



National School of Engineers of Tunis
Department of Information and Communication Technologies



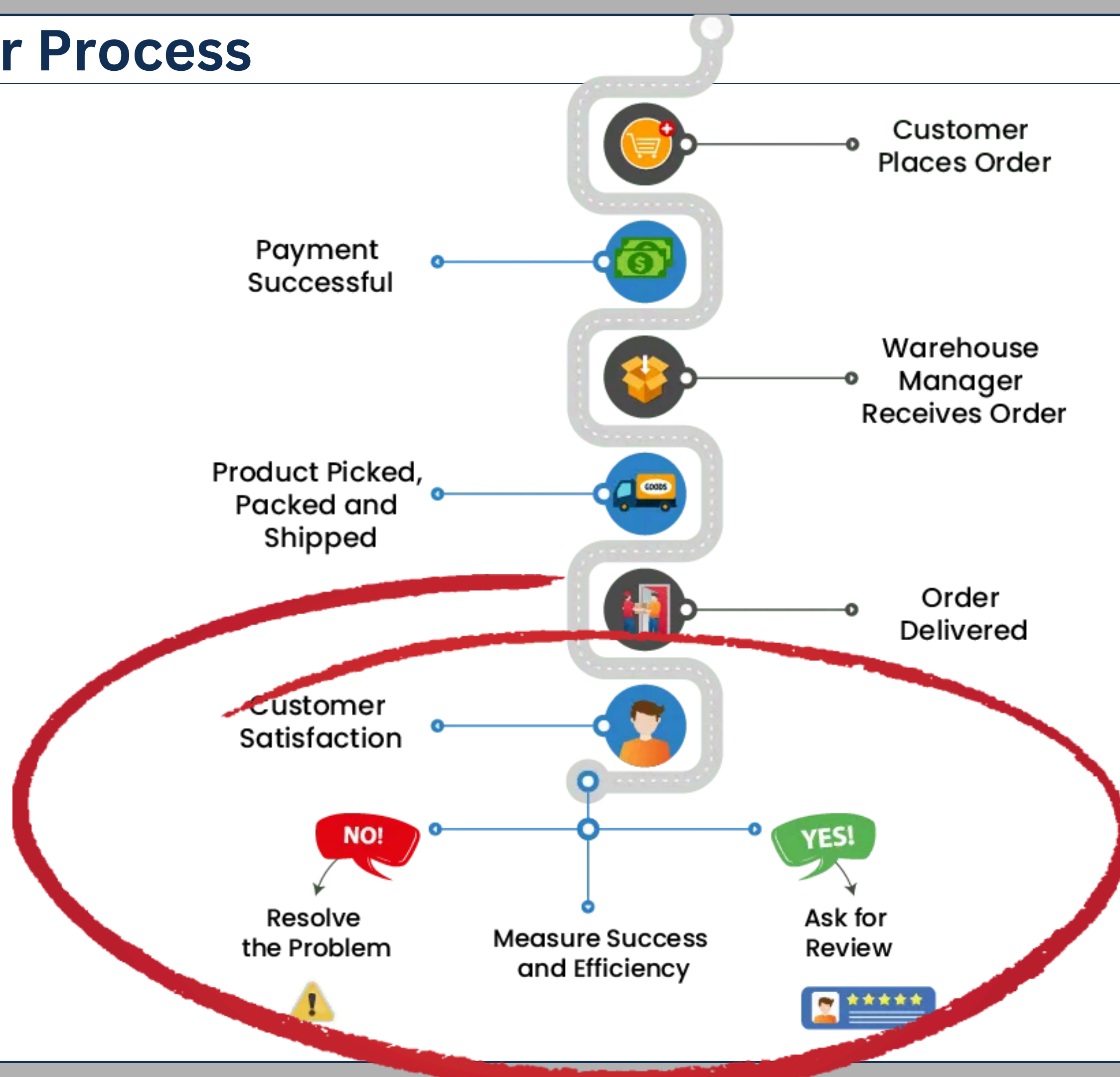
End of year project II

DEVELOPMENT OF CUSTOMER SERVICE AND SUPPORT SYSTEM

By :
Amrou Majdoub
Iheb Ben Soltane

Supervised By:
Mrs Sonia Alouane

2nd YEAR OF COMPUTER SCIENCE
ACADEMIC YEAR : 2023/2024



Overview

01

Existent Study

We will go through the stage of studying the existing solutions.

