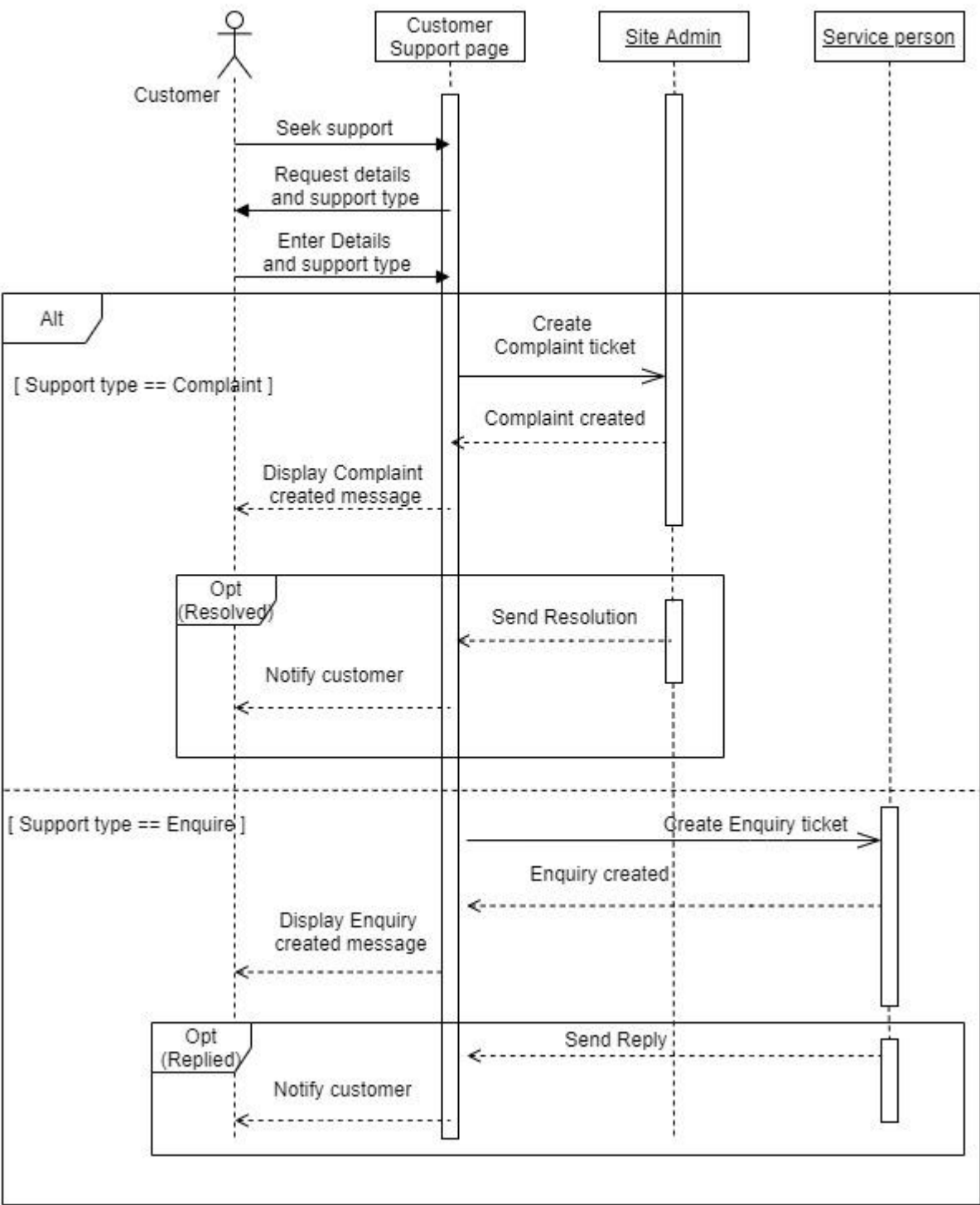
## 1.4.5 Rate Service and Assign Badges - Puchakayala Dheeraj Reddy

The rating process starts with the customer starting the rating process. The service page requests for the service ID and the ratings. The service ID and the rating are provided by the customer. Then the service page raises a request to the site admin to validate the service claim of the customer. The site admin forwards the request to the service person. If he gets a positive response, the service ratings are updated. Then the condition for the assurity badge is checked. If it passes, the service person gets a badge for the service. In the other case, the rating request is dropped.

