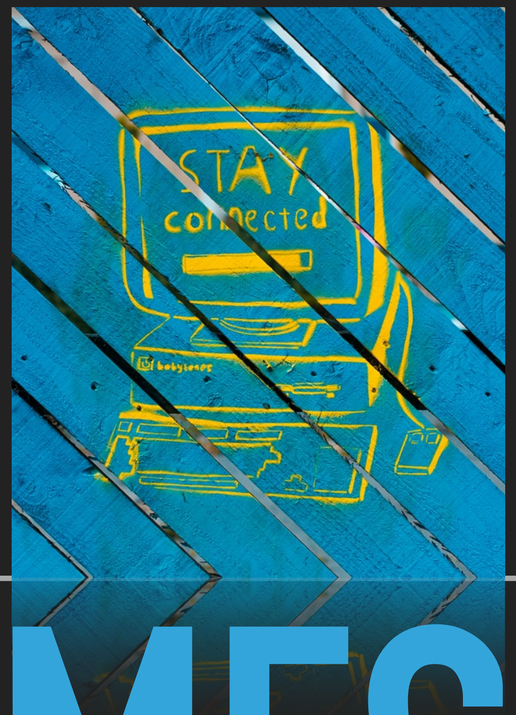

MESSENGER

A 1:1 Realtime Chat Web App

Jiaqi Xiong

5th July 2021

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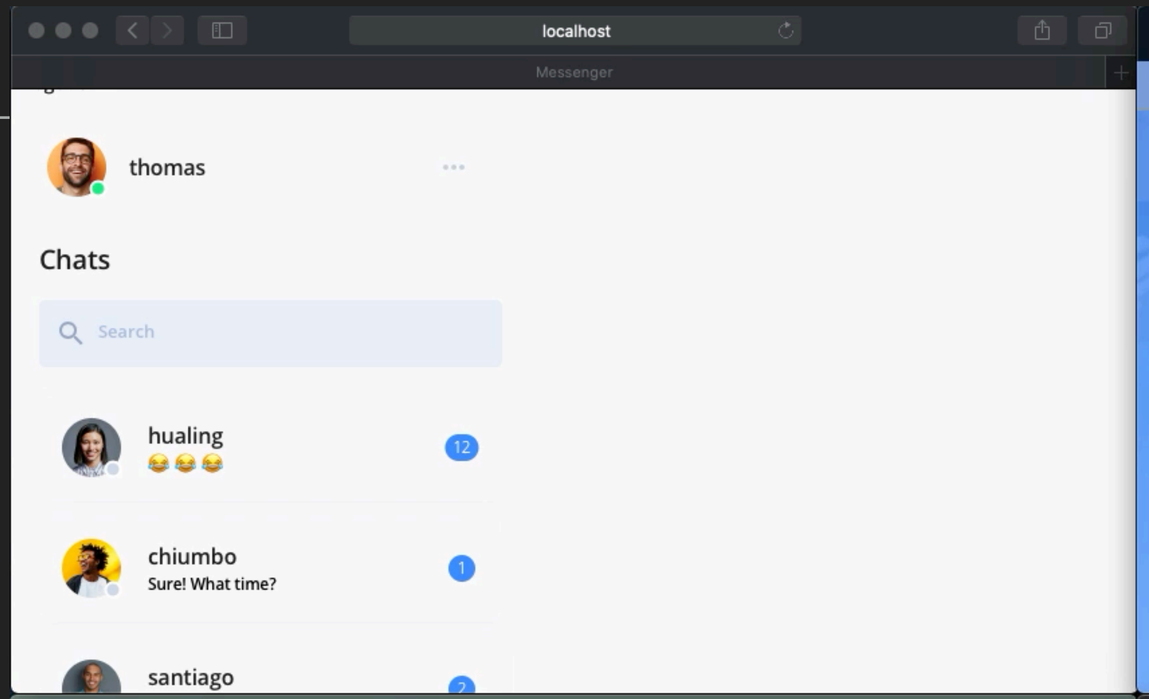