02

Methodology

03

Modeling

04

Conception

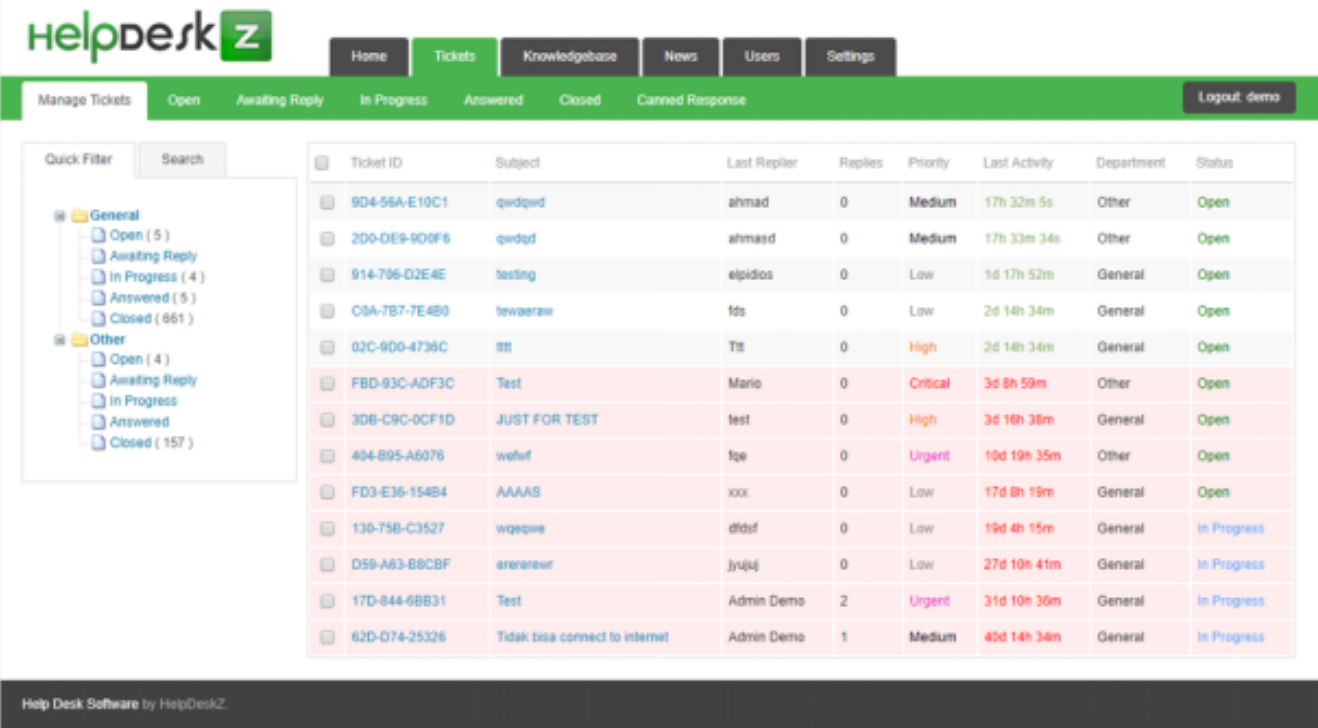
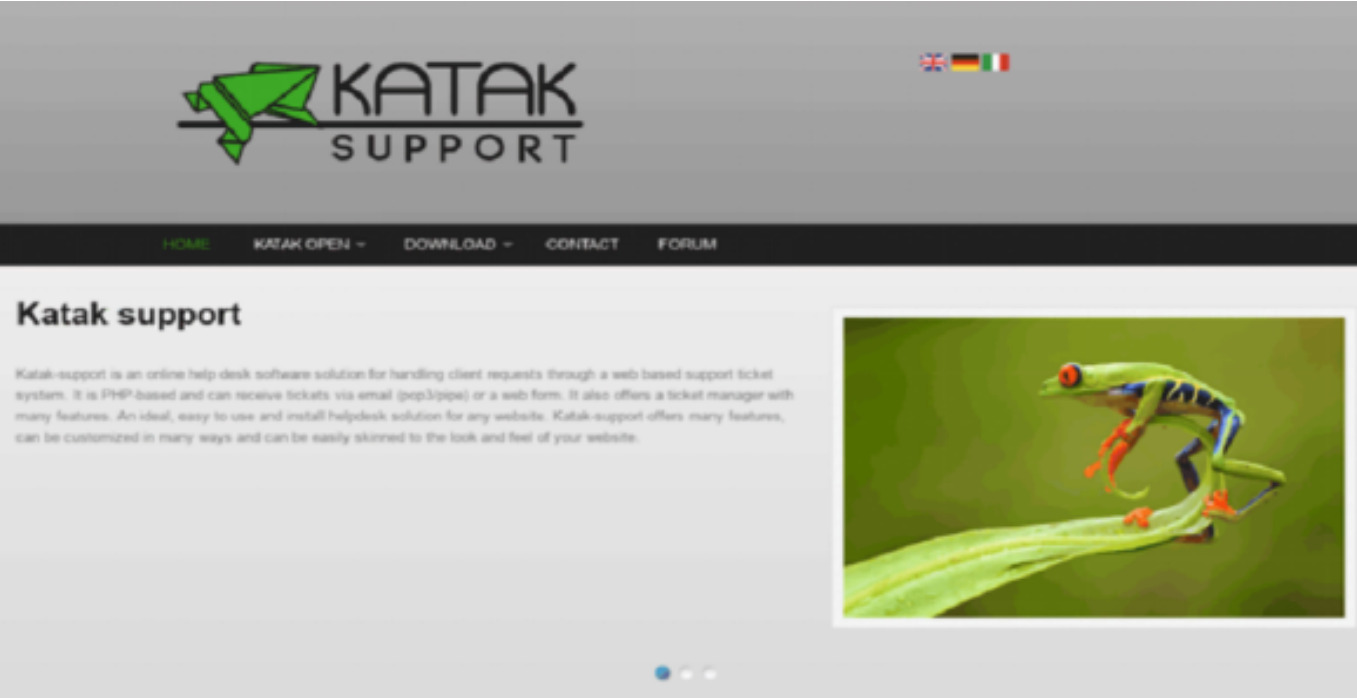
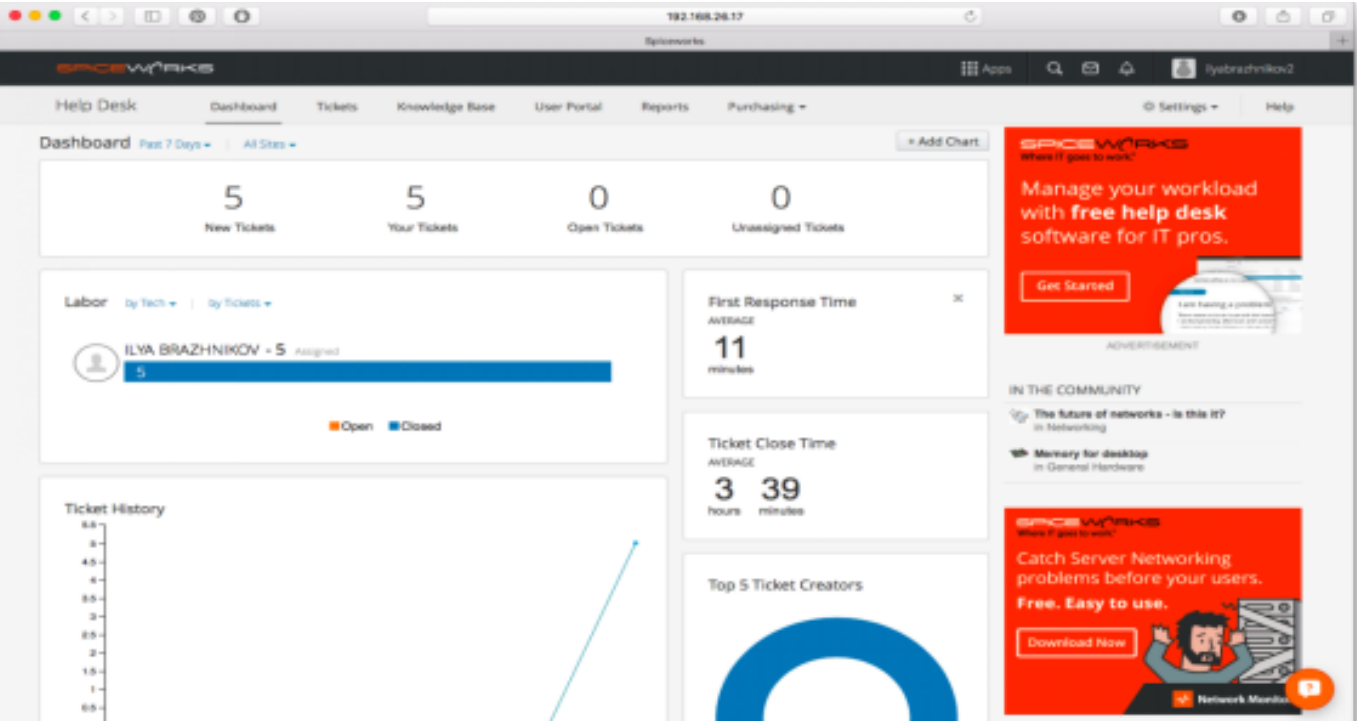
05

Realization



01

Preliminary Study



Features	Librum	HelpDeskZ	KataSupport	SpiceWorks
Ticket Management	+	+	+	+
Knowledge Base	+	+	-	+
Dashboard	-	-	-	+
Escalation	+	+	+	+
Role Management	-	-	-	-
Point-to-Point Contact	+	+	+	+
Client Tracking	-	-	-	-



Front Office

The client space where the client can:

- Consult ticketing history.
- Send requests to the support agent.
- Access the Knowledge base by asking a chatbot.