**Rate service and Assign badges**
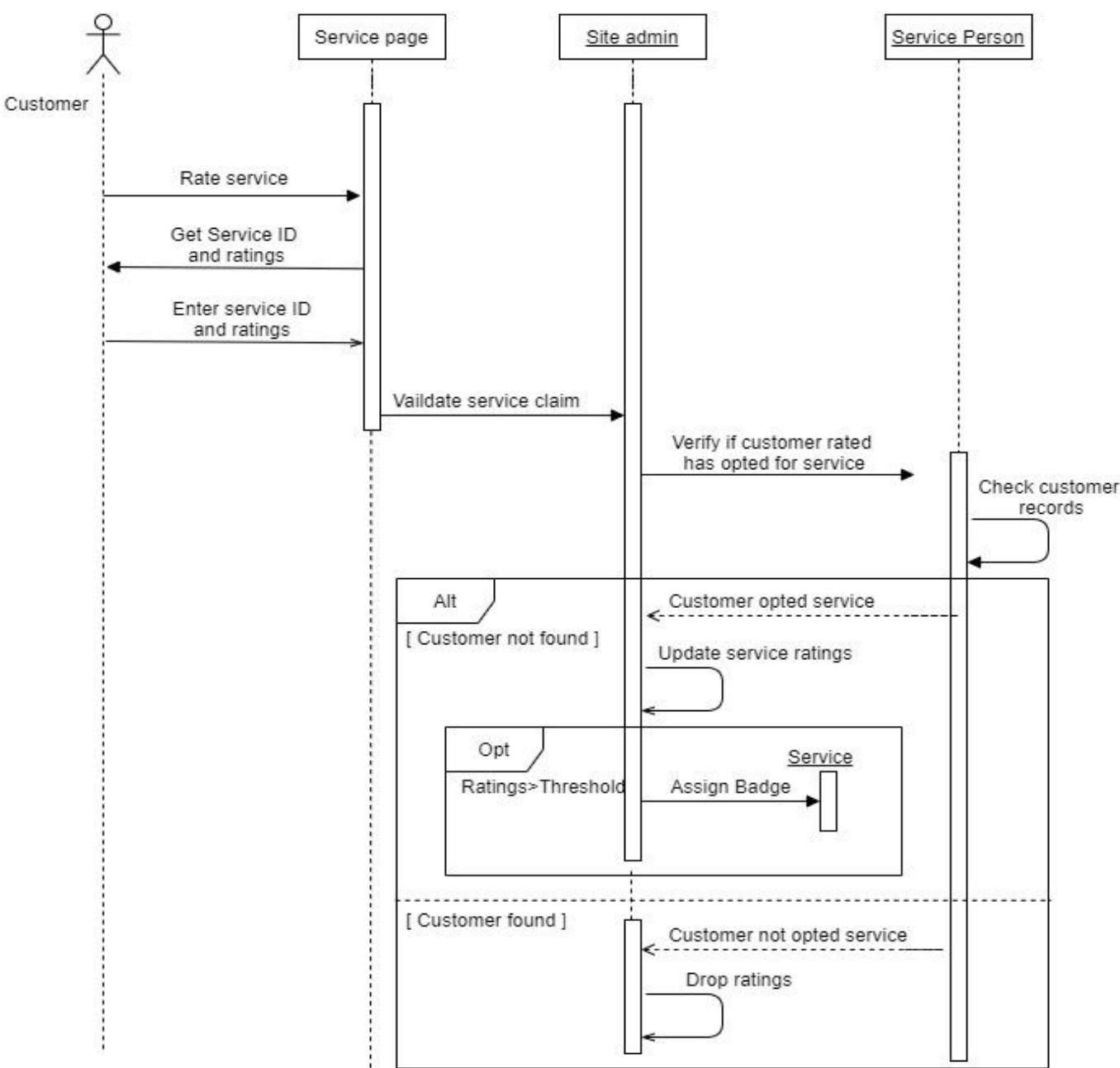
# 1.5 Control and Data Flows through Activity Diagrams

## 1.5.1 User Login - Rahul Kumawat

This activity diagram presents a series of actions about how a user logged in to the system. Initially the user enters username and password in the corresponding input field and hits enter. Entered data are validated by checking the database.

