

PYTHON ONLINE PROGRAMMING PLATFORM

Group 9

Yulin Wu

Friday, July 11, 2025

AGENDA

-
- 1. Project Idea

 - 2. Project Architecture

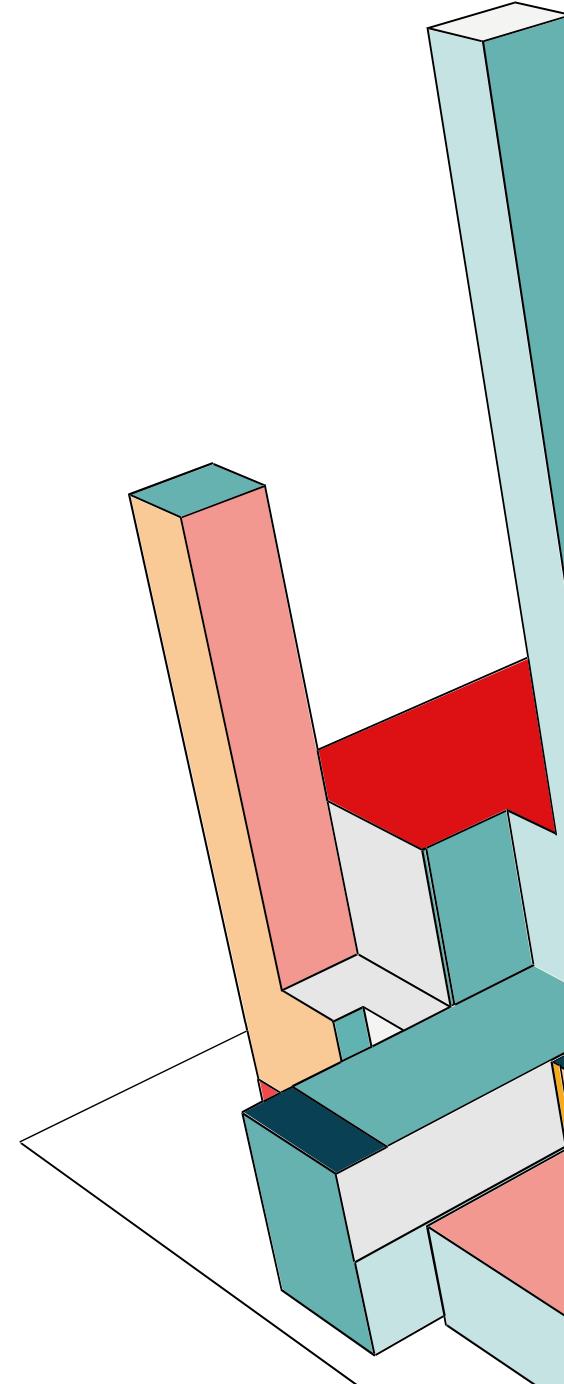
 - 3. Requirement Analysis

 - 4. System Design

 - 5. Functionality

 - 6. Practices Followed

 - 7. Project Milestones



1. PROJECT IDEA

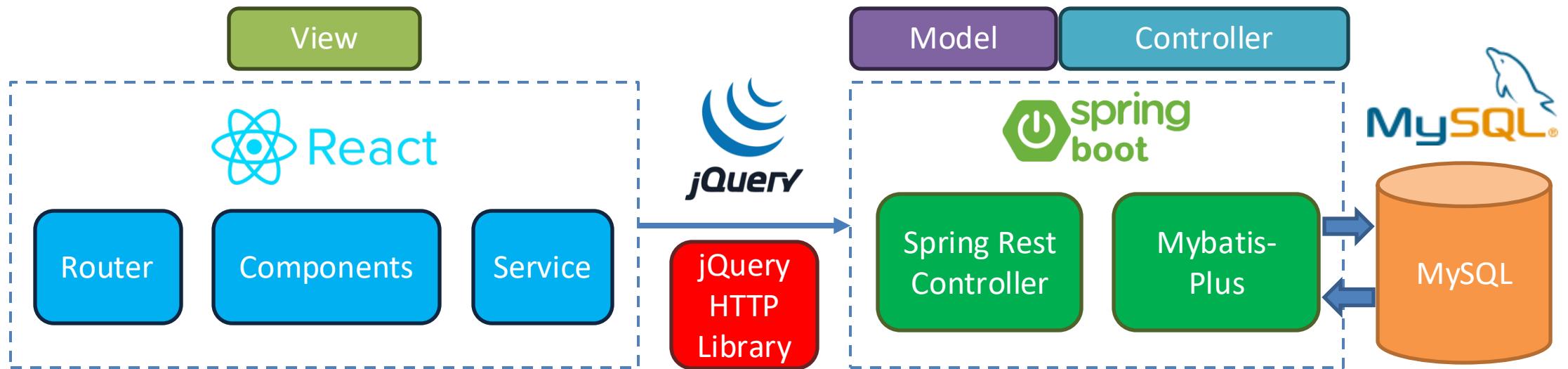


Our project enables Python educators to create problem sets of assignments or exams with objective problems and programming problems.



