



MULTI-PURPOSE CUSTOMER SERVICE CHAT

EE 547 – FINAL PROJECT REFERENCE DECK

WENHAO CHI
HAOYU XIE

Spring 2023

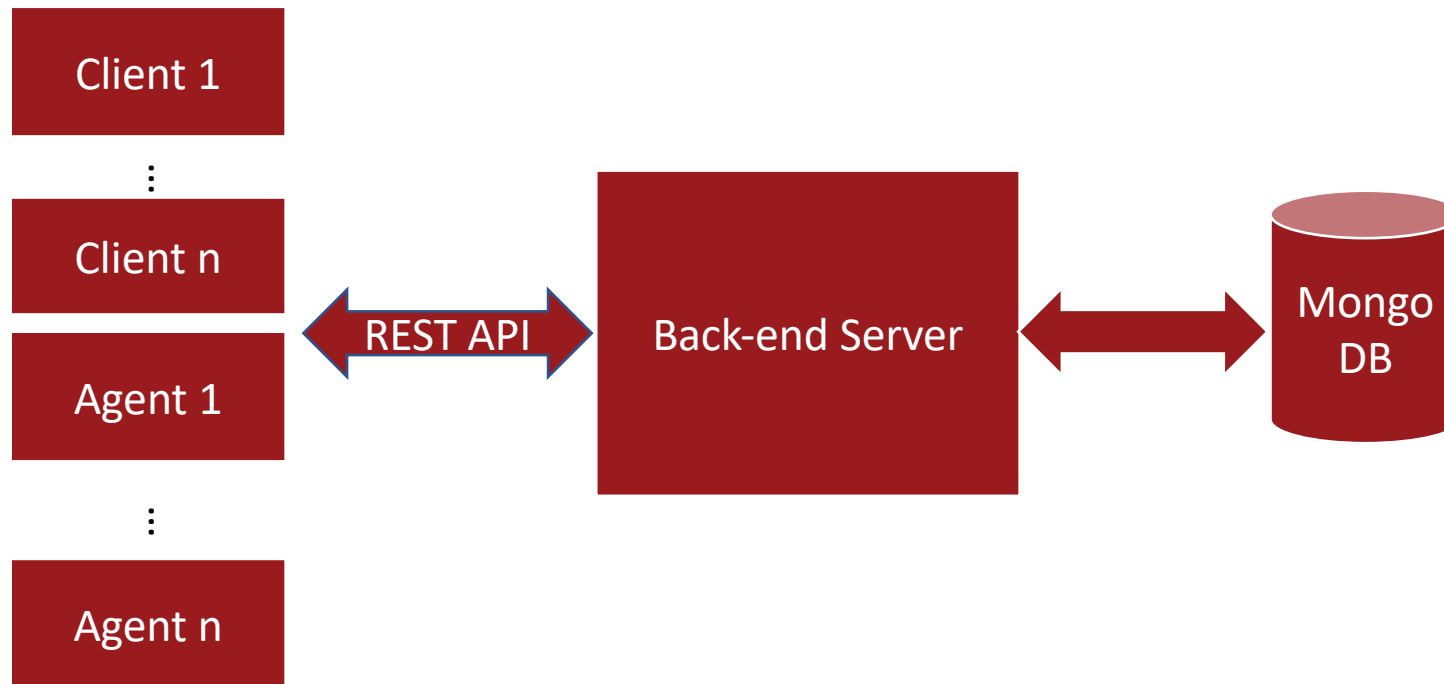


PROJECT SUMMARY

- Usage scenario:
 - Users need to chat with agents
 - Users are inconvenient or unable to type
 - Agents need to keep text records
 - Information encryption
- Our project can do:
 - Input both text and speech
 - Convert speech to text
 - Convert Text to speech
 - Save all the messages in text format
 - encryption using Token