If credentials are invalid then action is to redirect the user to the starting point. Else system checks the user-type of currently logged-in user. And then based on the user-type system redirect user to the corresponding user-page.
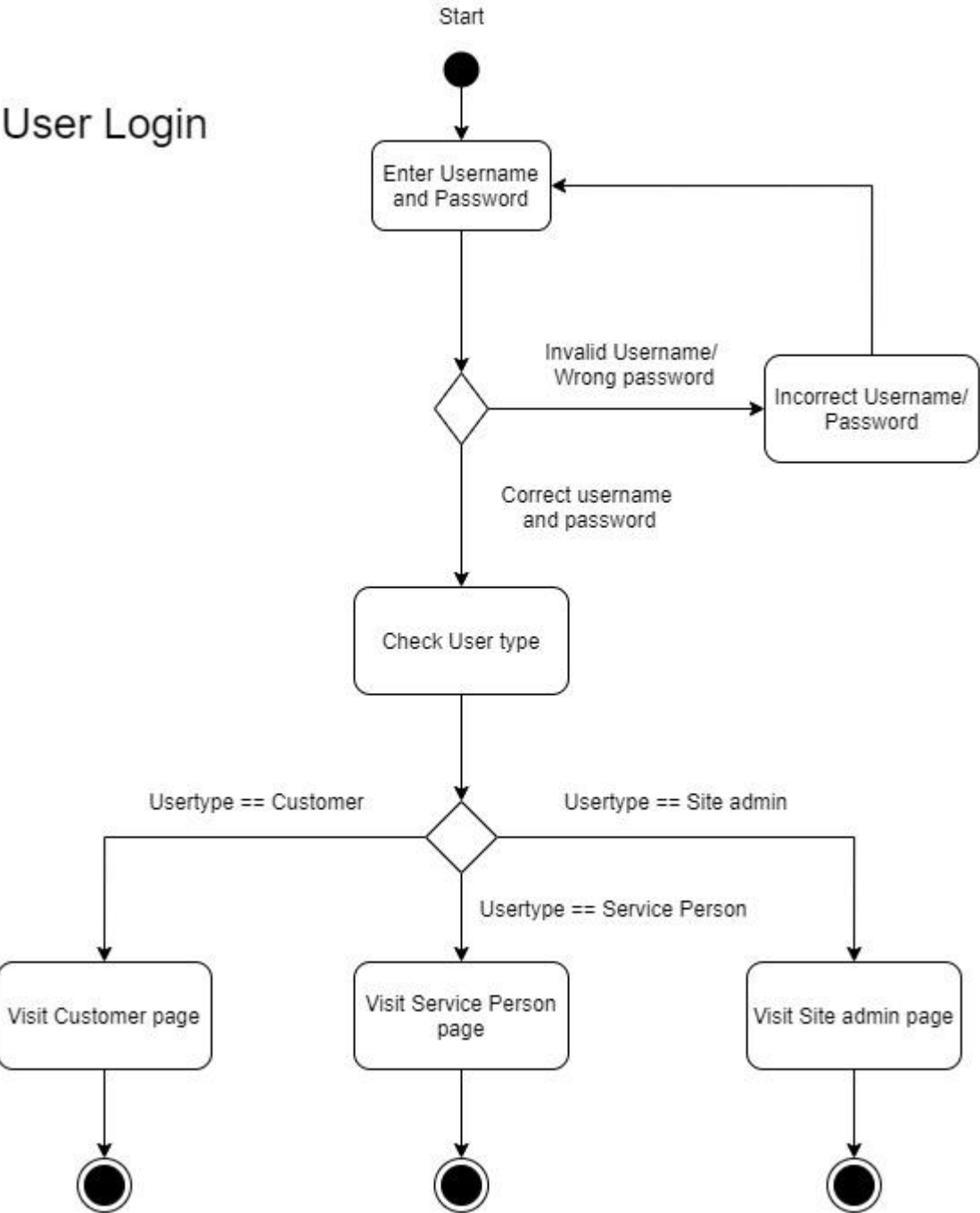
## 1.5.2 Service Registration - Yacha Venkata Rakesh