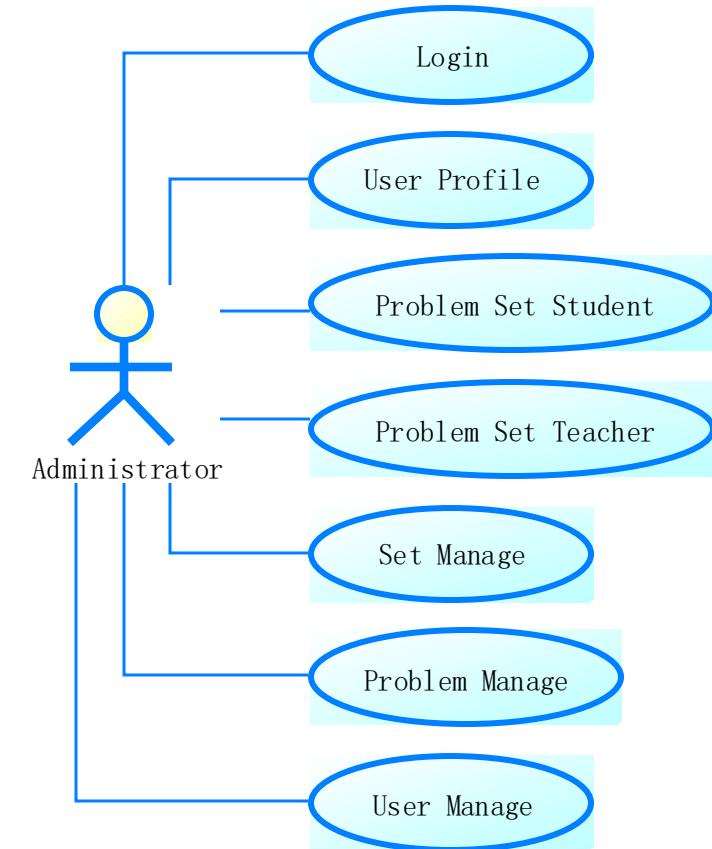
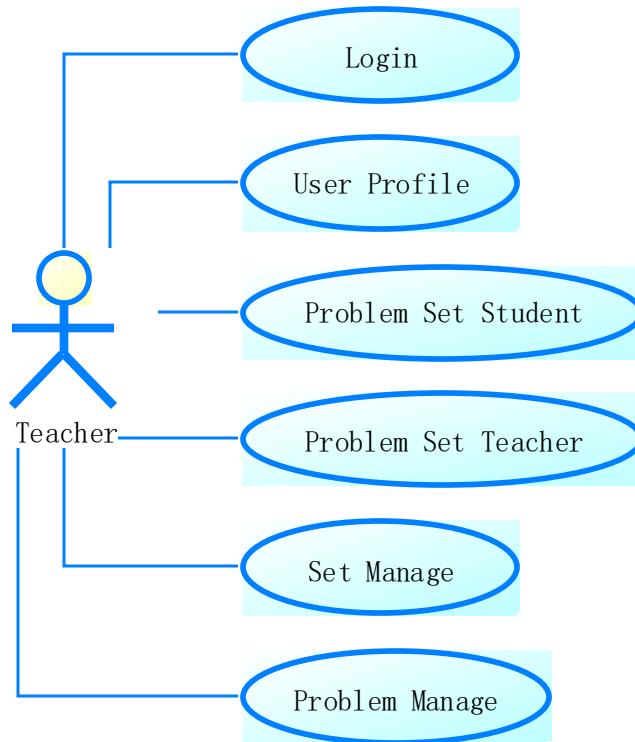
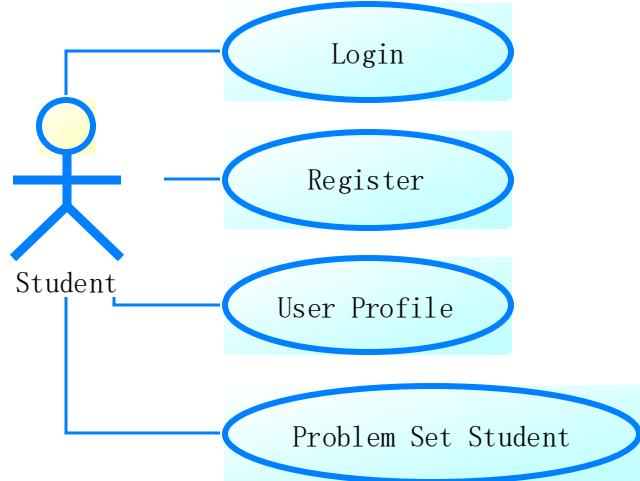
The application will automatically grade students' answers and collect students' performance data for each problem set, meeting the needs of Python education in many aspects.

2. PROJECT ARCHITECTURE

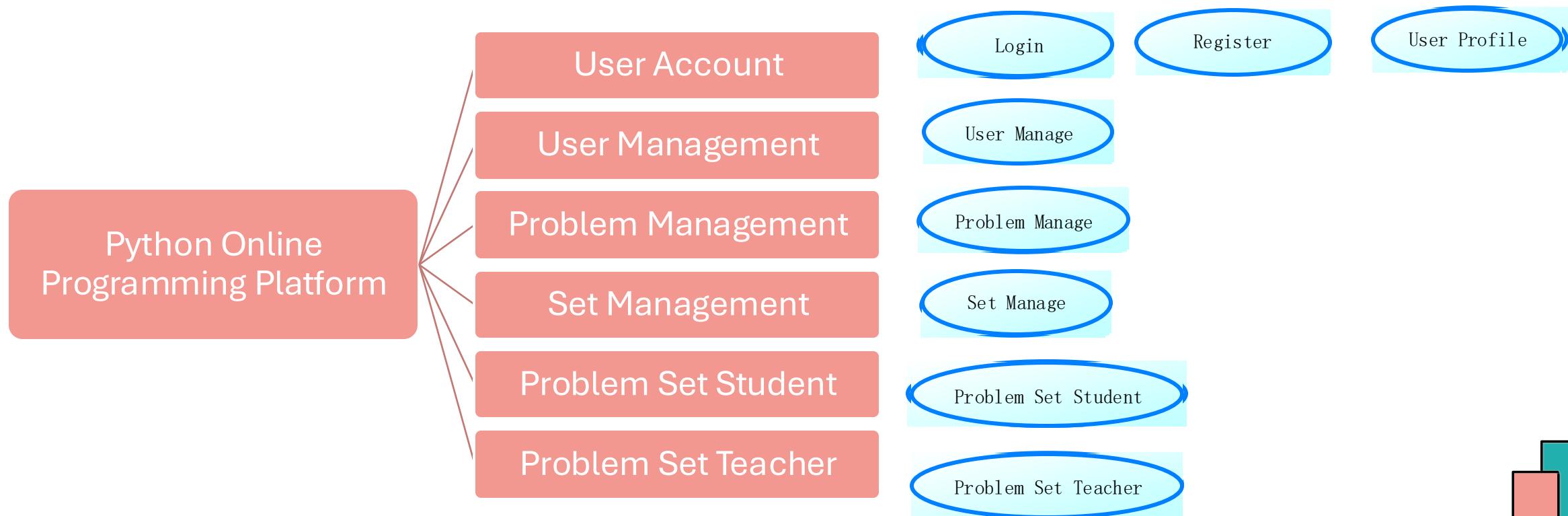


- Frontend Plug-ins: jQuery, Bootstrap, CodeMirror, react-markdown, redux, react-router-dom, SheetJS, react-countdown;
- Backend Plug-ins: JSON Web Token, Lombok, mybatis-plus, Jython.