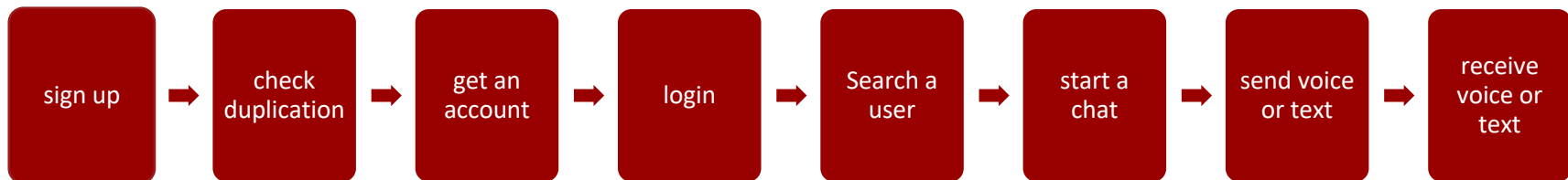
ARCHITECTURE SUMMARY





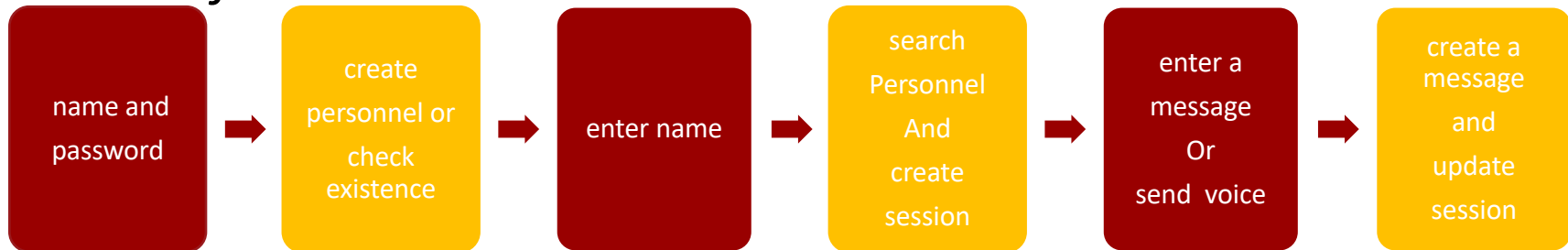
ARCHITECTURE SUMMARY

Logic flow:

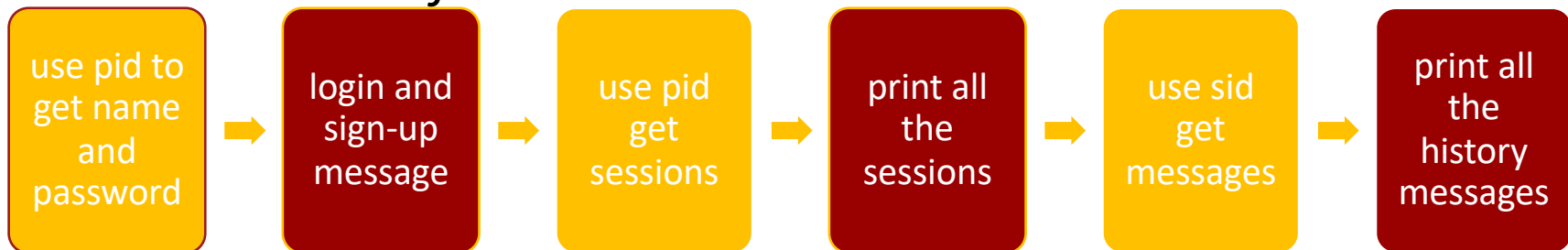


Data flow:

From front end to server:



From server to front end:





TIMELINE – RETROSPECTIVE

4/29	create the database and design the database operation
4/30	add most server endpoint
5/1	Create Front end pages
5/2	Test the functionalities combining the server and front end
5/3	Create the css file and adjust the front end
5/4	Test all the functionalities and debug, finish the slides



REFERENCES

- [Web Speech API](#)
- [CHAT CSS TAMPLATE](#)