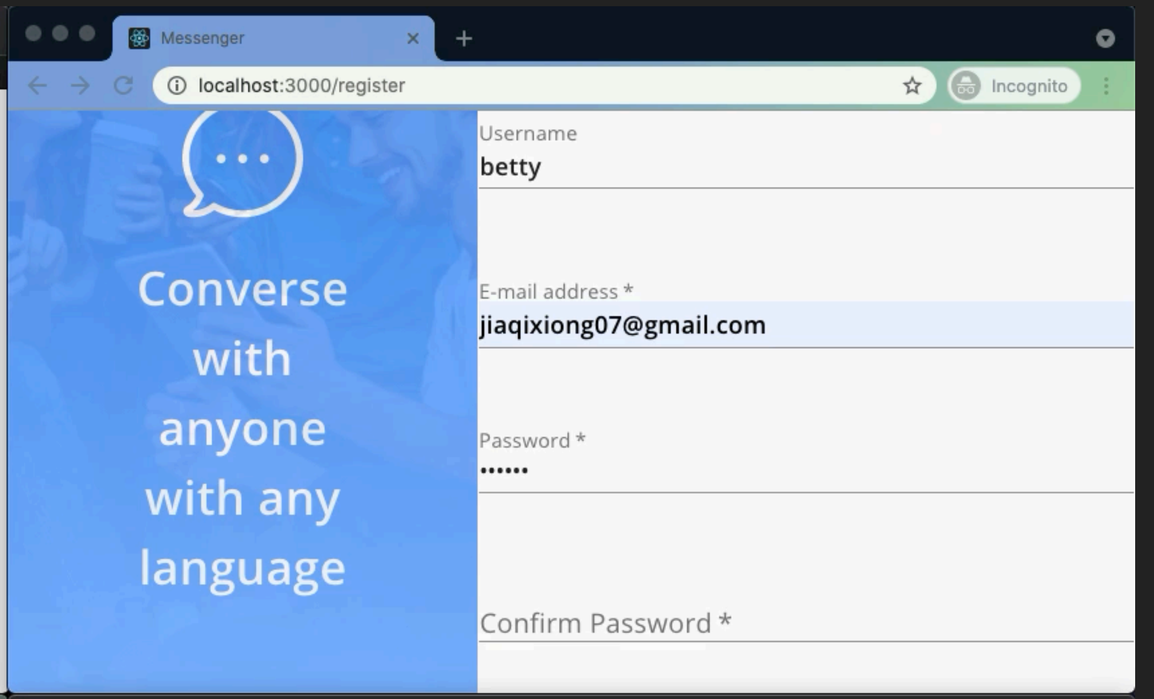
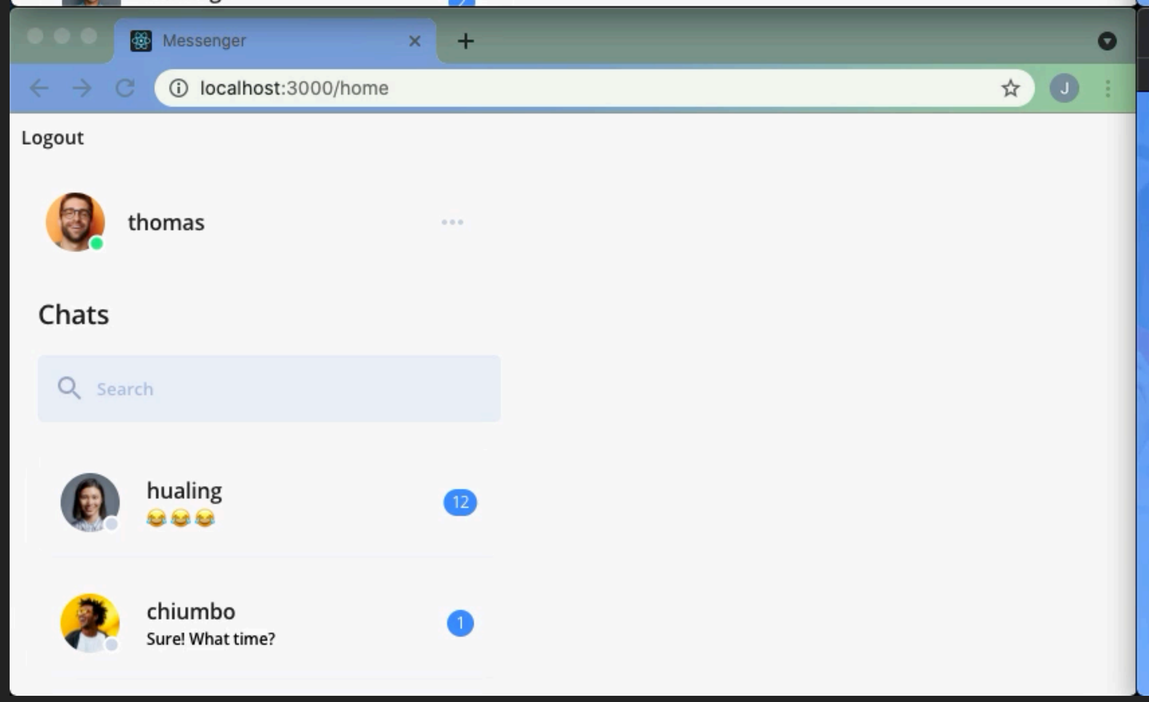
- 1 Introduction
- 2 My contribution
  - 2.1 Code Refactoring
  - 2.2 Bug Fixing
  - 2.3 Implementation of New Features
- 3 Future Work