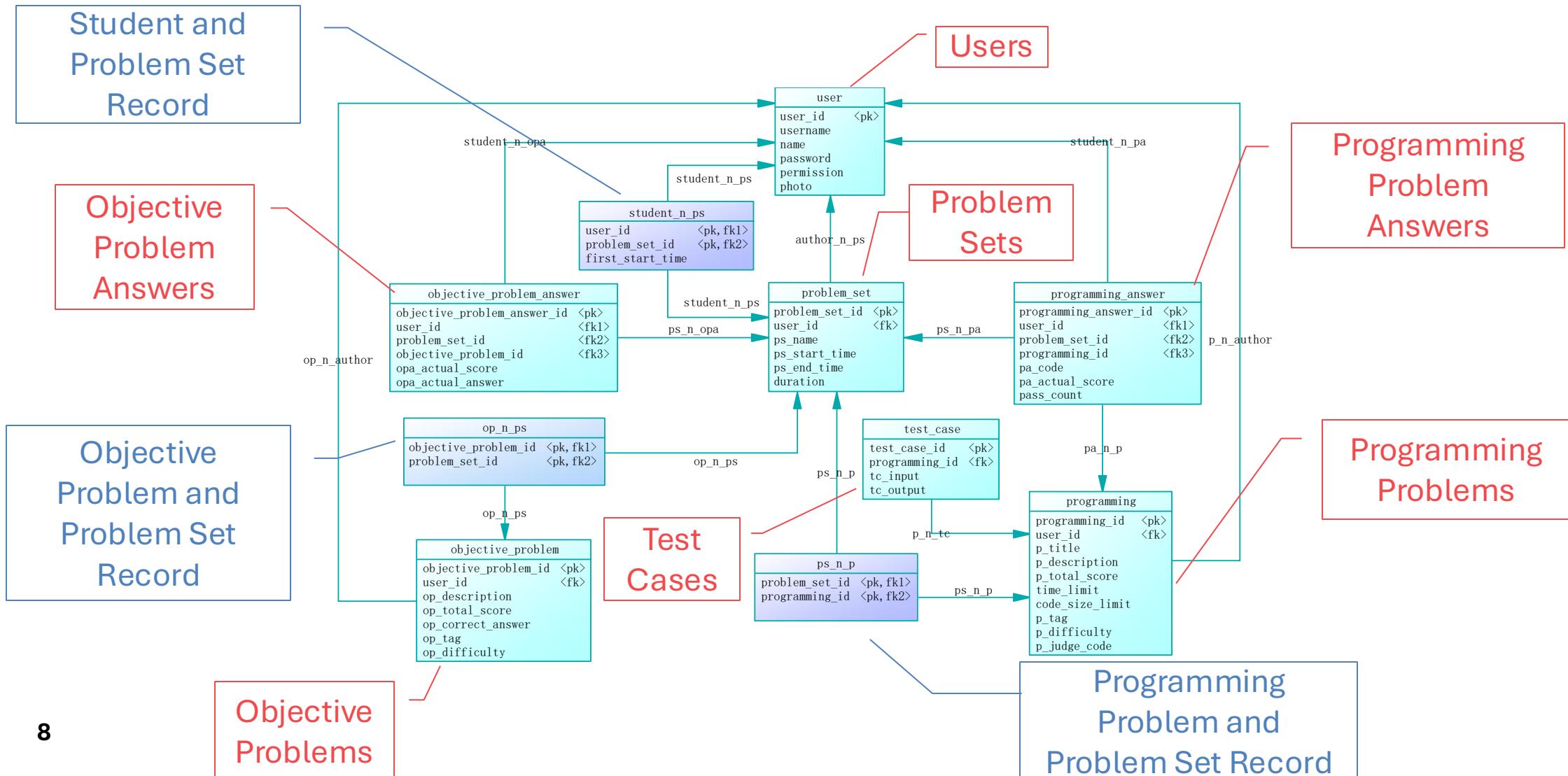
3. REQUIREMENT ANALYSIS



4. SYSTEM DESIGN



4. SYSTEM DESIGN



5. FUNCTIONALITY

5.1 User Account

5.2 User Management

5.3 Problem Management

5.4 Set Management

5.5 Problem Set Student

5.6 Problem Set Teacher

5.1 USER ACCOUNT

Sign In

Username
01

Password
...

Keep me logged in [Register →](#)

[Sign In](#)

➤ Sign In

Register

Username

Password

Confirm Password

[Register](#)

➤ Register

5.1 USER ACCOUNT

Python Programming Platform Home My Problem Set Problem Management Problem Set Management User Management Developer Terry(pyw) Sign Out

User Avatar



Update Avatar

User Information

Username: 01

Name: Terry(pyw)

Permission: Student Teacher Administrator

Update Information

Change Password

Original Password:
Password:
Confirm Password:

Change Password

➤ User Profile

5.2 USER MANAGEMENT

User Management

Update User Information

ID	Username	Name	Permission	Clear	Update Information
----	----------	------	------------	-------	--------------------

Change User Password

Password	Confirm Password	Change Password
----------	------------------	-----------------

Search Criteria

User Search

Username	Support fuzzy search	Name	Operation	
Grace	Search			
#	Username	Name	Permission	Operation
6	06	Grace(123)	Student	Update Delete

➤ Admin User Search

Update / Delete

5.2 USER MANAGEMENT

User Management

Update User Information

ID	6	Username	06	Name	Grace(123)	Permission	Teacher	▼
----	---	----------	----	------	------------	------------	---------	---

Change User Password

Password	Confirm Password	Change Password
----------	------------------	-----------------

User Search

Username	Support fuzzy search	Name	Grace	Search
#	Username	Name	Permission	Operation