This process of Service Registration is initiated by the service person. Service person visits the service registration page and enters details of their phone number, location and required service name and this request is forwarded to the site admin for validation. After successful validation the service will be registered on behalf of the requested service person. Invalid details will display error messages and redirect to the registration page again.
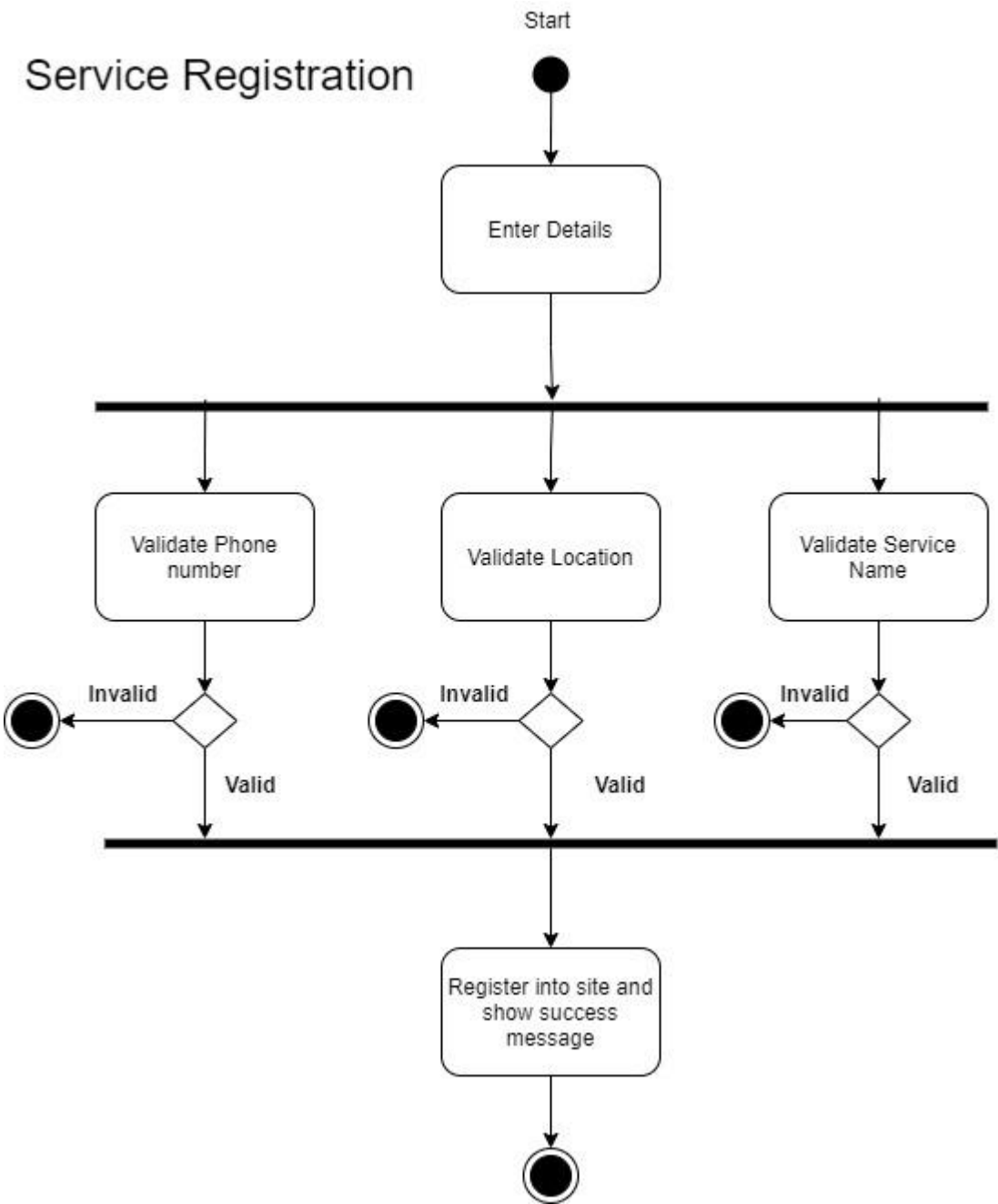
## 1.5.3 Filter Services - Goutham P

