

# Final Report of Capstone Project

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## Introduction

The project implements an object which allows people to create and receive errands on a platform. It allows new users to create a new account, and edit his or her own information. When enter the system, users can either query an errand or receive an errand. Users can edit the detailed information of the errands they create, like the demand and the price. Users can see all the errands list, with order buttons and filter items, which can help the users find errands they want more quickly. And when receive an errand, the user can also drop the errand or mark the errand as done. The platform can help people solve their own demands, or find their preferred part-time jobs more quickly.

## Development Language and Frameworks

- Main Language: Java, html
- Backend Framework: SpringBoot
- Database: Mysql
- FrontEnd Framework: Vue

## Implemented Functions

### Login and Registration

# Login

Login

Register

- Register: Setting user name and password, and click the register button.
  - There is repeated username check and notification. No repeated username should be created.
- Login: Use user name and password to login.
  - When click the login button, there will be notification if the username or password is wrong.

## Personal Homepage

User Info

[Personal Homepage](#)
[MyErrand](#)
[MyWork](#)

Menu

[Errand List](#)

Operation

Username: user1

Gender: female

Birthday: 2003-10-19

Phone Number: 123456

Location: KAUST

Bank Account: SNB0001

- It is in the sidebar under User Info , click Personal Homepage to jump to.
- Basic information: Edit basic information of the user.
  - The basic information includes name, phone number, address and etc.
  - There will be an item to ask user to bind their bank card to offer or receive the money of an errand. (For this application, there is no professional payment section designed.)

## My Errand

User Info

[Personal Homepage](#)
[MyErrand](#)
[MyWork](#)

Menu

[Errand List](#)

Create

Creator	Errand Type	Create Time	Price	Status	
user1	pet care	2021-12-05 15:30:47	10	Close	
user1	delivery	2021-12-05 15:31:20	11	On	<a href="#">view</a> <a href="#">delete</a>
user1	pet care	2021-12-08 23:26:55	22	Open	<a href="#">view</a> <a href="#">delete</a>
user1	delivery	2021-12-08 23:35:31	55	Open	<a href="#">view</a> <a href="#">delete</a>

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- View MyErrand page errand list: The page to show all errands created by users themselves.
  - The demand page is the main operating page when the user act as an errand creator.
  - For each created errands, there are buttons of "view" and "delete".
- View and edit: When click the "view", the detailed information of this errand will be shown. And there is an edit button at top right, by clicking one can edit his or her own errands.

User Info ^

[Personal Homepage](#)

[MyErrand](#)

[MyWork](#)

Menu ^

[Errand List](#)

Operation

Creator Name: user1

Create Time: 2021-12-05 15:30:47

Current Status: Close

Price: 10 \$

Location: KAUST

StartTime: 2021-10-10 00:00:00

EndTime: 2021-10-10 00:00:00

Pet Type: 1 dog

Demand: feed

User Info ^

[Personal Homepage](#)

[MyErrand](#)

[MyWork](#)

Menu ^

[Errand List](#)

Operation

Creator Name: user1

Create Time: 2021-12-05 15:30:47

Current Status: Close

Price:

10

Location:

KAUST

StartTime:

2021-10-10 00:00:00

EndTime:

2021-10-10 00:00:00

Pet Type:

1 dog

Demand:

feed

- Create: When click the right top create button, there will be options of which type of errands will be created, different errand has different template to fill.

User Info ^

[Personal Homepage](#)

[MyErrand](#)

[MyWork](#)

Menu ^

[Errand List](#)

✓ Operation

Creator Name: user1

Create Time: 2021-12-09 14:47:09

Current Status: Open

Price:

Location:

StartTime:

EndTime:

Pet Type:

Demand:

User Info

Personal Homepage

MyErrand

MyWork

Menu

Errand List

Operation

Creator Name: user1

Create Time: 2021-12-09 16:40:32

Current Status: Open

Price:

StartTime:

EndTime:

Departure:

Destination:

Item Description:

- Delete: Click the "delete" button on each item, the errand will be delete and the status will turn to "close".

## My Work

User Info	Operation				
Personal Homepage					
MyErrand					
MyWork					
Menu					
Errand List					
Creator	Errand Type	Create Time	Price	Status	Operation
user2	pet care	2021-12-05 15:32:25	20	On	<a href="#">view</a> <a href="#">drop</a> <a href="#">done</a>
user2	delivery	2021-12-05 15:32:57	21	Finish	<a href="#">view</a> <a href="#">drop</a> <a href="#">done</a>
<div> <div>&lt;</div> <div>1</div> <div>&gt;</div> </div>					

- View MyWork page errand list: The page to show all errands received by users.
  - Here users can see all the errands they have selected.
  - For each created errands, there are buttons of "view", "drop" and "done".