User Info

Permission

User information updated successfully

Clear

Update Information

Password

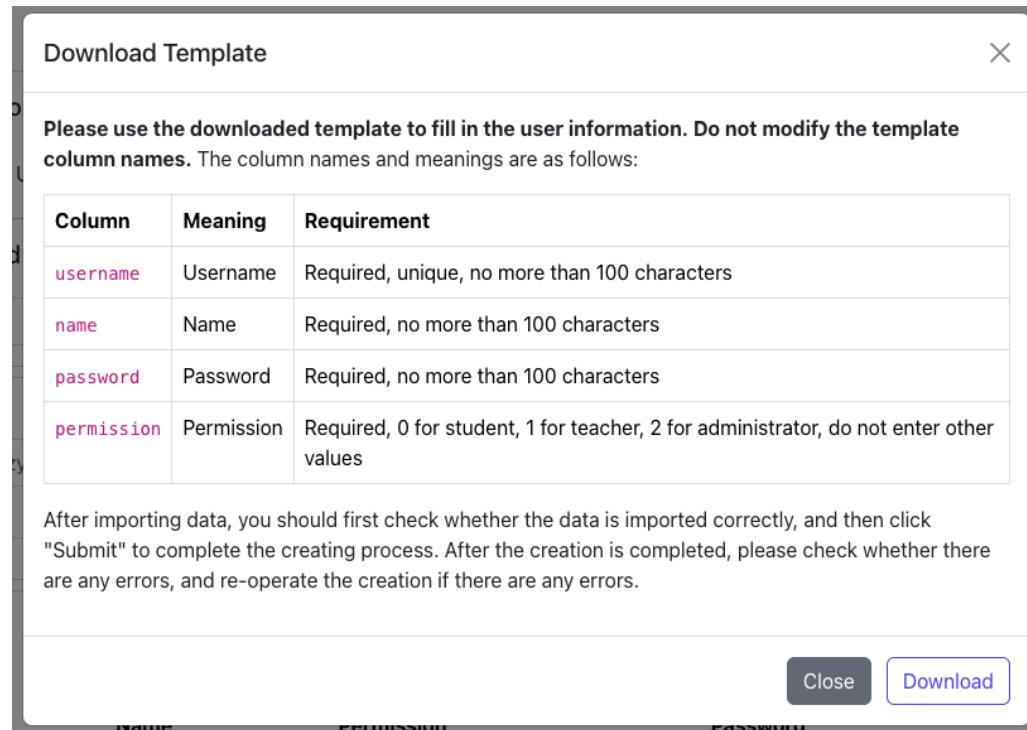
Change Password

Support fuzzy search

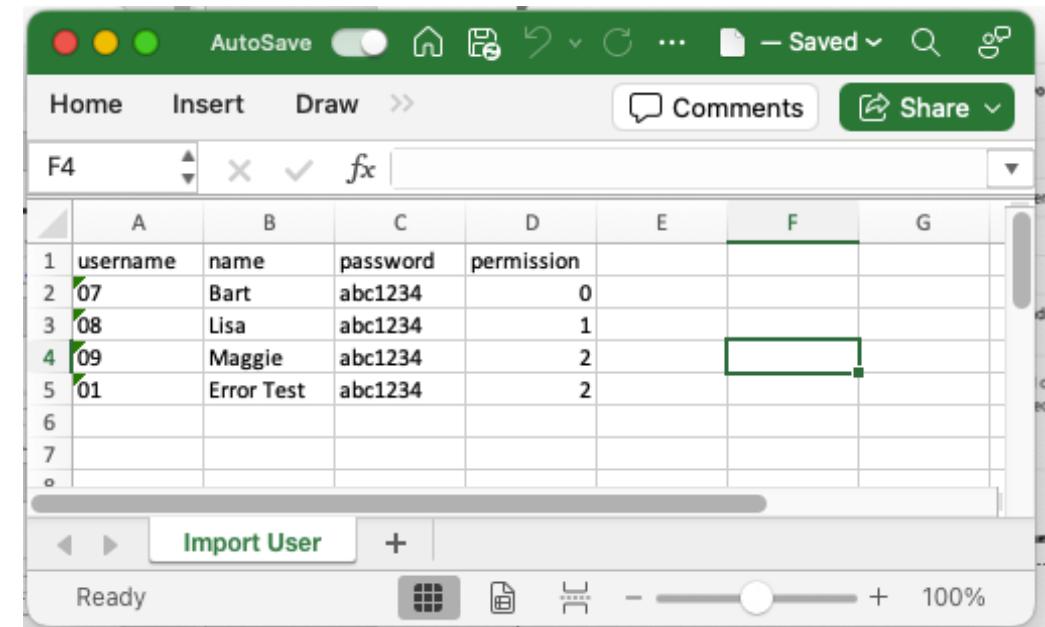
Search

➤ Admin User Update

5.2 USER MANAGEMENT



➤ Batch Create Explanation



➤ Batch Create Template

5.2 USER MANAGEMENT

Import User

Total: 4	Success: 0	Error: 0	Download Template	Import Data	Submit
Username	Name	Permission	Password	Status	
07	Bart	Student	abc1234	Waiting for upload	
08	Lisa	Teacher	abc1234	Waiting for upload	
09	Maggie	Administrator	abc1234	Waiting for upload	
01	Error Test	Administrator	abc1234	Waiting for upload	

➤ Review Importing Users before Submission

5.2 USER MANAGEMENT

Username	Name	Permission	Password	Status
07	Bart	Student	abc1234	Create successfully
08	Lisa	Teacher	abc1234	Create successfully
09	Maggie	Administrator	abc1234	Create successfully
01	Error Test	Administrator	abc1234	Username already exists

Success count Success: 3
Error count Error: 1

Total: 4 Download Template Import Data Submit

Feedback

➤ Feedback after Submission

5.3 PROBLEM MANAGEMENT

The screenshot shows a table of objective problems. The columns are ID, Description, Tag, Score, Difficulty, Use Count, and Author. The table contains 6 rows of data. A red arrow points from the 'Click on the Link to View' button to the first problem's title.

ID	Description	Tag	Score	Difficulty	Use Count	Author
21	The function is as follows: ``python def chanag...	Function	8	5	1	Mary(123)
22	The function is as follows: ``python def chanag...	Function	8	4	1	Mary(123)
23	The function is as follows: ````python def showNn...	Function	5	3	1	Mary(123)
24	The value returned by calling the following functi...	Function	5	2	1	Mary(123)
25	The following is not a keyword in Python (D). A. `...	Syntax	5	2	2	Mary(123)
26	The following code prints the result (B). ``pytho...	Syntax	5	2	0	Mary(123)

Click on the Link to View

➤ Objective Problems List

The screenshot shows a table of programming problems. The columns are ID, Title, Tag, Score, Difficulty, Use Count, and Author. The table contains 10 rows of data. A red arrow points from the 'Click on the Link to View' button to the first problem's title.