The control flow starts when the user enters the filter type. Then that filter type is passed through a decision node which gives a different path to each filter Type. After that in each of the paths there will be a decision node based on the location/ service name that is entered by the user. In case of invalid location/service name, the decision node path redirects the user to again enter the filter type. In case of a valid location/service name the corresponding list of services is shown.
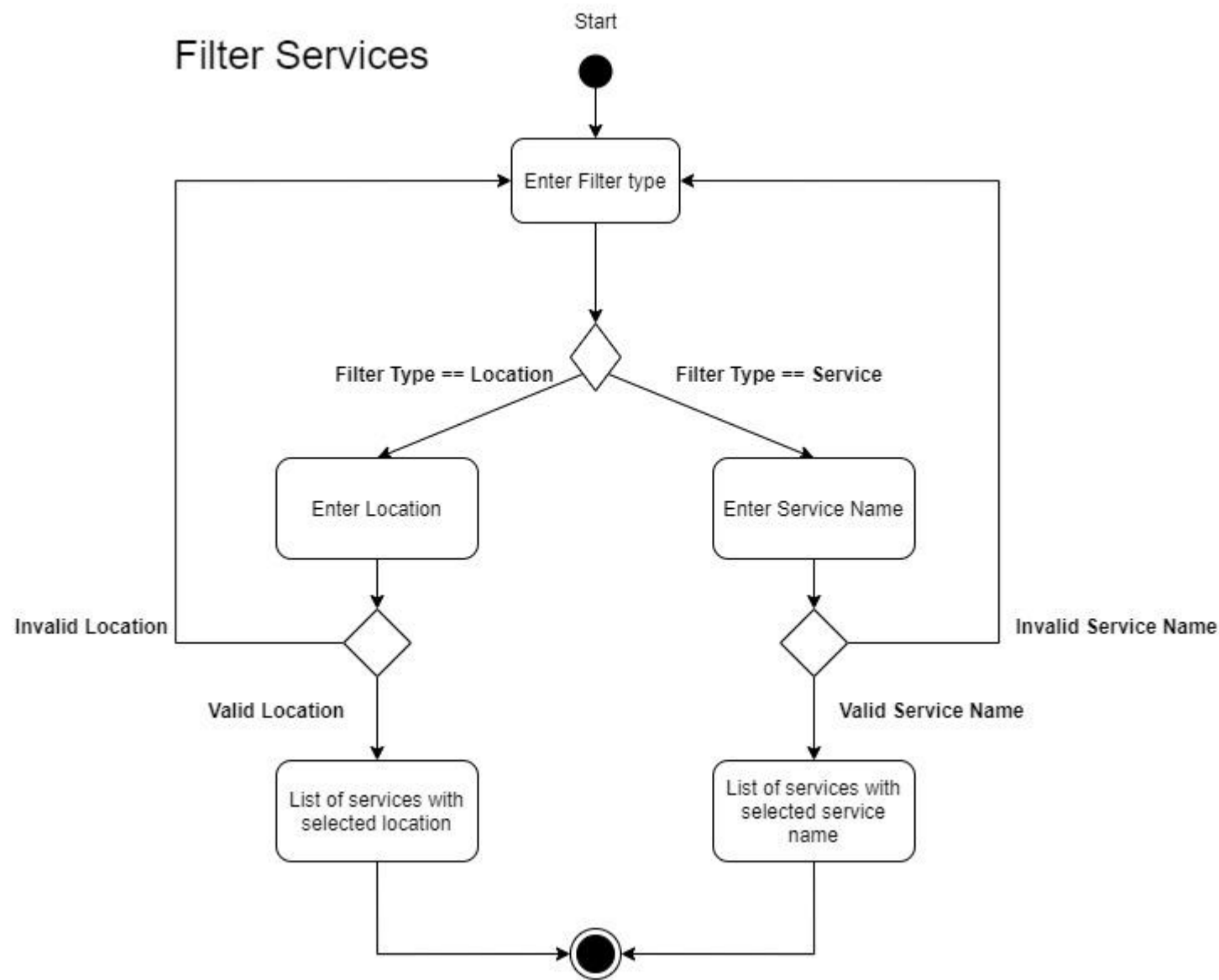
## 1.5.4 Customer Support - Singam Sai Bala Subrahmanyam

The following activity diagram shows the flow of interaction during customer support scenarios. Initially the customer enters the subject and details of the support then he fills in the support type. Based on the support type the decision node will take one of the either paths as mentioned below. If the support type is compliant then it will be forwarded to the site administrator and he checks the details and provides a suitable resolution and marks the complaint status as resolved. The customer will be notified about resolution. Else if the support type is enquiry the customer enters the service ID which he wants details for and the enquiry will be forwarded to the service person who offers that service. The service person can send a reply to the customer with requested details and the customer will be notified for the same.