Back Office

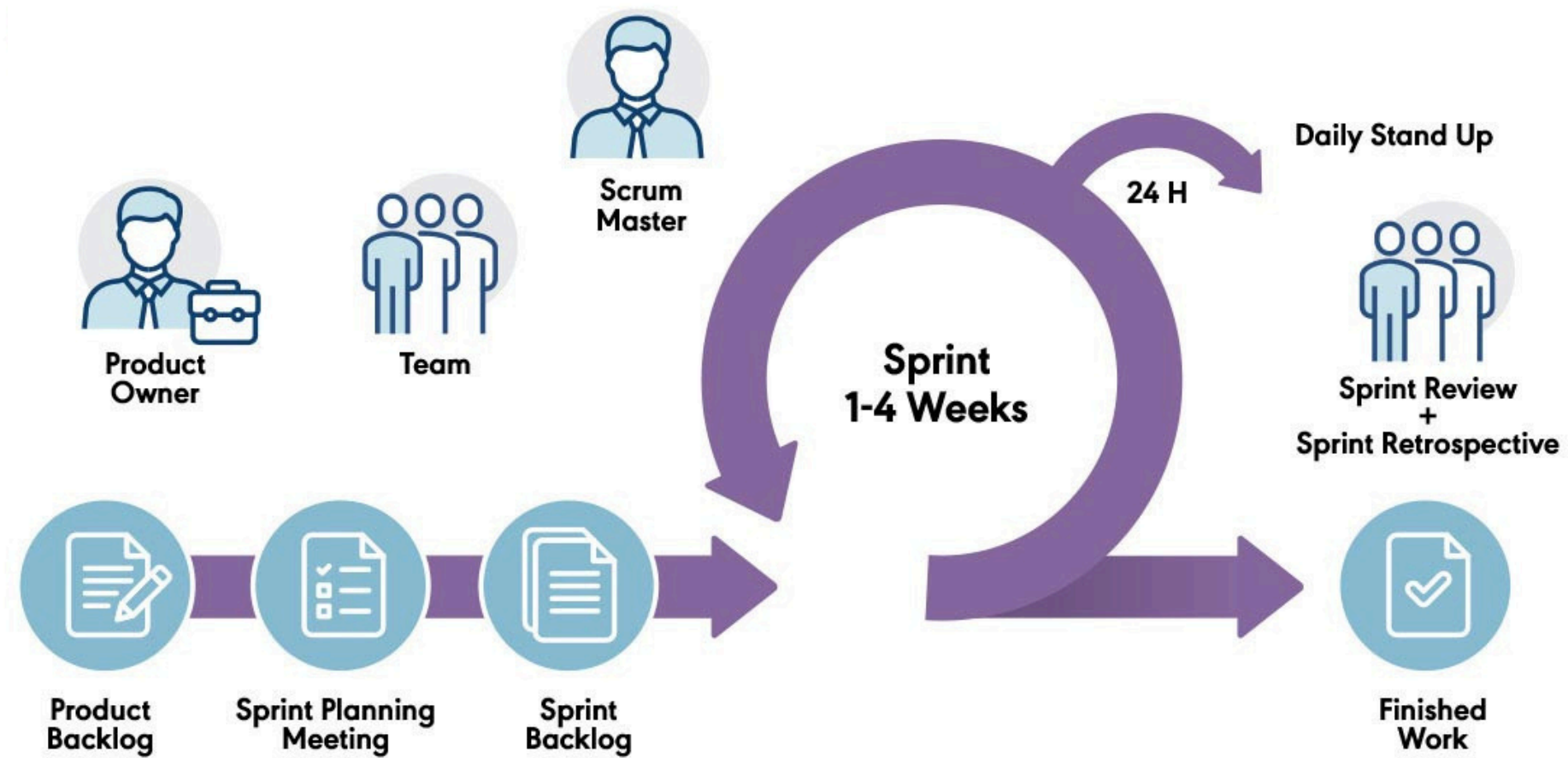
Dedicated to support agents to:

- Manage roles and permissions.
- Provide valid management for client's tickets and requests.
- Manage tickets items.



02

Methodology



- Iterative and Incremental Development
- Flexibility and Adaptability
- Continuous Improvement



03

Modeling

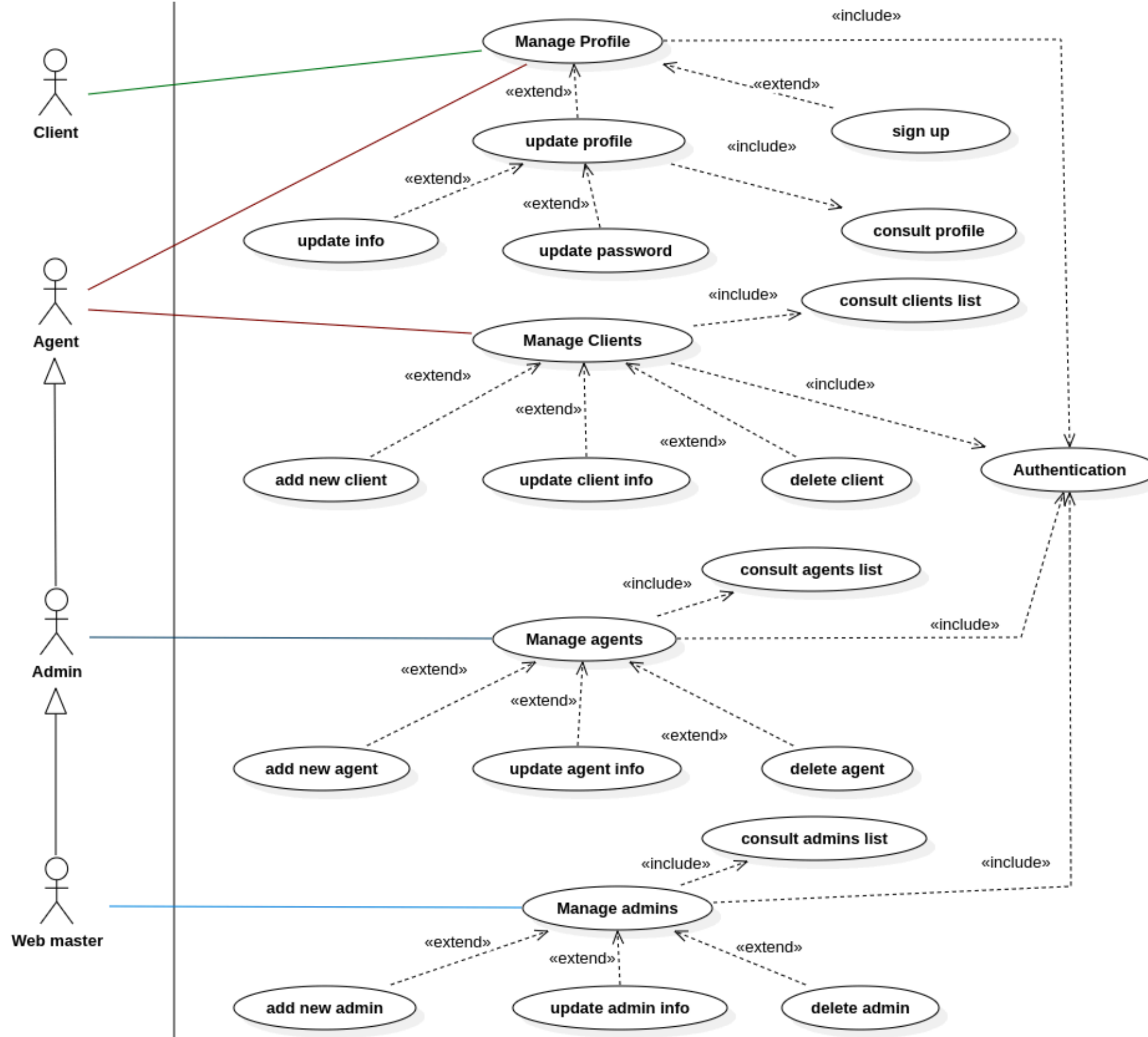
Identifying Functional Needs

- Client Authentication and Sign Up
- Edit Account
- Role Management
- Tickets and items Manipulation
- Real-Time Chat
- Asking chatbot
- Agents dashboard consulting