ID	Title	Tag	Score	Difficulty	Use Count	Author
1	L1-010 Comparison	Function	20	5	2	Jerry(pyxc)
2	L1-001 Hello World	Syntax	15	1	3	Jerry(pyxc)
3	L1-015 Draw a Square	Branch	25	5	1	Jerry(pyxc)
4	Date format conversion	Syntax	20	3	1	Terry(pyw)
5	1. A + B	Syntax	25	3	1	Terry(pyw)
6	Code Completion A+B	Function	15	2	2	Terry(pyw)
7	Case conversion	Branch	20	2	1	Jerry(pyxc)
8	Determine the triangle	Branch	20	3	1	Jerry(pyxc)
9	Palindrome	Branch	20	4	1	Jerry(pyxc)
10	The number of trailing 0s	Function	25	5	0	Mary(123)

Click on the Link to View

➤ Programming Problems List

5.3 PROBLEM MANAGEMENT

Problem Info

[Back](#) [Submit](#)

Create an Objective Problem

Author: Jerry(pycx) Tag: Syntax Score: 2 Difficulty: 2 Use Count: 0

Description: The following code prints the result (B).

```
1 The following code prints the result (B).
2
3 ````python
4 str1 = "Runoob example....wow!!!"
5 str2 = "exam";
6 print(str1.find(str2, 5))
```
8
9 A. `6 `
10 B. `7`
11 C. `8 `
12 D. `‐1`
```

Word Count: 167 / 100000 [Preview](#)

Answer: B

**Problem Description in Markdown Language**

➤ Create an Objective Problem

[Back](#) [Delete](#) [Update](#)

View an Objective Problem

Author: Mary(123) Tag: Function Score: 5 Difficulty: 3 Use Count: 1

Description: The function is as follows:

```
def showNumber(numbers):
 for n in numbers:
 print(n)
```

Which of the following will throw an error when calling the function? ( C )

A. `showNumer([2,4,5])`  
B. `showNnumber("abcesf")`  
C. `showNumber(3,4)`  
D. `showNumber((12,4,5))`

Word Count: 280 / 10000 [Preview](#)

Answer: C

**Toggle Preview**

**Correct Answer**

➤ View an Objective Problem

18

## 5.3 PROBLEM MANAGEMENT

Back Submit

Create a Programming Problem

Title Hello World Score 5 Difficulty 1 Use Count 0

Author Jerry(pyxc) Tag Syntax Time Limit 400 ms Code Size Limit 16 KB Word Count: 205 / 10000 Preview

Description

```
1 This super simple question does not require any input.
2
3 You just need to output the famous phrase "Hello World!" in one line.
4
5 ### Input sample:
6
7 ``in
8 None
9 ``
10
11 ### Output sample:
12
13 ``out
14 Hello World!
```

Code Completion Judge Code

Test Case

Code Completion Judge Code

➤ Create a Programming Problem

Back Delete Submit

View a Programming Problem

Title 1. A + B Score 25 Difficulty 3 Use Count 1

Author Terry(pyw) Tag Syntax Time Limit 400 ms Code Size Limit 16 KB Word Count: 383 / 10000 Preview

Description

Input two integers and find the sum of the two integers.

Input format

Input two integers  $A, B$ , separated by a space

Output format

Output an integer representing the sum of the two numbers

Data range

$0 \leq A, B \leq 10^8$

Input sample

Code Completion Judge Code

Test Case

Test Case

View a Programming Problem

## 5.3 PROBLEM MANAGEMENT

Code Completion Judge Code

```
1 # The student code will be embedded above the function question assessment program
2
3 a, b = map(int, raw_input('').split())
4 print(f(a, b))
5 print("lalala", end='')
```

Call the function in the judge code

### ➤ Code Completion Judge Code

- Code completion problems ask students to complete a function to solve the problem.
- In this example, the function is `f(a, b)`
- Student code will be placed on top of the judge code to evaluate.

## 5.3 PROBLEM MANAGEMENT

Test Case

| Input   | Output    | Operation                                      |
|---------|-----------|------------------------------------------------|
| 1 4 2 8 | 1 2->4->8 | <button>Delete</button>                        |
| 1 1 2 3 | 1 1->2->3 | <button>Delete</button>                        |
| 1       | 1         | <button>Add</button><br><button>Clear</button> |

Test Case Count: 2

[Run Your Test Case →](#)

Go to Checking Tool

➤ Manage Test Cases

Test Case Checking Tool