FRONTEND

FRONTEND OVERVIEW

- › Front end Pages: Sign up, Sign in, send voice & text message, sending outcome, chat
- › Technologies:
 - » Voice-to-text
 - » Token encryption
 - » Text-to-voice
 - » Show the message history
 - » Search box

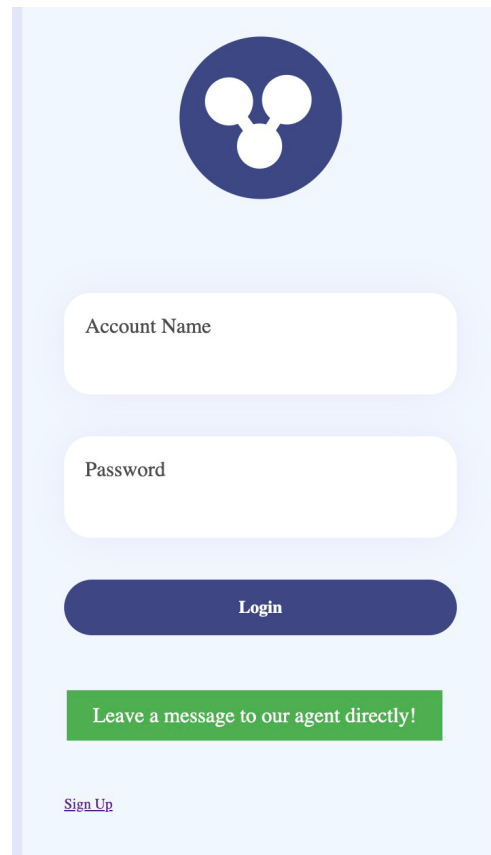


USER ROLES

- Customer: can also contact with agent without sign up/log in.
- Agent: need to sign up and login to chat with customers and agents.



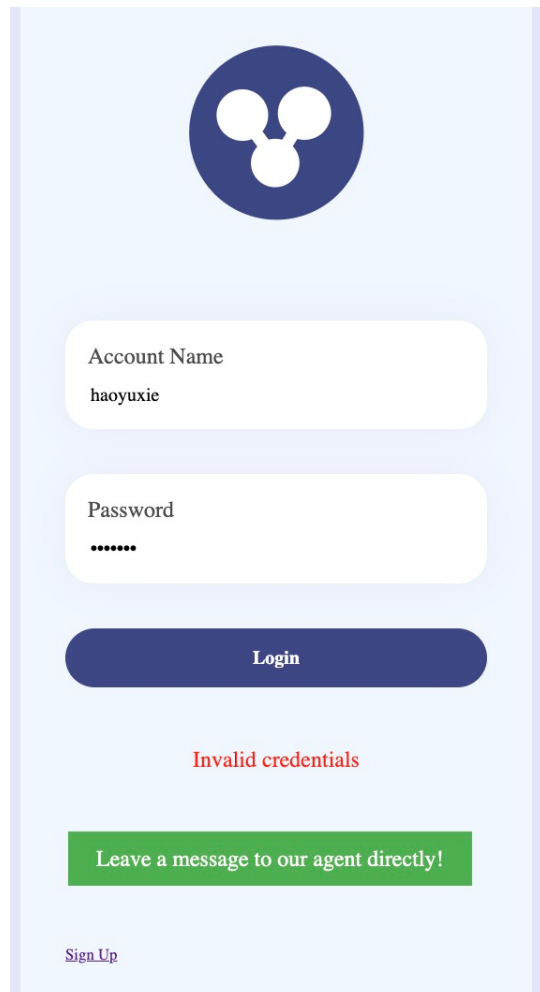
PAGE: LOGIN

A mockup of a login form on a light blue background. At the top is a dark blue circular icon with three white circles inside. Below it are two white input fields with rounded corners, labeled 'Account Name' and 'Password'. Under the password field is a dark blue rounded button labeled 'Login'. Below that is a green rounded button labeled 'Leave a message to our agent directly!'. At the bottom left is a small blue link labeled 'Sign Up'.