Customer Support
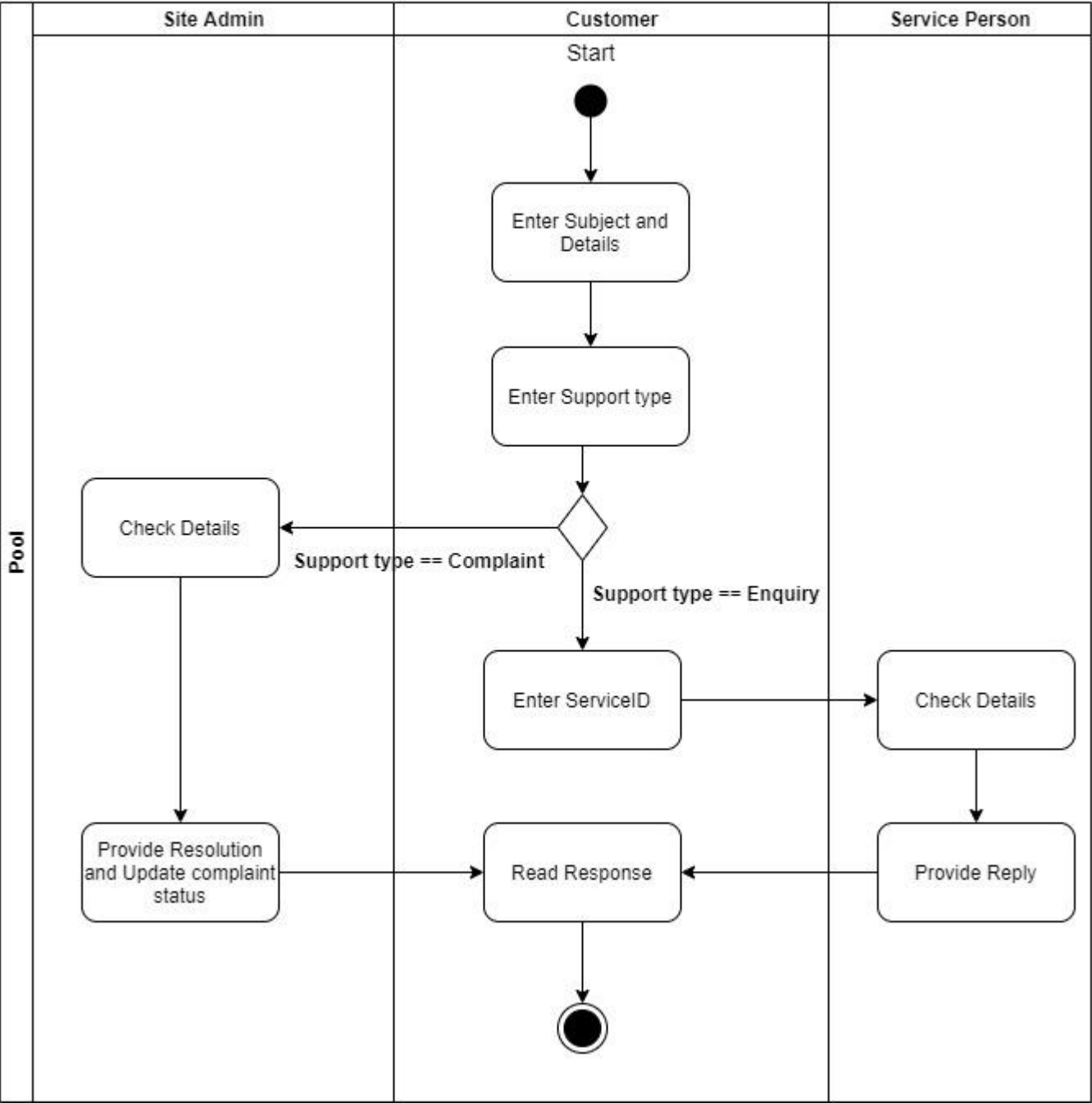
## 1.5.5 Rate Service and Assign Badges - Puchakayala Dheeraj Reddy