```
1 a = list(map(int, input().split()))
2 a.sort()
3 print("{:d}->{:d}->{:d}".format(a[0], a[1], a[2]), end='')
```

**Check Run Time Limit**

**Check Run Output**

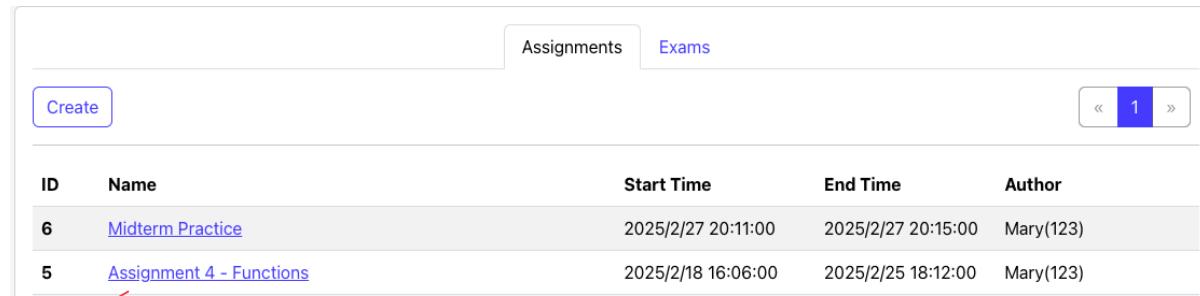
Time Limit 400 ms Run Test

Test Case

| Input | Output  |
|-------|---------|
| 4 2 8 | 2->4->8 |

➤ Test Case Checking Tool

## 5.4 SET MANAGEMENT



Assignments Exams

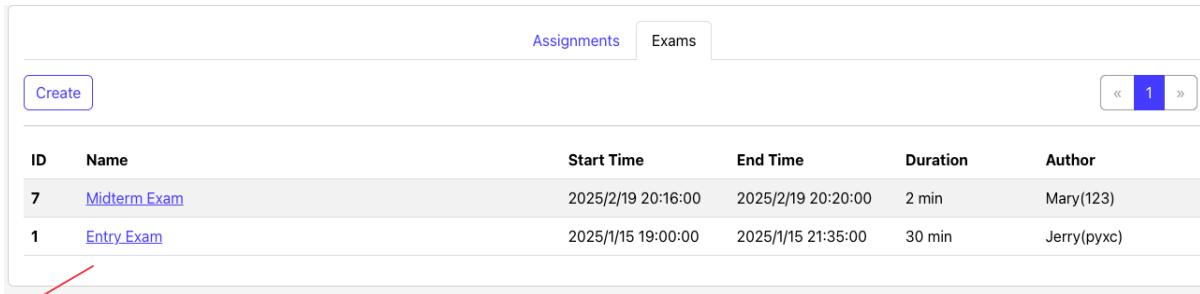
Create

« 1 »

| ID | Name                                     | Start Time         | End Time           | Author    |
|----|------------------------------------------|--------------------|--------------------|-----------|
| 6  | <a href="#">Midterm Practice</a>         | 2025/2/27 20:11:00 | 2025/2/27 20:15:00 | Mary(123) |
| 5  | <a href="#">Assignment 4 - Functions</a> | 2025/2/18 16:06:00 | 2025/2/25 18:12:00 | Mary(123) |

Click on the Link to View

➤ Assignments List



Assignments Exams

Create

« 1 »

| ID | Name                         | Start Time         | End Time           | Duration | Author      |
|----|------------------------------|--------------------|--------------------|----------|-------------|
| 7  | <a href="#">Midterm Exam</a> | 2025/2/19 20:16:00 | 2025/2/19 20:20:00 | 2 min    | Mary(123)   |
| 1  | <a href="#">Entry Exam</a>   | 2025/1/15 19:00:00 | 2025/1/15 21:35:00 | 30 min   | Jerry(pyxc) |

Click on the Link to View

➤ Exams List

## 5.4 SET MANAGEMENT

Problem Set Info

Add Problems

Add Students

➤ Problem Set Creation Procedure

Create

|            |                      |
|------------|----------------------|
| Name       | Final Exam           |
| Author     | Jerry(pyxc)          |
| Start Time | 2025-03-01, 06:30 PM |
| End Time   | 2025-03-01, 07:45 PM |
| Duration   | 60 minutes           |

Close Create

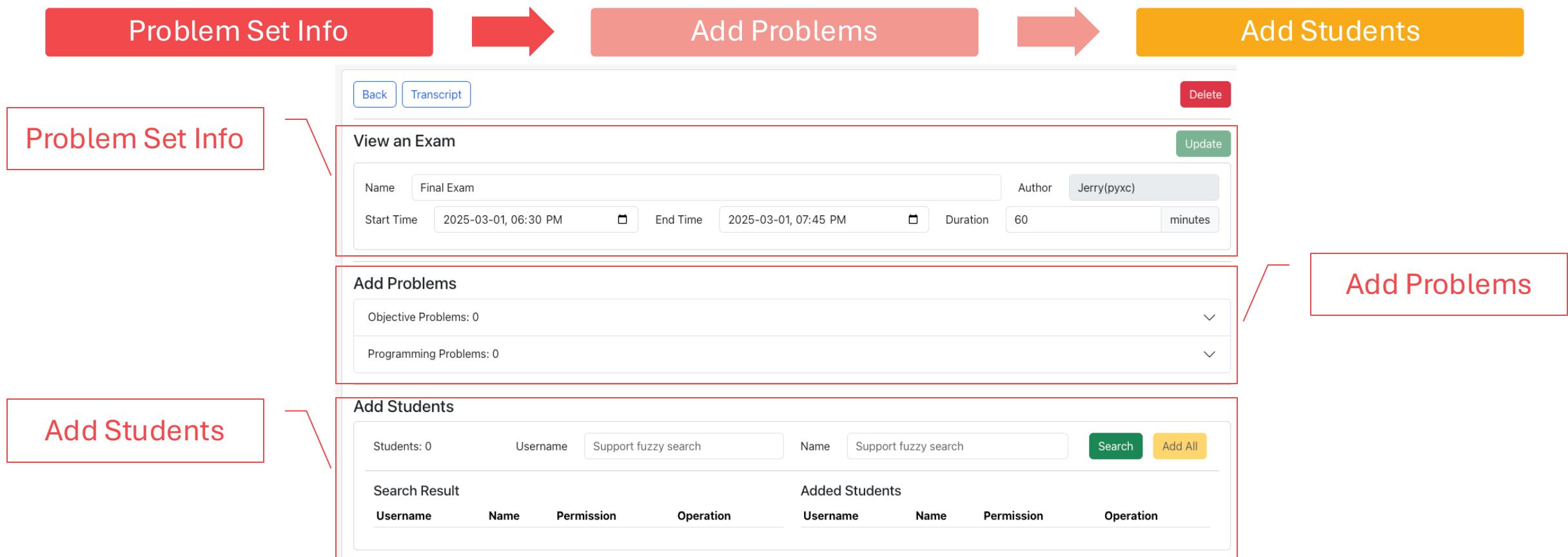
Create

|            |                      |
|------------|----------------------|
| Name       | Final Exam           |
| Author     | Jerry(pyxc)          |
| Start Time | 2025-03-01, 06:30 PM |
| End Time   | 2025-03-01, 07:45 PM |
| Duration   | 60 minutes           |

Exam created successfully Close View

➤ Create a Problem Set

## 5.4 SET MANAGEMENT



➤ Create a Problem Set

## 5.4 SET MANAGEMENT

Search Criteria

Random Add from Search Result

Programming Problems: 1

Title Support fuzzy search Tag Function Difficulty Range 3 ~ 5 Search Random Add

Search Result

| Title                                             | Tag      | Difficulty | Use Count | Operation            |
|---------------------------------------------------|----------|------------|-----------|----------------------|
| <a href="#">L1-010 Comparison</a>                 | Function | 5          | 2         | <button>Add</button> |
| <a href="#">The number of trailing 0s</a>         | Function | 5          | 0         | <button>Add</button> |
| <a href="#">Function question: The sadness...</a> | Function | 3          | 1         | <button>Add</button> |
| <a href="#">Function problem: Number of c...</a>  | Function | 4          | 0         | <button>Add</button> |

Added Problems

| Description                                     | Tag      | Difficulty | Use Count | Operation             |
|-------------------------------------------------|----------|------------|-----------|-----------------------|
| <a href="#">Code Completion: Information...</a> | Function | 3          | 1         | <button>Drop</button> |

Single Add

➤ Add Problems

## 5.4 SET MANAGEMENT

Random Add

Configured by the user

Number of Problems 2

Generate Add All

| Title                                                       | Tag      | Difficulty | Use Count |
|-------------------------------------------------------------|----------|------------|-----------|
| <a href="#">Function problem: Number of common divisors</a> | Function | 4          | 0         |
| <a href="#">The number of trailing_0s</a>                   | Function | 5          | 0         |

Close

➤ Random Add Problems

## 5.4 SET MANAGEMENT

Search Criteria

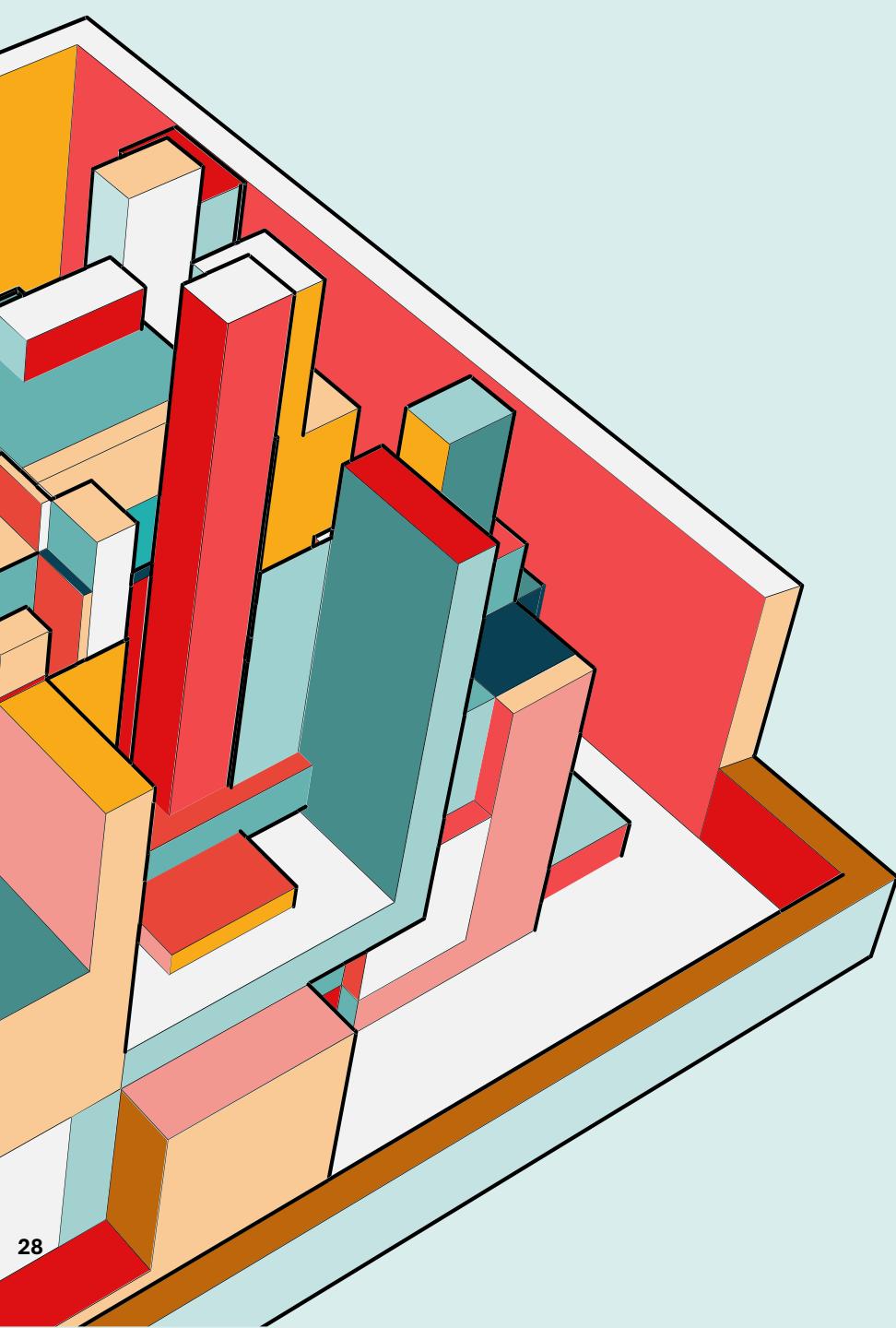
Add All Students in Search Result

Single Add