0 DEMO


localhost
Messenger
thomas
Chats
Search
hualing
chiumbo
Sure! What time?
santiago


Messenger
localhost:3000/register
Incognito
Converse with anyone with any language
Username
betty
E-mail address *
jiaqixiong07@gmail.com
Password *
Confirm Password *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Logout
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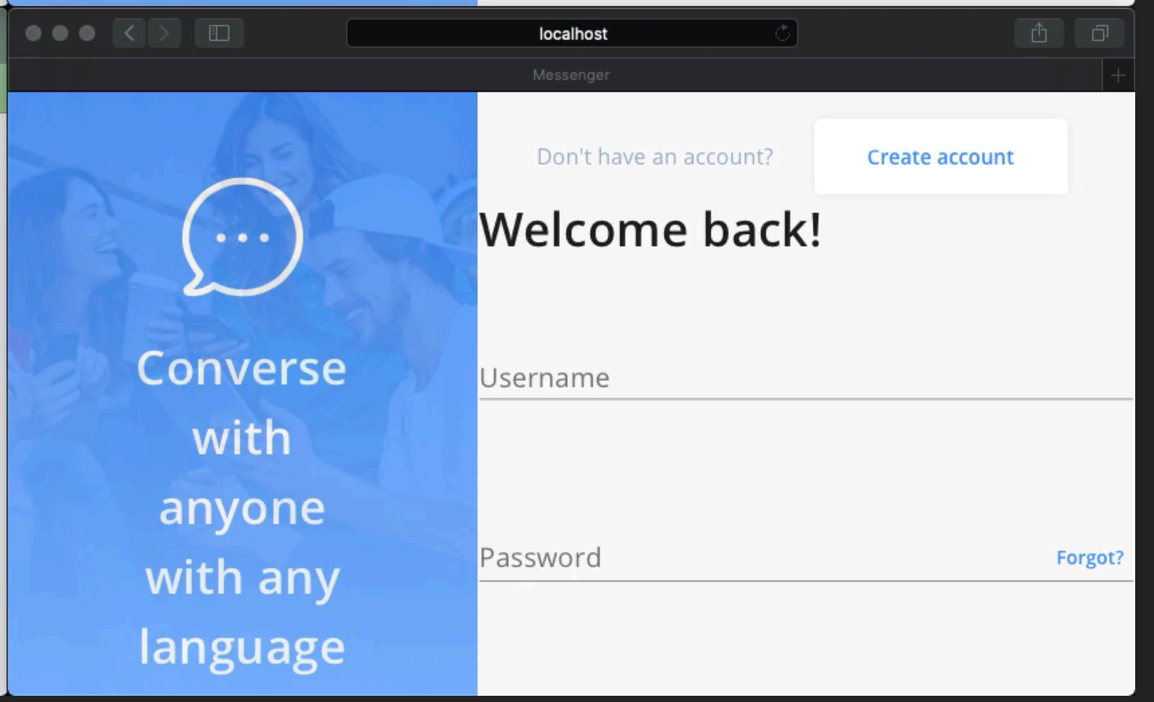
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Messenger
Converse with anyone with any language
Don't have an account?
Create account
Welcome back!
Username
Password
Forgot?