- View: When click the "view", the detailed information of this errand will be shown.

<div>User Info ^</div> <div><a href="#">Personal Homepage</a></div> <div><a href="#">MyErrand</a></div> <div><a href="#">MyWork</a></div> <div>Menu ^</div> <div><a href="#">Errand List</a></div>	<table><tr><th colspan="2">Operation</th></tr><tr><td>Creator Name: user2</td><td></td></tr><tr><td>Create Time: 2021-12-05 15:32:25</td><td></td></tr><tr><td>Current Status: On</td><td></td></tr><tr><td>Price: 20 \$</td><td></td></tr><tr><td>Location: KAUST</td><td></td></tr><tr><td>StartTime: 2021-10-10 00:00:00</td><td></td></tr><tr><td>EndTime: 2021-10-10 00:00:00</td><td></td></tr><tr><td>Pet Type: 1 cat</td><td></td></tr><tr><td>Demand: feed</td><td></td></tr></table>	Operation		Creator Name: user2		Create Time: 2021-12-05 15:32:25		Current Status: On		Price: 20 \$		Location: KAUST		StartTime: 2021-10-10 00:00:00		EndTime: 2021-10-10 00:00:00		Pet Type: 1 cat		Demand: feed	
Operation																					
Creator Name: user2																					
Create Time: 2021-12-05 15:32:25																					
Current Status: On																					
Price: 20 \$																					
Location: KAUST																					
StartTime: 2021-10-10 00:00:00																					
EndTime: 2021-10-10 00:00:00																					
Pet Type: 1 cat																					
Demand: feed																					

- Drop: Click the "drop" button on each item, the errand will be given up and vanish from the list.
- Done: Click the "done" button on each item, the errand will be marked as done and the status will turn to "Finish".

## Errand List

User Info

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Personal Homepage

MyErrand

MyWork

Menu

^

Errand Type: Selection

Price Interval: Selection

Status: Selection

Search

Creator	Errand Type	Create Time	Price	Status	Operation
user1	pet care	2021-12-05 15:30:47	10	Close	<a href="#">view</a> <a href="#">Select</a>
user1	delivery	2021-12-05 15:31:20	11	On	<a href="#">view</a> <a href="#">Select</a>
user1	pet care	2021-12-08 23:26:55	22	Open	<a href="#">view</a> <a href="#">Select</a>
user1	delivery	2021-12-08 23:35:31	55	Open	<a href="#">view</a> <a href="#">Select</a>
user2	pet care	2021-12-05 15:32:25	20	On	<a href="#">view</a> <a href="#">Select</a>
user2	delivery	2021-12-05 15:32:57	21	Finish	<a href="#">view</a> <a href="#">Select</a>

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- View Errand List page errand list: The page to show all errands on the platform.
  - Here users can see all the errands.
  - For each created errands, there are buttons of "view", "select".
- View: When click the "view", the detailed information of this errand will be shown.

<div>User Info</div> <div>Personal Homepage</div> <div>MyErrand</div> <div>MyWork</div> <div>Menu</div> <div>Errand List</div>	Operation	
	Creator Name: user1	
	Create Time: 2021-12-05 15:30:47	
	Current Status: Close	
	Price: 10 \$	
	Location: KAUST	
	StartTime: 2021-10-10 00:00:00	
	EndTime: 2021-10-10 00:00:00	
	Pet Type: 1 dog	
	Demand: feed	



- Select: Click the "select" button on each item, the errand will be moved to `MyWork` and the status will turn to "On".
- Order: Click the order triangles on each column and users can get ordered errand list.
- Filter: Select the filter item for each of column and click the "Search", then user can get all errands fit the search conditions. And the brush icon can clear the filter conditions.

## Possible Improvements

### Framework and Security

- Speed: The current framework directly query the database, which may cause some speed bottleneck when access number is huge, maybe can add redis cache to solve the problem.
- Security: Now the cookies of the browser store the username and userId, which has security risks. It can be replaced with token or other authentication mechanism.

### Functional

- The UI can be re-designed to look better.
- There should be some section to deal with how to transform money when one errand is finished.
- More drop-down table may help users to select items more easily.

## Conclusion

The project is a meaningful practice on how to build a web application. The knowledge of frontend backend intersection could be helpful for later career in industry. Because of limited experience of frontend, the most difficult part of the project is to figure out how the frontend exchange data with backend, and how to show these data.

There are still some possible improvements to be done, like the performance under high access pressure, or the security problems. The final result implemented almost every functions described in proposal. The operation are straightforward, and the data is synchronous within different users.