➤ Add Students

Add Students

| Search Result |             | Added Students |           |          |            |            |           |
|---------------|-------------|----------------|-----------|----------|------------|------------|-----------|
| Username      | Name        | Permission     | Operation | Username | Name       | Permission | Operation |
| 01            | Terry(pyw)  | Administrator  | Add       | 03       | Larry(123) | Student    | Drop      |
| 02            | Jerry(pyxc) | Teacher        | Add       |          |            |            |           |
| 04            | Gary(123)   | Teacher        | Add       |          |            |            |           |
| 05            | Mary(123)   | Teacher        | Add       |          |            |            |           |
| 06            | Grace(123)  | Student        | Add       |          |            |            |           |



# **FUNCTIONS AFTER THE MIDTERM REVIEW**

5.5 Problem Set Student

5.6 Problem Set Teacher

## 5.5 PROBLEM SET STUDENT

Filter Active Problem Set

The screenshot shows a table with columns: Name, Start Time, End Time, Duration, and Author. Two rows are visible: 'Final Exam' (Start: 2025/3/25 11:00:00, End: 2025/3/25 12:00:00, Duration: 60 min, Author: Jerry(pyxc)) and 'Midterm Practice' (Start: 2025/3/25 08:11:00, End: 2025/3/25 20:15:00, Duration: N/A, Author: Mary(123)). A red box highlights the 'Active Problem Sets' tab in the navigation bar.

| Name             | Start Time         | End Time           | Duration | Author      |
|------------------|--------------------|--------------------|----------|-------------|
| Final Exam       | 2025/3/25 11:00:00 | 2025/3/25 12:00:00 | 60 min   | Jerry(pyxc) |
| Midterm Practice | 2025/3/25 08:11:00 | 2025/3/25 20:15:00 | N/A      | Mary(123)   |

Click on the Link to View

➤ Active Problem Set List

Filter All Problem Set

The screenshot shows a table with columns: Name, Start Time, End Time, Duration, and Author. Ten rows are listed: Quiz 2, Final Exam, Midterm Exam, Midterm Practice, Assignment 4 - Functions, Assignment 3 - Control Statements, Assignment 2 - basic data types and expressions, Assignment 1 - Basic Syntax, and Entry Exam. A red box highlights the 'All Problem Sets' tab in the navigation bar.

| Name                                            | Start Time         | End Time           | Duration | Author      |
|-------------------------------------------------|--------------------|--------------------|----------|-------------|
| Quiz 2                                          | 2025/3/10 17:08:00 | 2025/3/11 19:43:00 | 2 min    | Jerry(pyxc) |
| Final Exam                                      | 2025/3/25 11:00:00 | 2025/3/25 12:00:00 | 60 min   | Jerry(pyxc) |
| Midterm Exam                                    | 2025/2/19 20:16:00 | 2025/2/19 20:20:00 | 2 min    | Mary(123)   |
| Midterm Practice                                | 2025/3/25 08:11:00 | 2025/3/25 20:15:00 | N/A      | Mary(123)   |
| Assignment 4 - Functions                        | 2025/2/18 16:06:00 | 2025/2/26 18:12:00 | N/A      | Mary(123)   |
| Assignment 3 - Control Statements               | 2025/2/18 16:03:00 | 2025/2/18 16:09:00 | N/A      | Jerry(pyxc) |
| Assignment 2 - basic data types and expressions | 2025/2/18 15:56:00 | 2025/2/18 16:04:00 | N/A      | Jerry(pyxc) |
| Assignment 1 - Basic Syntax                     | 2025/2/15 17:47:00 | 2025/2/16 18:10:00 | N/A      | Jerry(pyxc) |
| Entry Exam                                      | 2025/1/15 19:00:00 | 2025/1/15 21:35:00 | 30 min   | Jerry(pyxc) |

Click on the Link to View

➤ All Problem Set List

## 5.5 PROBLEM SET STUDENT

Problem Set Info

Problem Set Answering Status

Answer Sheet

Final Score

Entry Exam

**Problem Set Information**

Author: Jerry(pyxc)  
Start Time: 2025/1/15 19:00:00  
End Time: 2025/1/15 21:35:00  
Duration: 30 minutes

**Answering Status**

Problem Set Status: The problem set has ended  
Answering Start Time: 2024/4/15 18:00:47  
Time Remaining: The problem set has ended

**My Answer Sheet**

Student Name: Larry(123)      Final Score: 33 / 56