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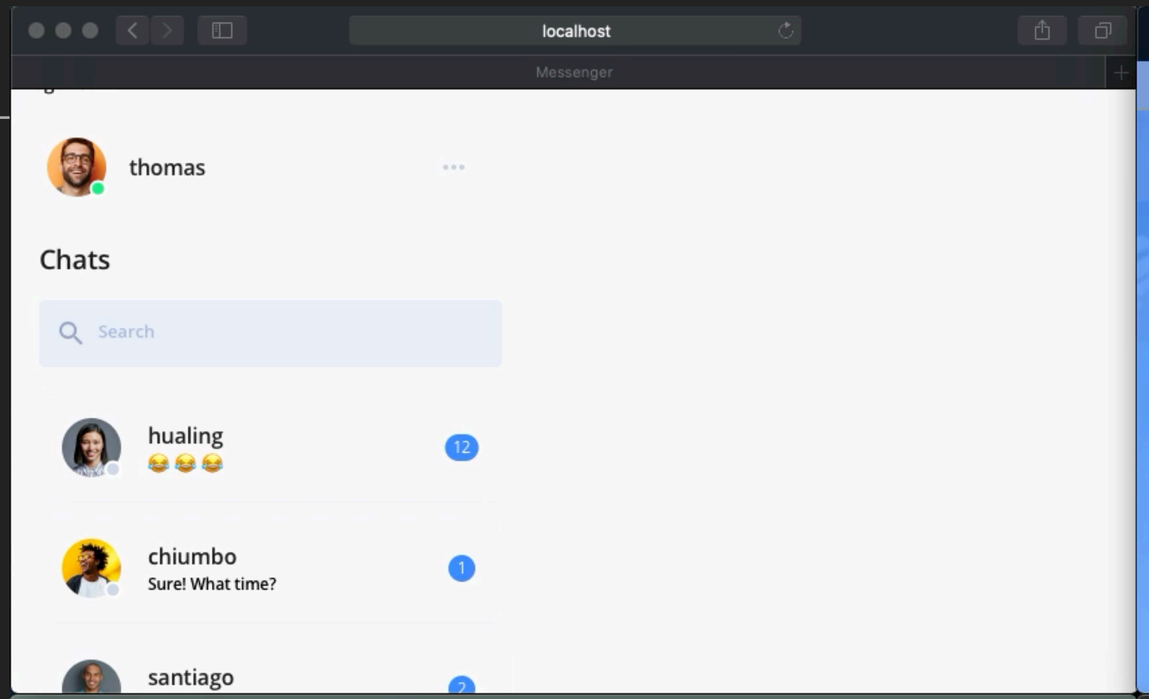
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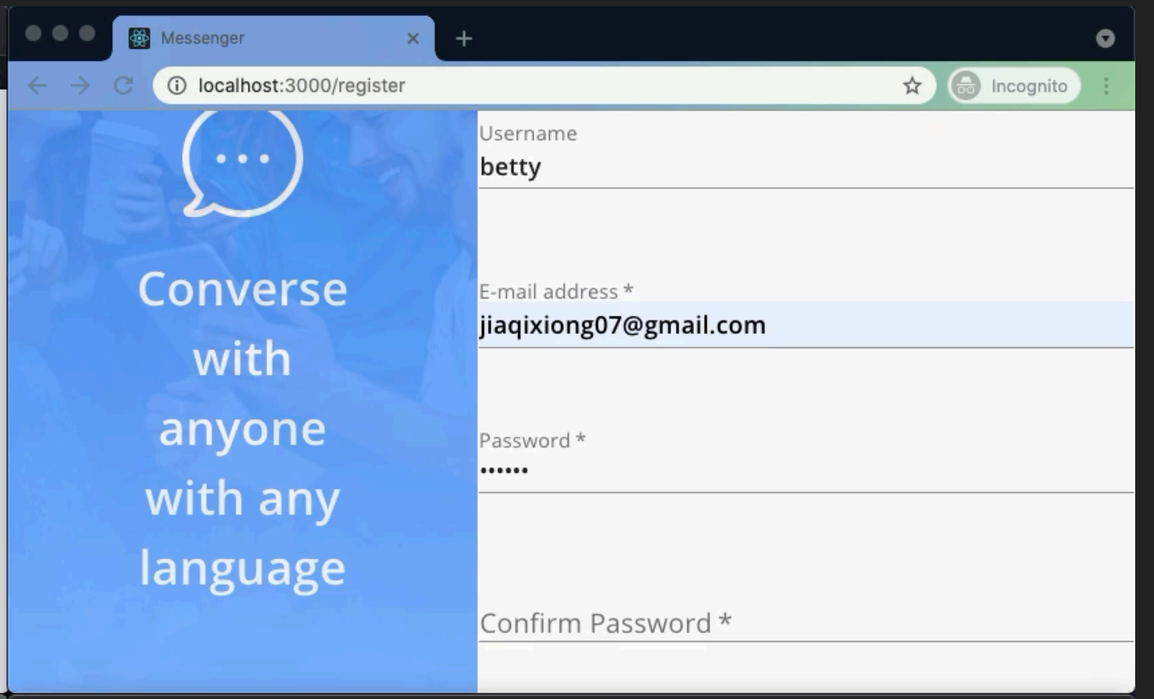
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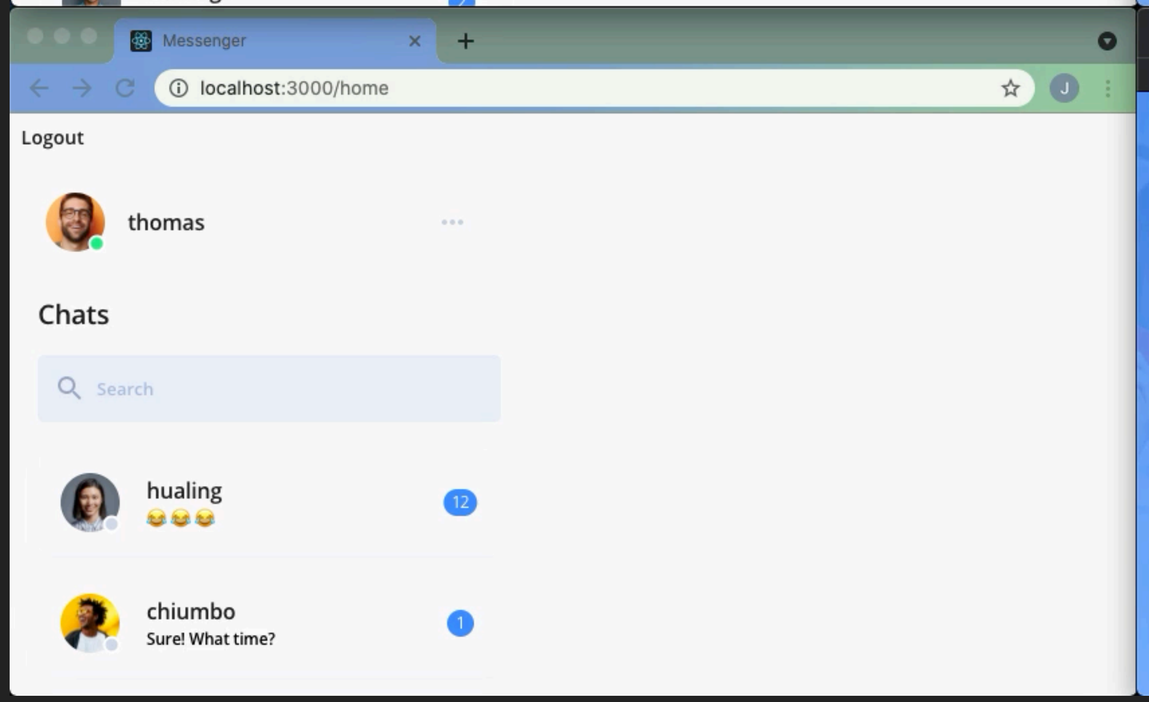