Identifying Non-Functional Needs

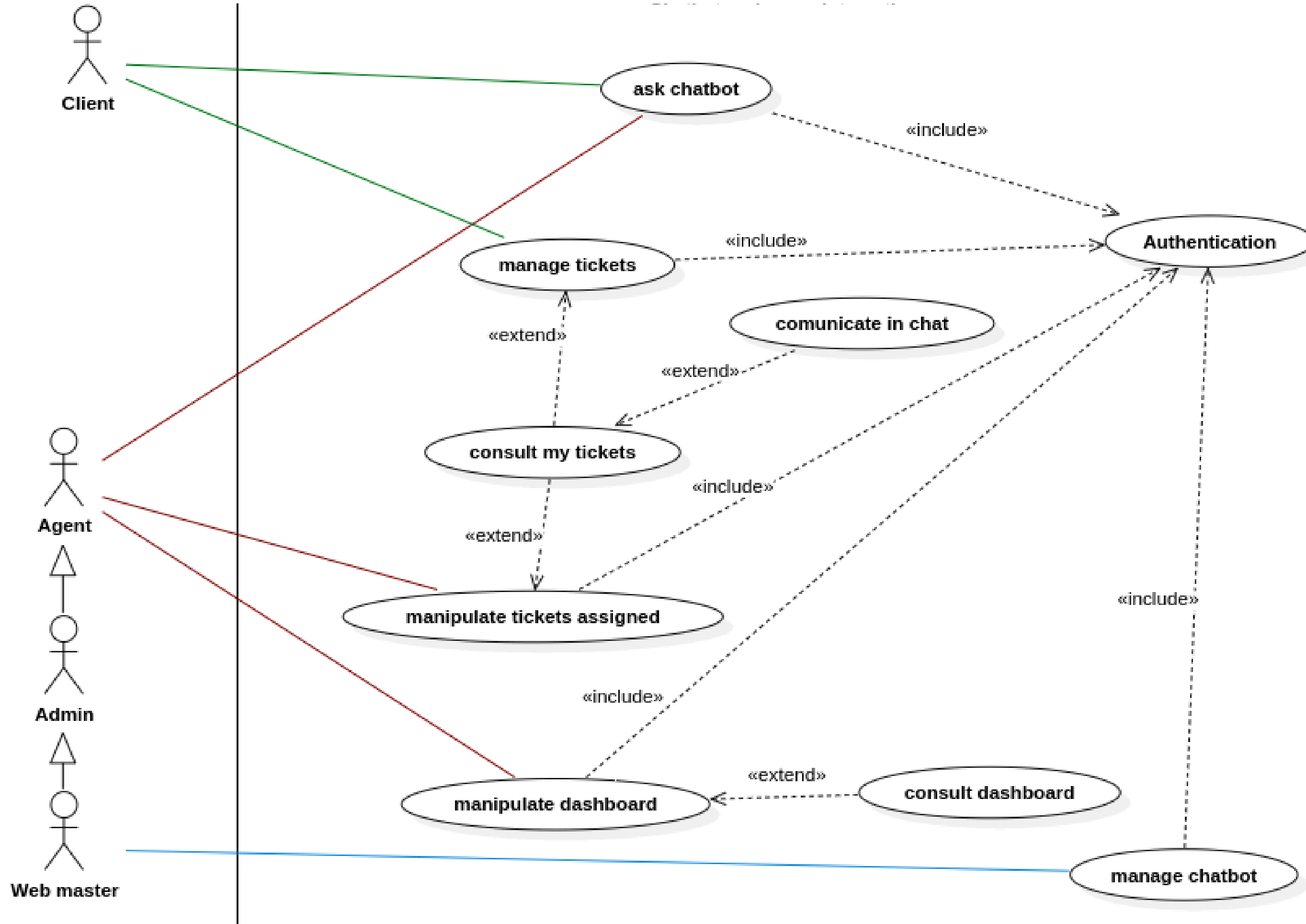
- Extensibility 
- Security 
- Interface 
- User-Friendliness 