The process of rating a service is initiated by the customer. The customer visits the service page and rates a particular service. Then this request is forwarded to the site admin for validation. The site admin then sends a query to the service person requesting if the particular customer has taken the service from him/her. If the service has been taken, then the site admin updates the ratings of the service. Later, it is checked if the rating of the service is greater than a particular threshold and the number of ratings are also above a certain threshold. If both the conditions are met, the service person is assigned an assurity badge.
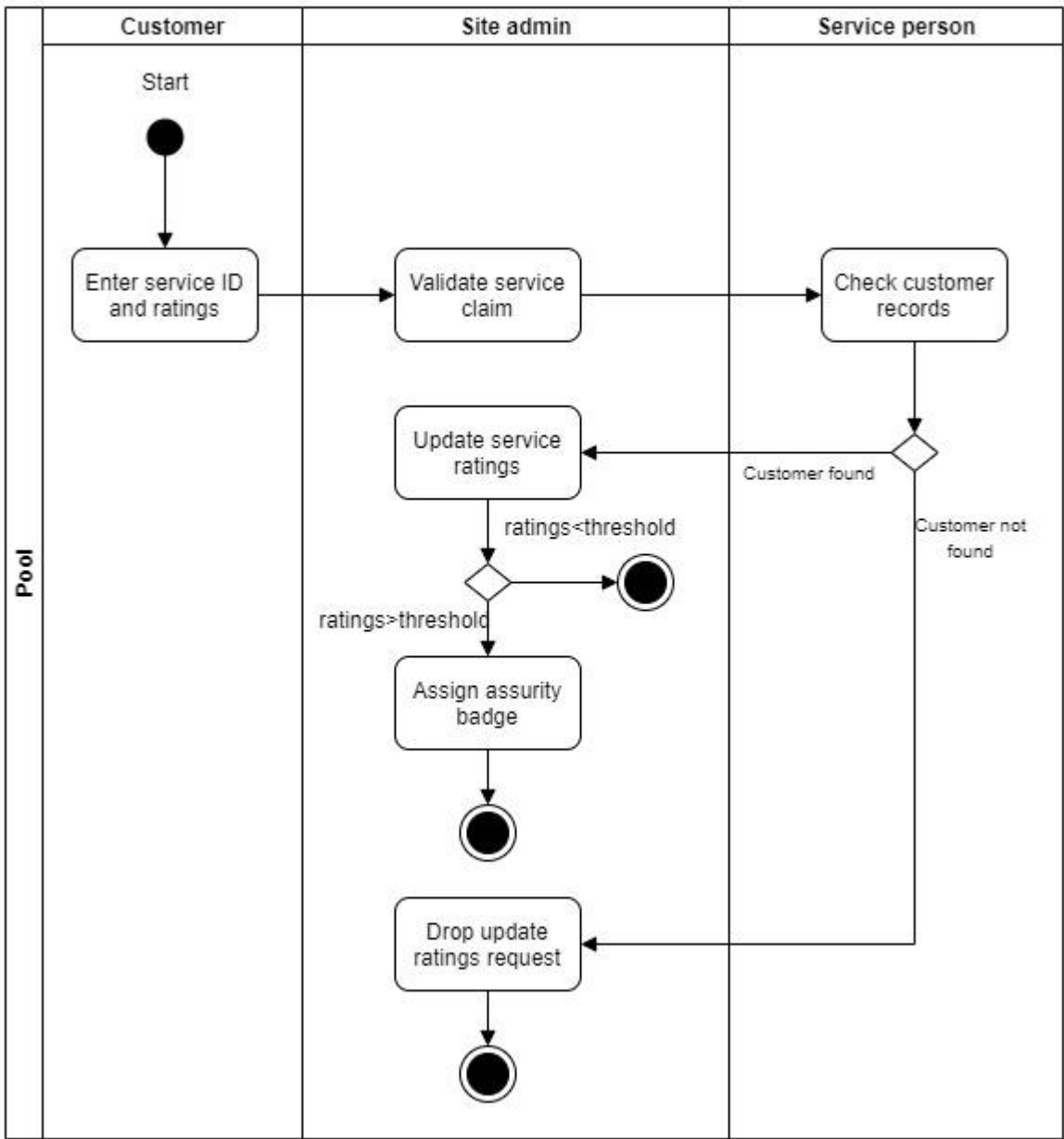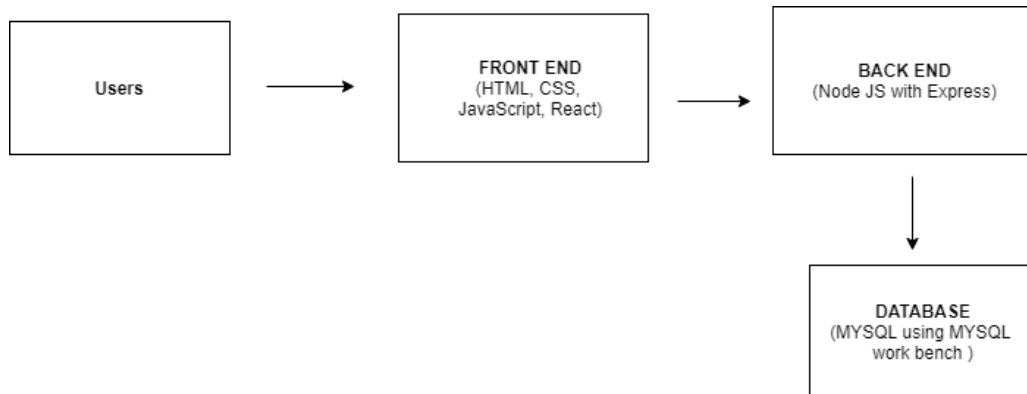
# 2.    Database Design