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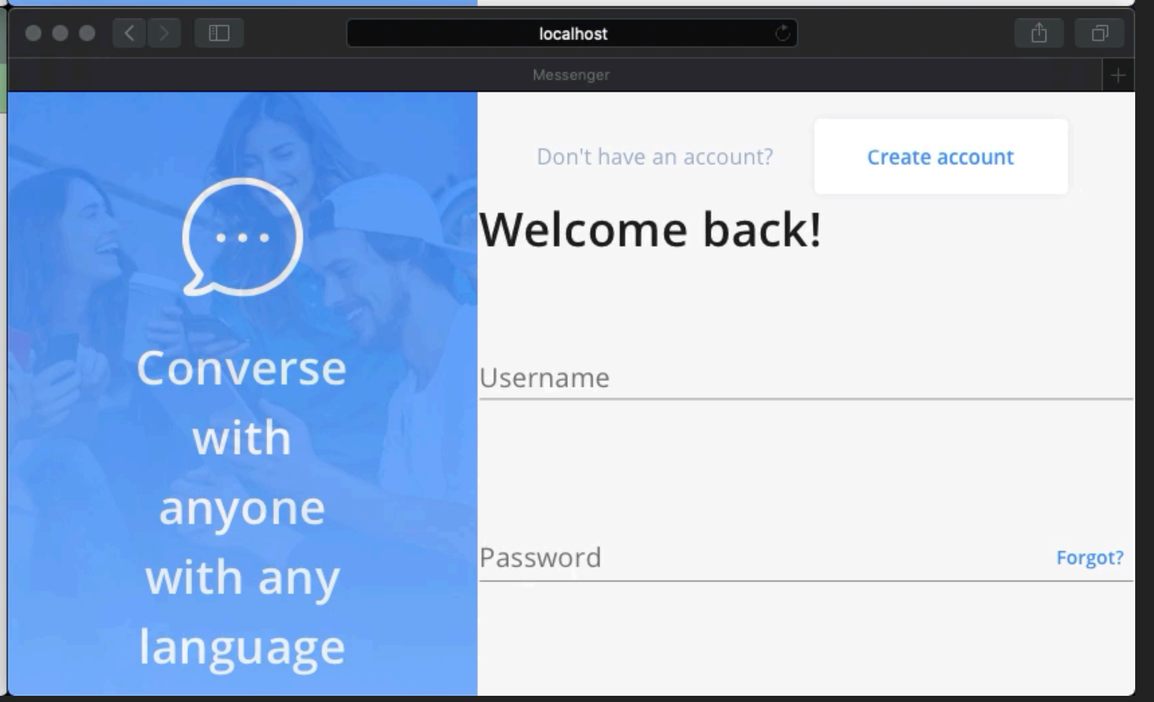
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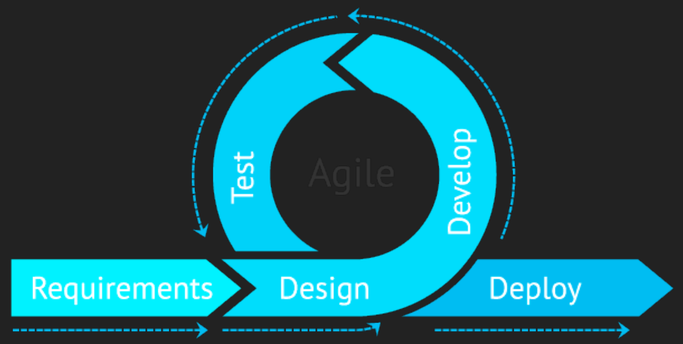
Messenger: One-To-One Web-Based Realtime Chat App