Users Management





Chatbot and Users Interaction





Product Backlog

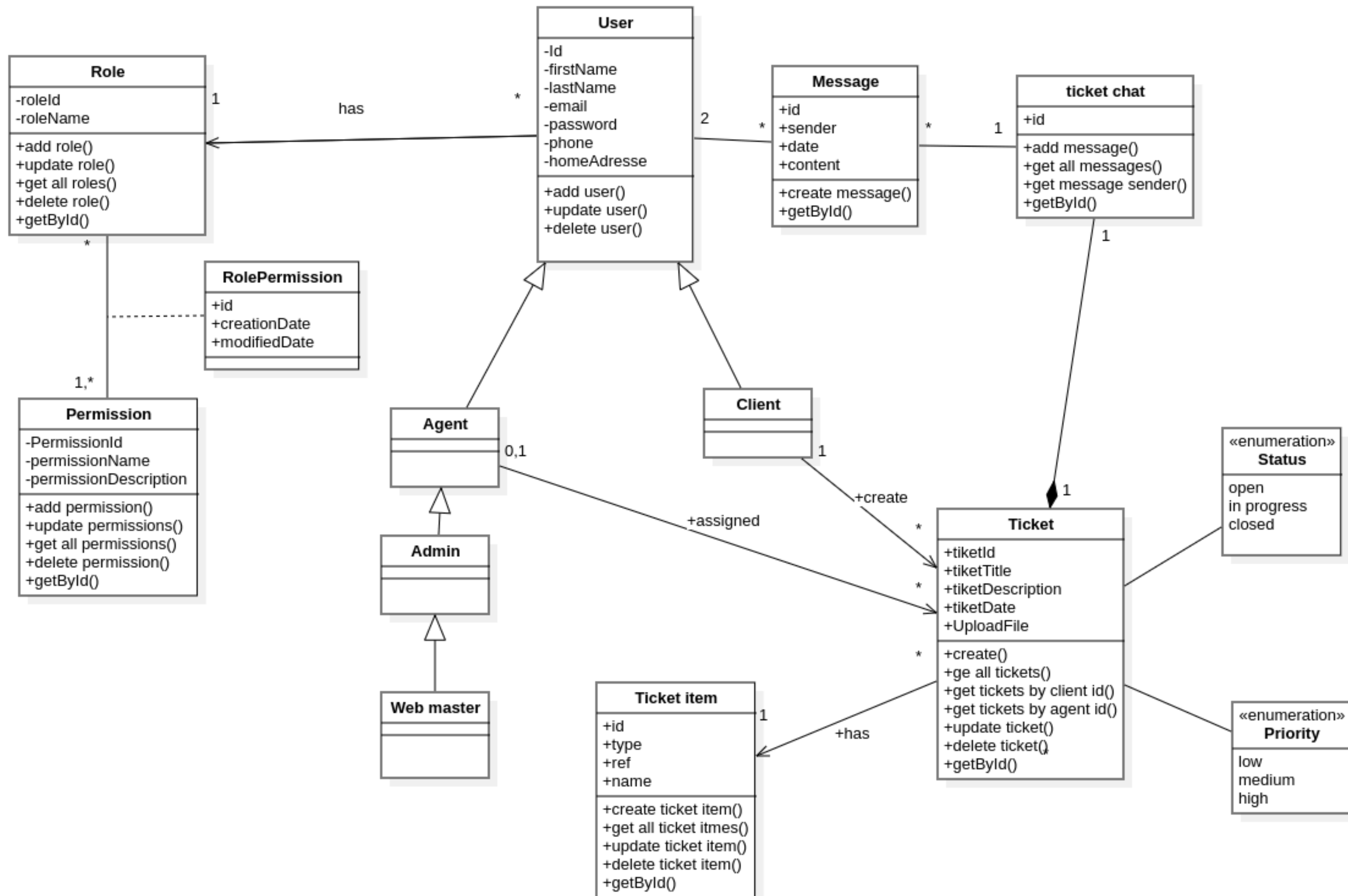


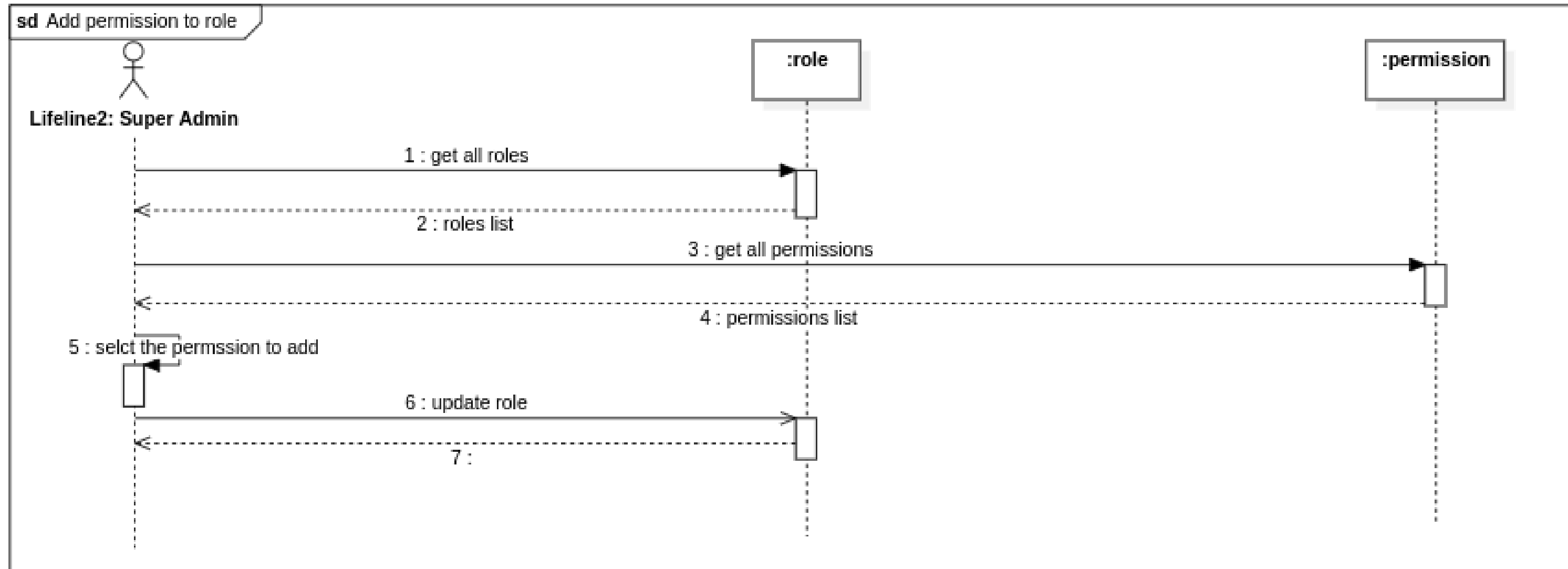
<input type="checkbox"/>	▼ System Management Add dates (11 issues)	0	0	0	Start sprint	...
	CSSS-8 As a client, I can create a ticket item.	TO DO ▼	-			
	CSSS-9 As an agent, I can consult ticket items list.	TO DO ▼	-			
	CSSS-10 As an agent, I can add new ticket item.	TO DO ▼	-			
	CSSS-11 As an agent, I can update ticket item info.	TO DO ▼	-			
	CSSS-12 As an agent, I can delete a ticket item.	TO DO ▼	-			
	CSSS-13 As a client, I can create a ticket by filling a form.	TO DO ▼	-			
	CSSS-14 As a client, I can consult my tickets history.	TO DO ▼	-			
	CSSS-15 As an agent, I can consult tickets assigned to me.	TO DO ▼	-			
	CSSS-16 As an agent, I can reply to a ticket.	TO DO ▼	-			
	CSSS-17 As an admin, I can update ticket info.	TO DO ▼	-			
	CSSS-18 As an admin, I can delete a ticket.	TO DO ▼	-			