## 2.1 ER Diagram
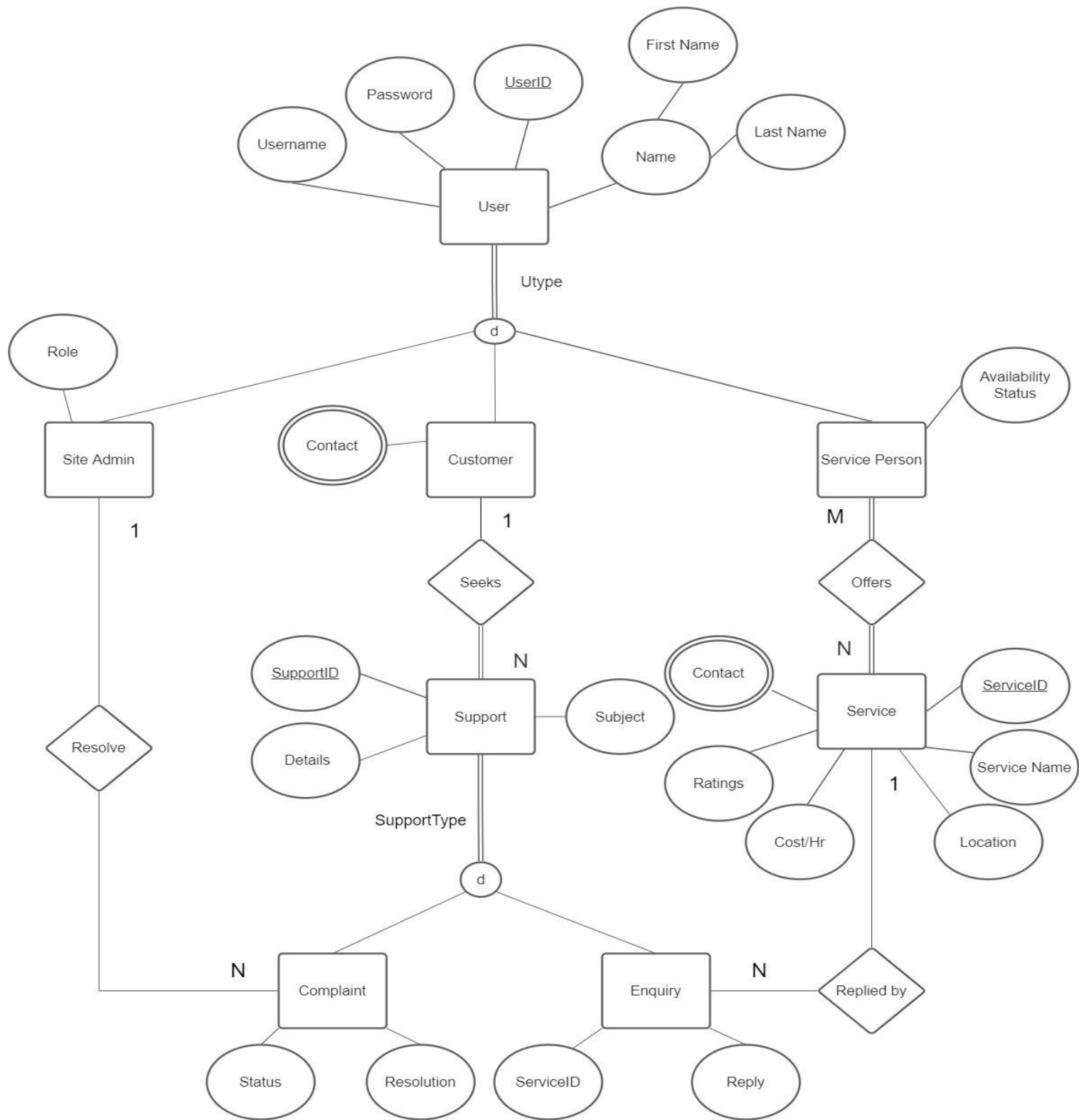
# 3.    Implementation Plans

## 3.1 Technology Stack

- **Frontend:** HTML5,CSS,Javascript and React JS
- **Backend:** Node js with Express
- **Database:** MYSQL Database managed using MYSQL Workbench
- **Hosting:** Hosted using Heroku



## 3.2 Work Estimates

| Description | Time Estimate (Hours) |
|---|:---:|
| Front End development | 6 |
| Back End development | 12 |
| Creating DB and connecting it | 4 |
| Testing & Debugging | 14 |
| Deploying / Hosting | 3 |

# References

1. Pressman, R. S. (2008). *Software engineering: A practitioner's approach*. New York: McGraw-Hill.
2. Lethbridge, T.C. and Laganière R. (2004) Object-Oriented Software Engineering: Practical Software Development Using UML and Java. McGraw-Hill.
3. Elmasri, R., & Navathe, S. (2011). *Fundamentals of database systems*. Boston: Addison-Wesley.

*April 8th, 2021*

# Appendix A - Activity Log

## Meeting Log

| *Meeting* | *Date - Time* | *Duration* | *Agenda* |
|---|---|---|---|
| *Meeting - 1* | *04-04-2021 - 3:00 PM* | *240 - minutes* | *Class Diagram, Use Case Diagram, Object Diagram* |
| *Meeting - 2* | *05-04-2021 - 2:00 PM* | *120 - minutes* | *ER Diagram, Activity Diagram* |
| *Meeting - 3* | *07-04-2021 - 5:30 PM* | *120 - minutes* | *Sequence Diagram, Section-3* |

## Contributions

| Group member | Contributions |
|---|---|
| Singam Sai Bala Subrahmanyam B180522CS | Sequence Diagram - 4, Activity Diagram - 4 Ideas for all other sections |
| Goutham P B180330CS | Sequence Diagram - 3, Activity Diagram - 3 Ideas for all other sections |
| Yacha Venkata Rakesh B180427CS | Sequence Diagram - 2, Activity Diagram - 2 Ideas for all other sections |
| Rahul Kumawat B180635CS | Sequence Diagram - 1, Activity Diagram - 1 Ideas for all other sections |
| Puchakayala Dheeraj Reddy B180902CS | Sequence Diagram - 5, Activity Diagram - 5 Ideas for all other sections |