- Process: Six tickets in one sprint



Messenger: One-To-One Web-Based Realtime Chat App

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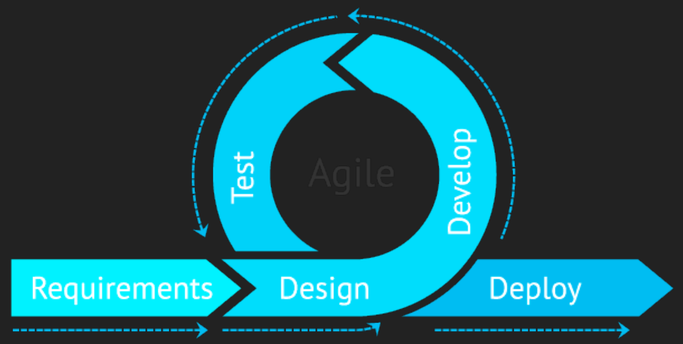
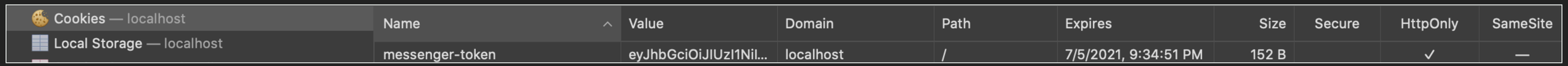


- Teck Stack

2.1.1 JWT: Local Storage —> Cookies



Cookies — localhost
Local Storage — localhost

Name	Value	Domain	Path	Expires	Size	Secure	HttpOnly	SameSite
messenger-token	eyJhbGciOiJIUzI1NiI...	localhost	/	7/5/2021, 9:34:51 PM	152 B		✓	—