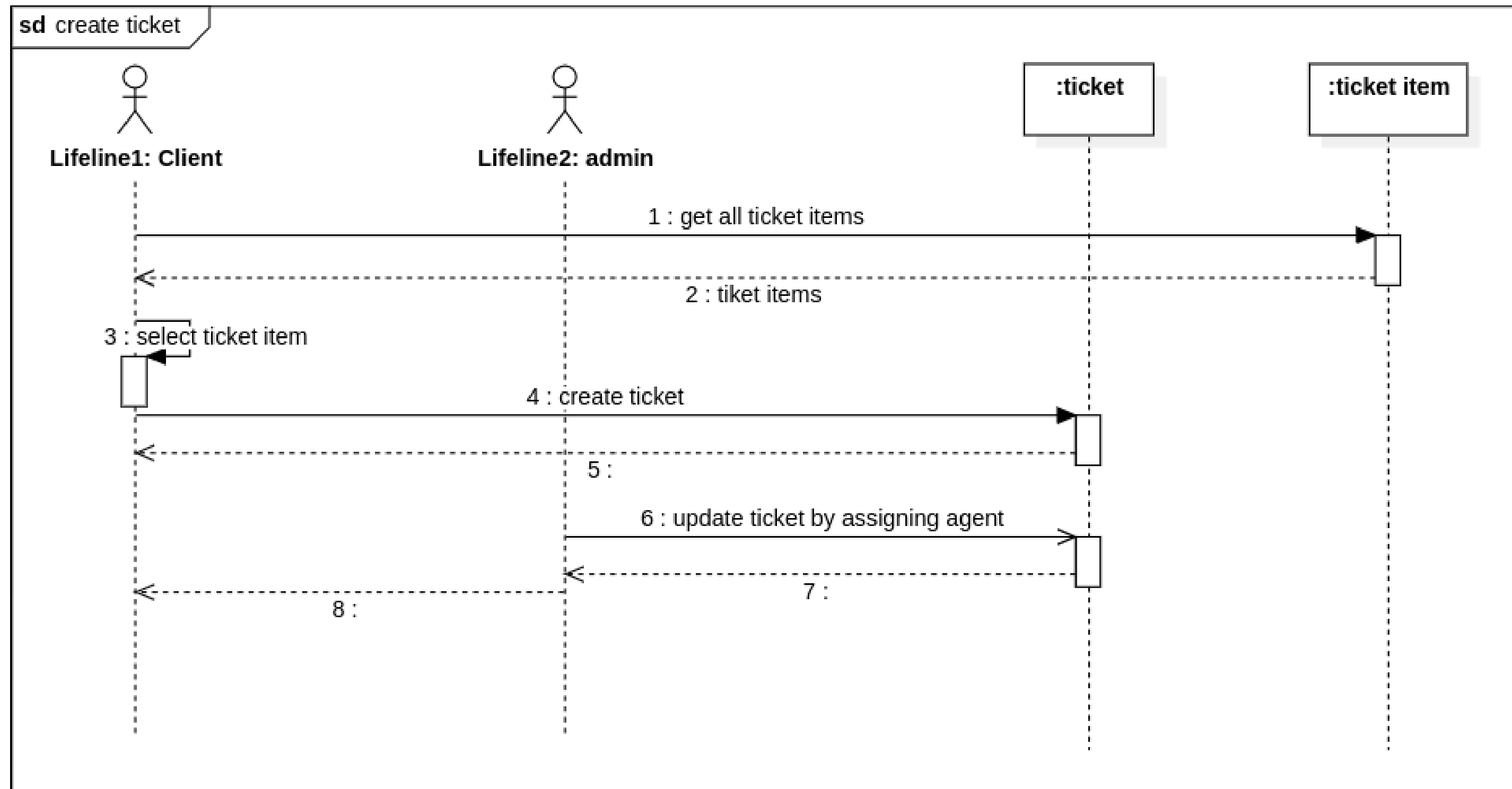


04

Conception

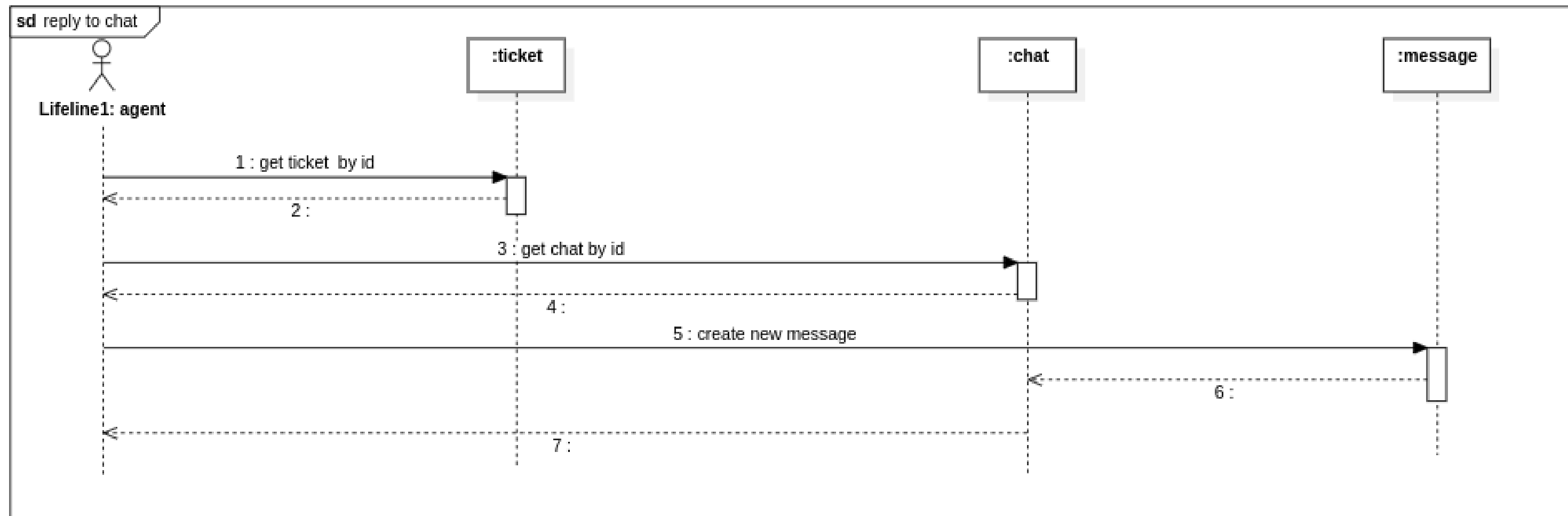






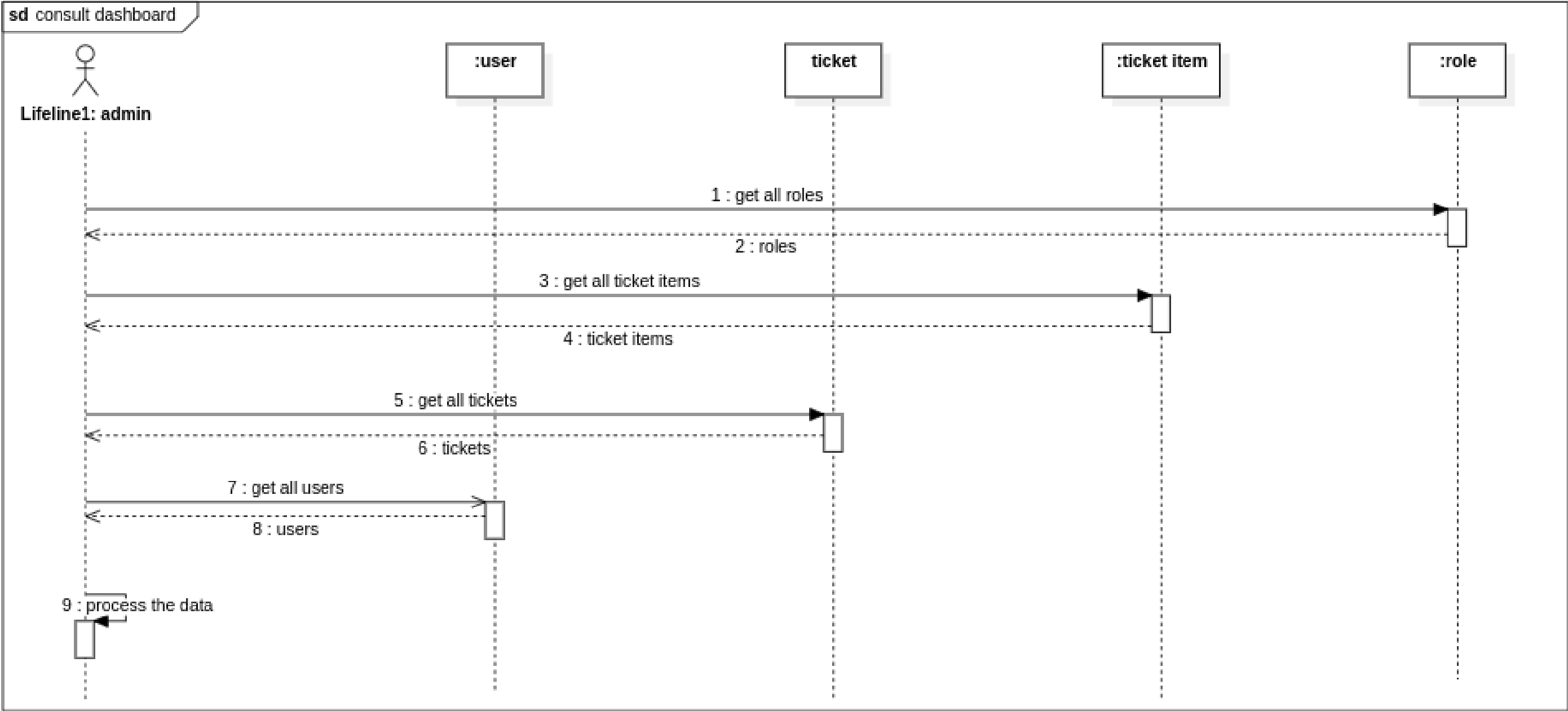


Sequence diagram





Sequence diagram

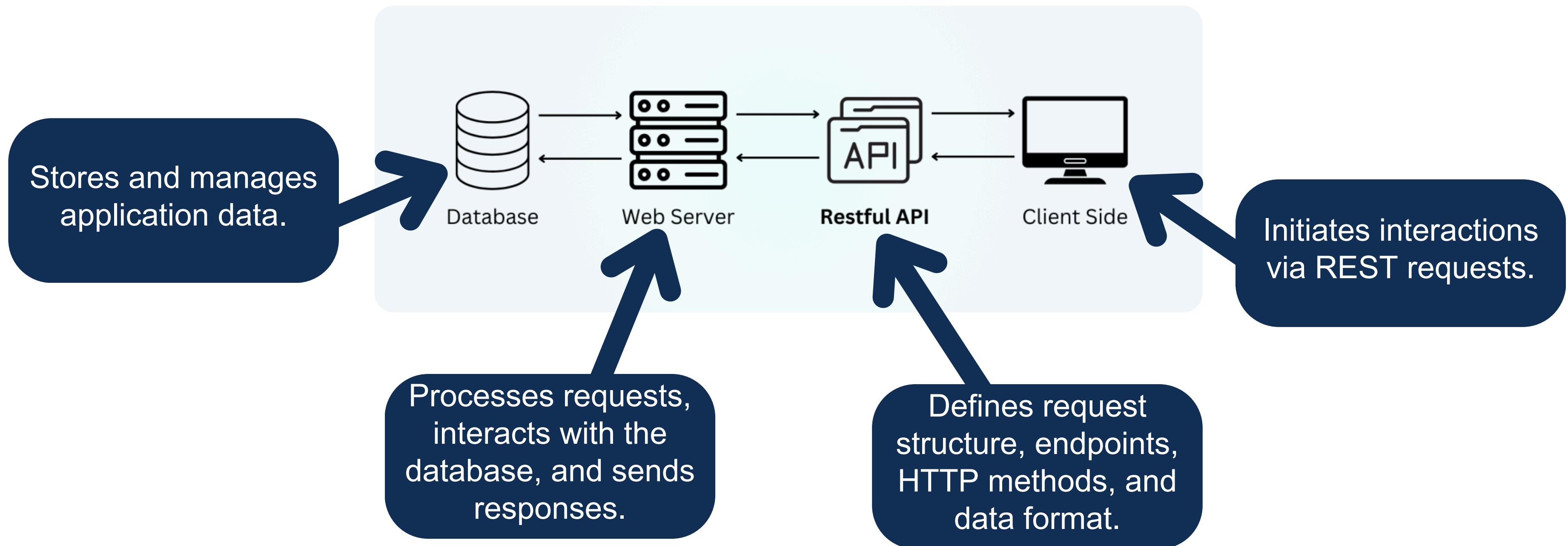




04

Realization

The RESTful API pattern focuses on using HTTP methods for resource manipulation, making it ideal for web services. It consists of:



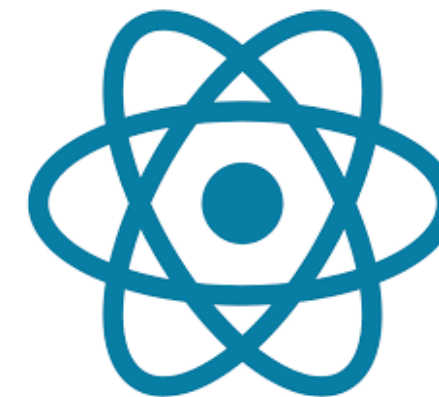
Development environment



Development technologies



Express



Development technologies



Llama 2

MODEL SIZE (PARAMETERS)	PRETRAINED	FINE-TUNED FOR CHAT USE CASES
7B	Model architecture: Pretraining Tokens: 2 Trillion Context Length: 4096	Data collection for helpfulness and safety: Supervised fine-tuning: Over 100,000 Human Preferences: Over 1,000,000
13B		
70B		



Development technologies

```
iheb@random: ~  
iheb@random:~$ ollama list  
NAME          ID          SIZE    MODIFIED  
llama2:latest  78e26419b446 3.8 GB  2 weeks ago  
iheb@random:~$ ollama run llama2  
>>> hello  
Hello! It's nice to meet you. Is there something I can help you with or would you like to chat?  
  
>>> my pc charger is not charging properly my pc  
I see. Sorry to hear that your PC charger is not working properly. Can you please provide more details about the issue you're experiencing? For example, does the charger light not turn on when you plug it in, or is the battery not charging at all? Additionally, have you tried using a different charger or power source to see if the issue persists? Any information you can provide will help me better understand the problem and potentially offer a solution.  
  
>>> /bye
```

Interfaces

Customer Support

Sign Up

Create an account and start your journey with us.

First Name

Enter first name

Last Name

Enter last name

Email

Enter email

Home Address

Enter home address

Password

Sign Up

Already have an account [Log in here](#)



Customer Support

Home

Dashboard

Inbox3

Tickets

all tickets

new ticket

Ticket Items

Clients

Agents

Admins

WebMasters

Roles

Permissions

search...

Create

ID	NAME	EMAIL	ADDRESS	CREATED AT		
13	sss ss	ss	ss	2024-04-28T03:44:58.000Z	Edit	Delete
16	qq qq	fdffffff	fffff	2024-04-28T23:00:44.000Z	Edit	Delete

Showing 1 to 4 of 50 Entries

PrevNext

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all tickets

new ticket

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Permissions

search...

Create

ID	NAME	DESCRIPTION		
1	read	Permission to see all users	Edit	Delete