- Enter the Account Name and password to login
- Or send a Voice message without login
- Sign up if you want to create an account



PAGE: LOGIN



A login form mockup with a light blue background. At the top is a dark blue circular icon with three white circles inside. Below it are two white input fields with rounded corners. The first field is labeled 'Account Name' and contains the text 'haoyuxie'. The second field is labeled 'Password' and contains seven dots. Below the password field is a dark blue rounded rectangular button with the text 'Login' in white. Underneath the button is the text 'Invalid credentials' in red. At the bottom of the form is a green rounded rectangular button with the text 'Leave a message to our agent directly!' in white. In the bottom left corner of the form area is a small, underlined link that says 'Sign Up'.

- login fails if password is invalid



PAGE: SIGN UP



Username

Password

Role

Agent

Sign up

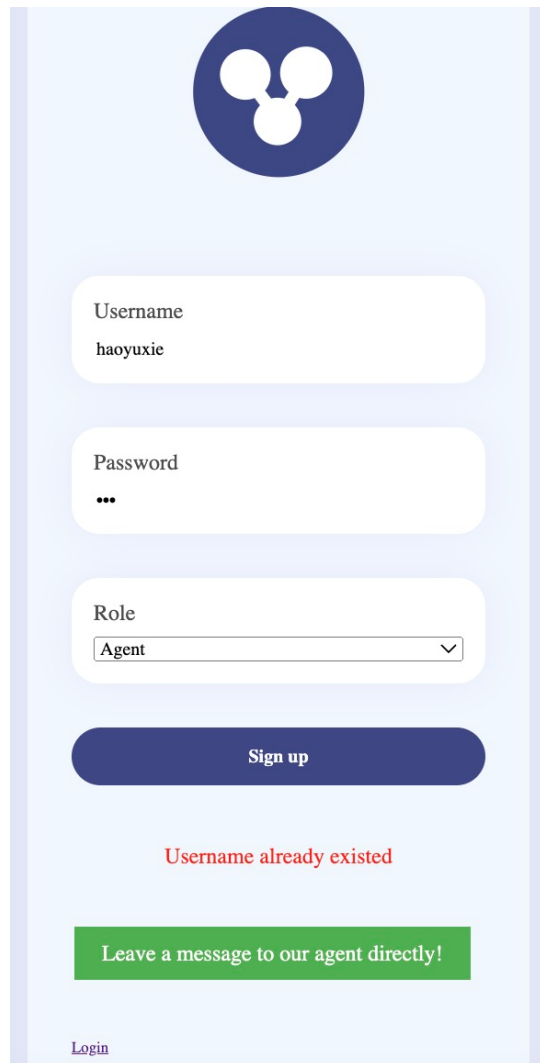
Leave a message to our agent directly!

[Login](#)

- Enter the Account Name and password to sign up
- Choose your role, “Agent” or “customer”
- Send a voice message by clicking “Leave a message to our agent directly” without login
- Sign in if you already have an account



PAGE: SIGN UP



A mockup of a sign-up form on a light blue background. At the top is a dark blue circular icon with three white circles inside. Below it are three input fields: 'Username' with the text 'haoyuxie', 'Password' with three dots, and 'Role' with a dropdown menu showing 'Agent'. A dark blue 'Sign up' button is below the fields. A red error message 'Username already existed' is displayed below the button. At the bottom is a green button with the text 'Leave a message to our agent directly!' and a small 'Login' link in the bottom left corner.

Username
haoyuxie

Password
...

Role
Agent

Sign up

Username already existed

Leave a message to our agent directly!

Login

- Sign up fail if account exists



PAGE: SEND VOICE & TEXT MESSAGE

Voice Recorder

Record Stop Send Save 00:00:00

A large, empty rectangular text box with a thin border, intended for the user to transcribe the recorded voice message. A small cursor icon is visible in the bottom right corner of the box.