- Process
  - Clean localStorage related logic in client-side
  - Set attributes for cookies in server-side: httpOnly && maxAge
- Benefit: Mitigate cross-site scripting (XSS) attacks
- Caution
  - Consider all states (E.g. login/register/logout)
  - Units may differ (E.g. expiresIn: 86400!==maxAge: 86400)

2.1.2 Components: Class —> Functional

- Main Changes in Home/Search/Input/Chat
  - this.state –> useState()
  - componentDidMount()+componentDidUpdate() –> useEffect()
- Benefit
  - A easier life without ‘this’
  - No more lifecycle-based split but logic-based
- Caution: Original code may have bugs (E.g. isLoggedIn)

Issue: Sending Messages

- Display sent messages in real time
- Correct order of messages on page load
- Three Attempts to Improve Security
  - Only include existing conversations in search results
  - Not render FilledInput if the conversation is not between current user and others
  - Check if the conversation belongs to the sender before posting

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2.3.1 Read Status

- Process
  - Add a readStatus column for messages in database
  - Define the action ‘read’ and handle this event both in client-side and server-side
  - Count the unread messages and adjust UI for notifications
  - Put an avatar under the last read message as a read receipt
- Caution
  - Efficiency is important especially when a loop is related to render (E.g. Find the last read message)
  - Review existing knowledge if necessary (E.g. Three types of copy)

2.3.2 Sockets

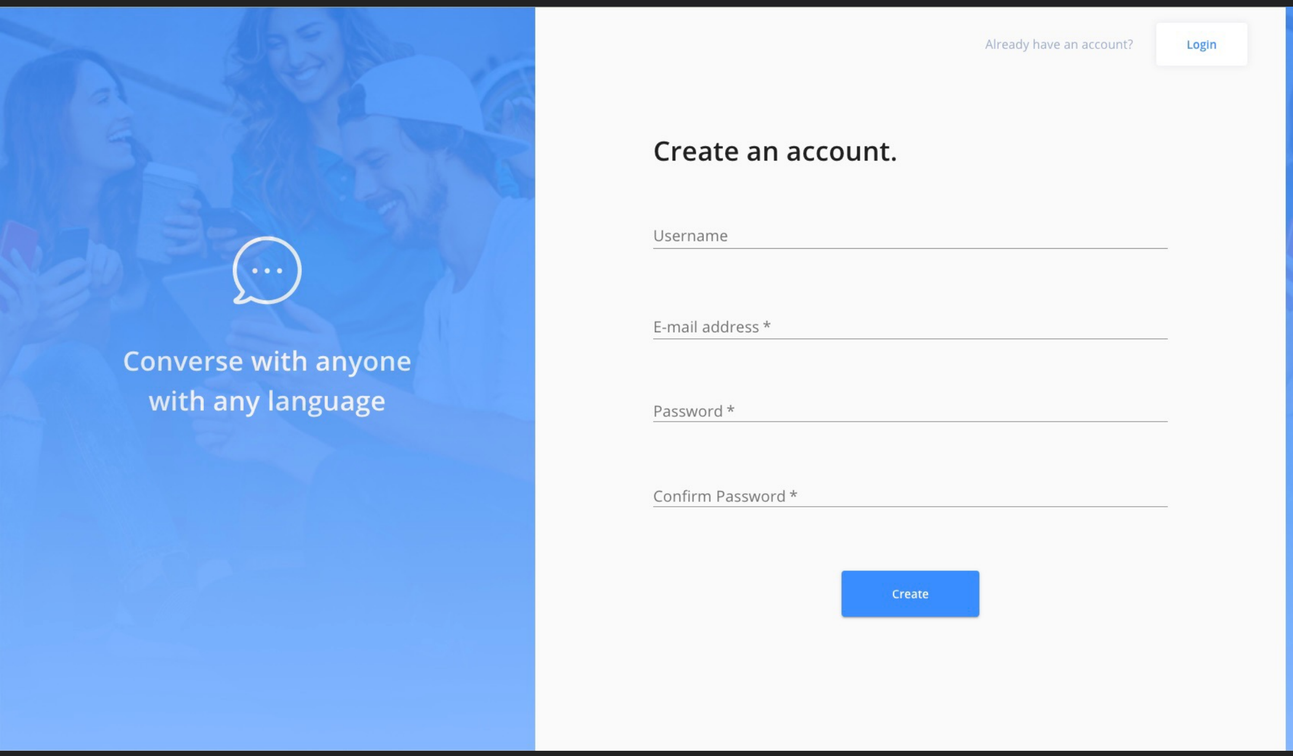
- Improvement
  - Allow only authenticated users connecting to socket
  - Introduce room to secure conversations
  - Avoid duplicate conversations when receiving messages while searching it
  - Support concurrent display on multiple logins
- Caution: Try to have long-term consideration (E.g. Grab exact the needed cookie)