3	add user	user can add users himself	Edit	Delete
4	modify	modify content in the app	Edit	Delete
5	users-getAll	can see all users	Edit	Delete
6	users-getById	can see details of user	Edit	Delete
7	users-update	can update users	Edit	Delete
8	users-delete	can delete user	Edit	Delete
9	roles-getAll	can see all roles	Edit	Delete

Customer Support

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new ticket

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WebMasters

Roles

Permissions

search...

Edit Role

Role Name

WebMaster

Permissions

☒ read - Permission to see all users

☒ add user - user can add users himself

☒ modify - modify content in the app

☒ users-getAll - can see all users

☒ users-getById - can see details of user

☒ users-update - can update users

☒ users-delete - can delete user

☒ roles-getAll - can see all roles

☒ ticketItem-getAll - can see all ticketItems

☒ permissions-getAll - can see all Permissions

☒ tickets-getAll - can see all tickets

CancelSave

Interfaces

Customer Support

Home

Dashboard

Inbox3

Tickets

all tickets

new ticket

Ticket Items

Clients

Agents

Admins

WebMasters

Roles

Permissions

search...

iheb bs

search...

TITLE	DESCRIPTION	STATUS	PRIORITY	AGENT ID	DATE	UPLOAD FILE	TICKET ITEM ID	USER ID	
dsgd	dsqfkh	open	medium	1	2024-04-15	1713147025847-diag.pdf	1	8	<div>Chat</div> <div>Edit</div> <div>Delete</div>
ss	sss	open	medium	1	2024-04-16	1713261239753-challs_key.pem	1	8	<div>Chat</div> <div>Edit</div> <div>Delete</div>
ff	ff	open	medium	Not affected yet!	2024-05-01	1714594833613-Screenshot from 2024-05-01 20-30-27.png	1	8	<div>Chat</div> <div>Edit</div> <div>Delete</div>

Customer Support

Home

Dashboard

Inbox3

Tickets

all tickets

new ticket

Ticket Items

Clients

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Admins

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Roles

Permissions

search...

iheb bs

Create Ticket

Title

Description

Ticket Item

Create New Ticket Item

Priority

Select Priority

Upload File

Choose File

No file chosen

Cancel

Create Ticket

Customer Support

Home

Dashboard

Inbox3

Tickets

all tickets

new ticket

Ticket Items

Clients

Agents

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Roles

Permissions

search...

iheb bs

Edit Ticket Item

Type:

Name:

Ref:

Cancel

Update

Customer Support

Home

Dashboard

Inbox3

Tickets

all tickets

new ticket

Ticket Items

Clients

Agents

Admins

WebMasters

Roles

Permissions

search...