- Start to record by clicking “Record”
- Stop recording by clicking “Stop”
- Show the voice message in the box



PAGE: SEND VOICE & TEXT MESSAGE

Voice Recorder

Name:

Phone Number:

00:00:05

Text text

- Show the transcript in the text box, e.g. I say “text text” and it will be printed out
- Send the voice message, text message, name and phone number to an active agent by clicking “Send” without login or sign up
- Show the sending result after click “sending”

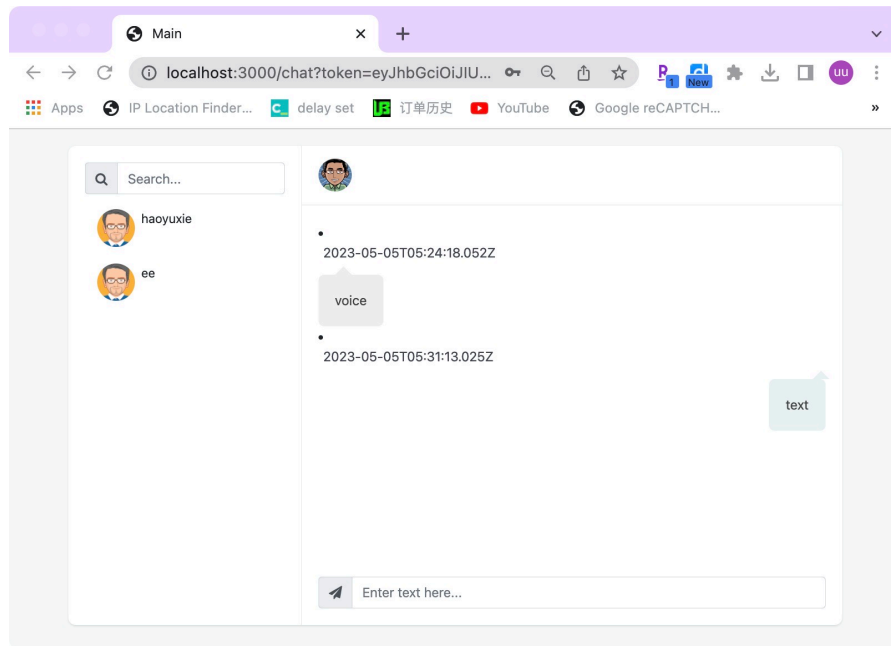
Message Sent Successfully

Thank you for contacting us. Your message has been received and will be reviewed by one of our specialists. They will be in touch with you within 2 working days.

[Go back to homepage](#)



PAGE: CHAT



- Search people and initialize session using the left upper search box
- Select different sessions by clicking the session listing at left
- Send message by input text and click the send image at bottom
- Show the chat history when open a session



BACKEND



BACKEND SUMMARY

- MongoDB:

Personnel

_id

name

password

role

sessions

created_at

Session

_id

p1

p2

last_update

messages

created_at

Message

_id

pid

sid

last_update

messages

created_at



OUTSIDE DATA SOURCE / API

- Bootstrap snippet:
 - get the CSS file of chat page from this template
- Web Speech API:
 - `SpeechRecognition` and `webkitSpeechRecognition`



API



API SUMMARY

- REST endpoints

Rest API	USAGE
Get /ping	Ping the server
Get /income	Render the sending voice page
Get /succ	Render the successfully sending pe
Get /login	Render the login page
Get /sign-up	Render the sign-up page
Get /protected	Return the username
Get /personnel/:pid	Return the message lsit
Post /signup	Return the signup Information
Post /login	Return the token
Post /voice	Return the voice-to-text message
Post /session	Return the message and people name



IN CONCLUSION...



OUTCOMES AND RESULTS

- Customer could send voice and text simultaneously and easily without login and sign up
- Agent could chat with multiple customers and colleagues at the same time and also send text and voice.
- Voice-to-text and text-to-voice make communication and archive the history much easier.



INCOMPLETE AND DESCOPE FEATURES

- Some functions haven't been implemented, like forward the messages, group chatting.
- The chat page is not stable for the long time and could be more beautiful.