2.3.2 Sockets

- Two Challenges
  - Pretty new to Socket.IO
    - Solution
      - Conceptual: Docs && Tutorial
      - Practical: Follow the code flow && console.log()
      - Specific: Stack Overflow && Github Issues
  - Unexpected bugs when integrating and extend the read status feature
    - Solution
      - Change the way of counting unread messages
      - Add the deCount indicator to distinguish reader and sender

2.3.3 New Design for Login/Signup Pages

Recipe: Landing = Banner + Switcher + Login/Signup Form



Already have an account? Login

Create an account.

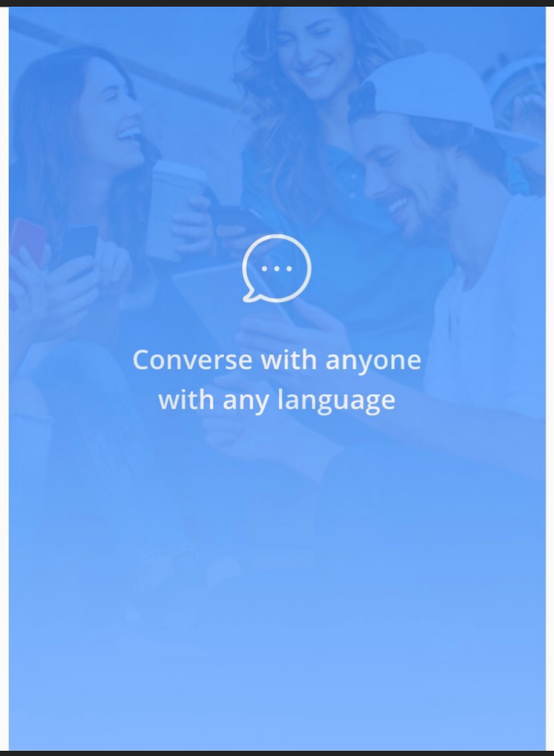
Username

E-mail address *

Password *

Confirm Password *

Create



Don't have an account? Create account

Welcome back!

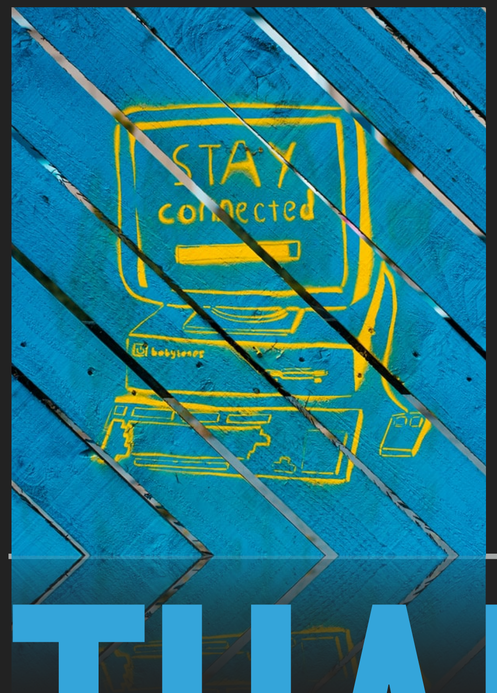
Username

Password Forgot?

Login

3 FUTURE WORK

- Add typing status
- Support rich text sending (E.g. emoji picker, images, text styling, hyperlink)
- Limit max text length
- Load previous messages when necessary/scrolling
- Move active chat to the top of sider bar in real time
- Fix bug that error notice will not be re-rendered



A Great Journey With Hatchways

Jiaqi Xiong

5th July 2021

THANK YOU!

The picture is credited to Ehimetalor Akhere Unuabona on Unsplash.