iheb bs

Delete Ticket Item

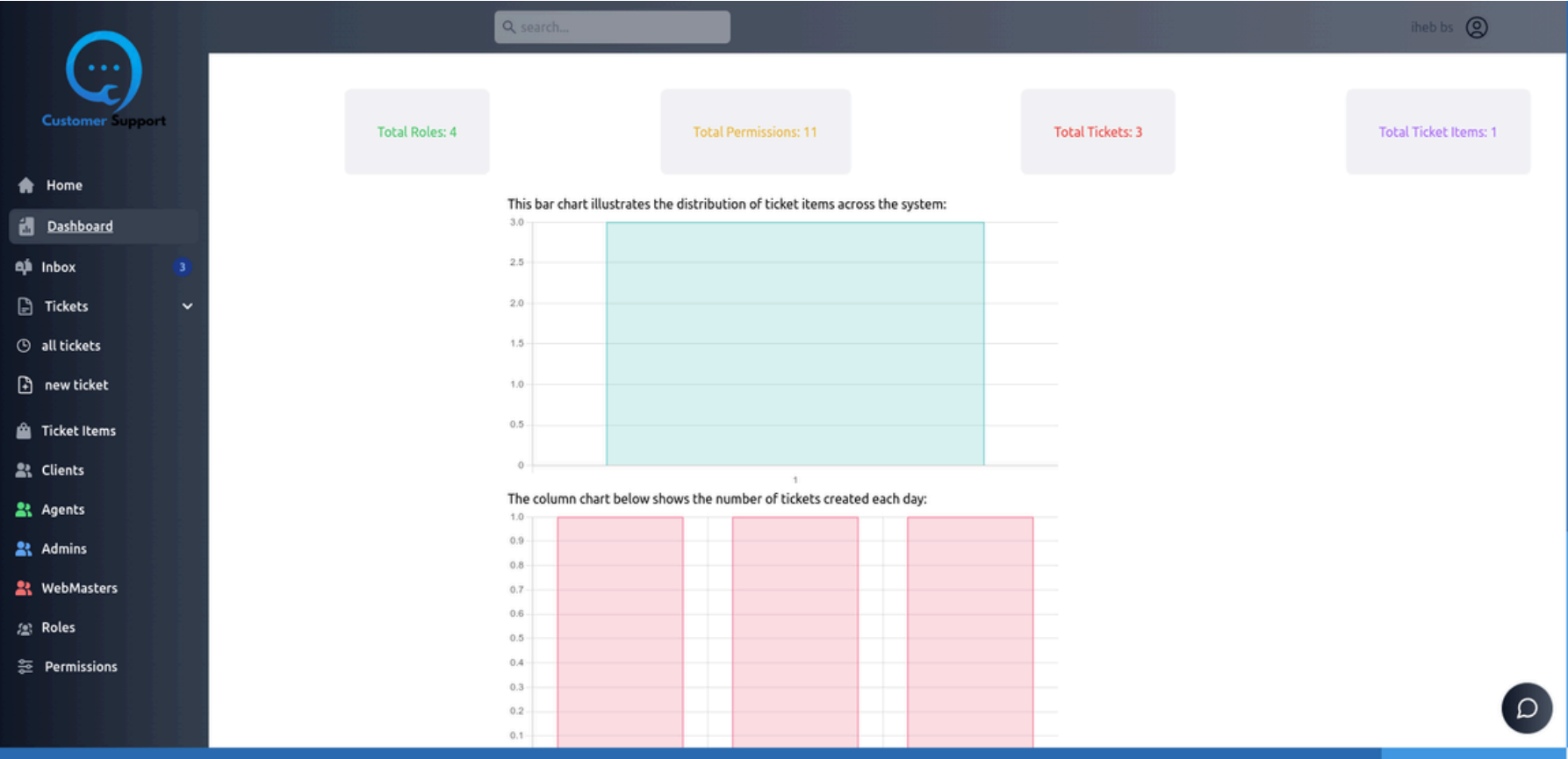
Are you sure you want to proceed?

This action cannot be undone.

Cancel

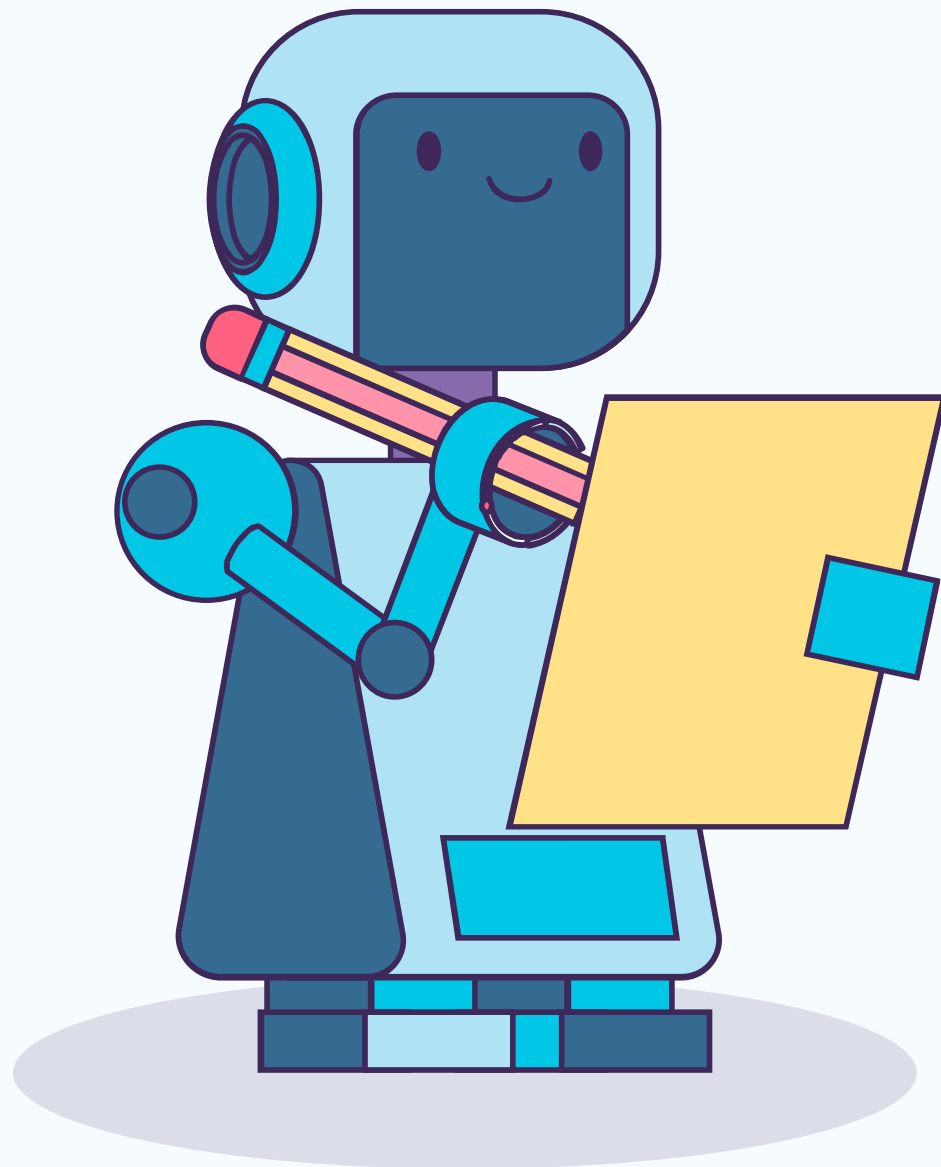
Confirm

Interfaces





Conclusion



Thanks!