| Objective Problems: 3 |                                                               |       | Programming Problems: 2 |       |                                    |         |          |
|-----------------------|---------------------------------------------------------------|-------|-------------------------|-------|------------------------------------|---------|----------|
| #                     | Description                                                   | Score | #                       | Title | Score                              |         |          |
| 1                     | <a href="#">The maximum flow from \$s\$ to \$t\$ in th...</a> | 0 / 8 | Answered                | 1     | <a href="#">L1-010 Comparison</a>  | 20 / 20 | Answered |
| 2                     | <a href="#">**Single-choice question** Which of the...</a>    | 5 / 5 | Answered                | 2     | <a href="#">L1-001 Hello World</a> | 0 / 15  | Answered |
| 3                     | <a href="#">**Single-choice question** The time effi...</a>   | 8 / 8 | Answered                |       |                                    |         |          |

Click on the Problem Link to View and Answer

➤ View Problem Set Info and Answer Sheet

30

## 5.5 PROBLEM SET STUDENT

Problem Navigation

The screenshot shows a web-based application for solving objective problems. At the top, there are navigation links: 'Previous' (disabled), 'My Answer Sheet' (disabled), and 'Next'. Below these are buttons for 'Problem List' and 'Hide Timer'. The current problem is 'Objective Problem 2'. A timer is visible on the right side of the page.

Which of the following statements is incorrect (A).

A. All standard objects except dictionary types can be used for Boolean tests  
B. The Boolean value of an empty string is **False**  
C. The Boolean value of an empty list object is **False**  
D. The Boolean value of any numeric object with a value of 0 is **False**

My Answer: C

Submit

Timer

Time Remaining: 00:05:59:55

Student's Answer

➤ Objective Problem Answering Page

Score of This Problem

Problem Description

Timer

## 5.5 PROBLEM SET STUDENT

Switch to the Previous Problem

Previous

Switch to the Next Problem

Next

My Answer Sheet

Problem List



Objective Problems: 3

| # | Description                                                       | Score  | Status   |
|---|-------------------------------------------------------------------|--------|----------|
| 1 | <a href="#">Which of the following is not a legal identifier?</a> | -- / 8 | Answered |
| 2 | <a href="#">Which of the following statements is incorrect?</a>   | -- / 8 | Answered |
| 3 | <a href="#">The function is as follows: ````python def ...</a>    | -- / 8 | Answered |

Programming Problems: 2

| # | Title                                             | Score   | Status   |
|---|---------------------------------------------------|---------|----------|
| 1 | <a href="#">Parity of ending non-zero numbers</a> | 25 / 25 | Answered |
| 2 | <a href="#">Single Love Song</a>                  | 0 / 25  | Answered |

Answering Status Summary

➤ Problem Navigation

# 5.5 PROBLEM SET STUDENT

Previous My Answer Sheet Next

Problem List

Objective Problem 2

Which of the following statements is incorrect (A).

A. All standard objects except dictionary types can be used for Boolean tests

B. The Boolean value of an empty string is `False`

C. The Boolean value of an empty list object is `False`

D. The Boolean value of any numeric object with a value of 0 is `False`

My Answer  Submit

Show or Hide the Timer

Hide Timer

Name: Larry(123) Score: -- / 8

Timer

Time Remaining: 00:05:59:55

Timer

33

# 5.5 PROBLEM SET STUDENT

Previous      My Answer Sheet      Next

Problem List

Programming Problem 1

L1-010 Comparison      Time Limit: 400ms  
Code Size Limit: 16KB

This question requires you to output any 3 integers from small to large.

**Input format**  
Input 3 integers in a line, separated by spaces.

**Output format**  
Output 3 integers in a line from small to large, connected by ">".

**Input example**  
4 2 8

**Output example**  
2->4->8

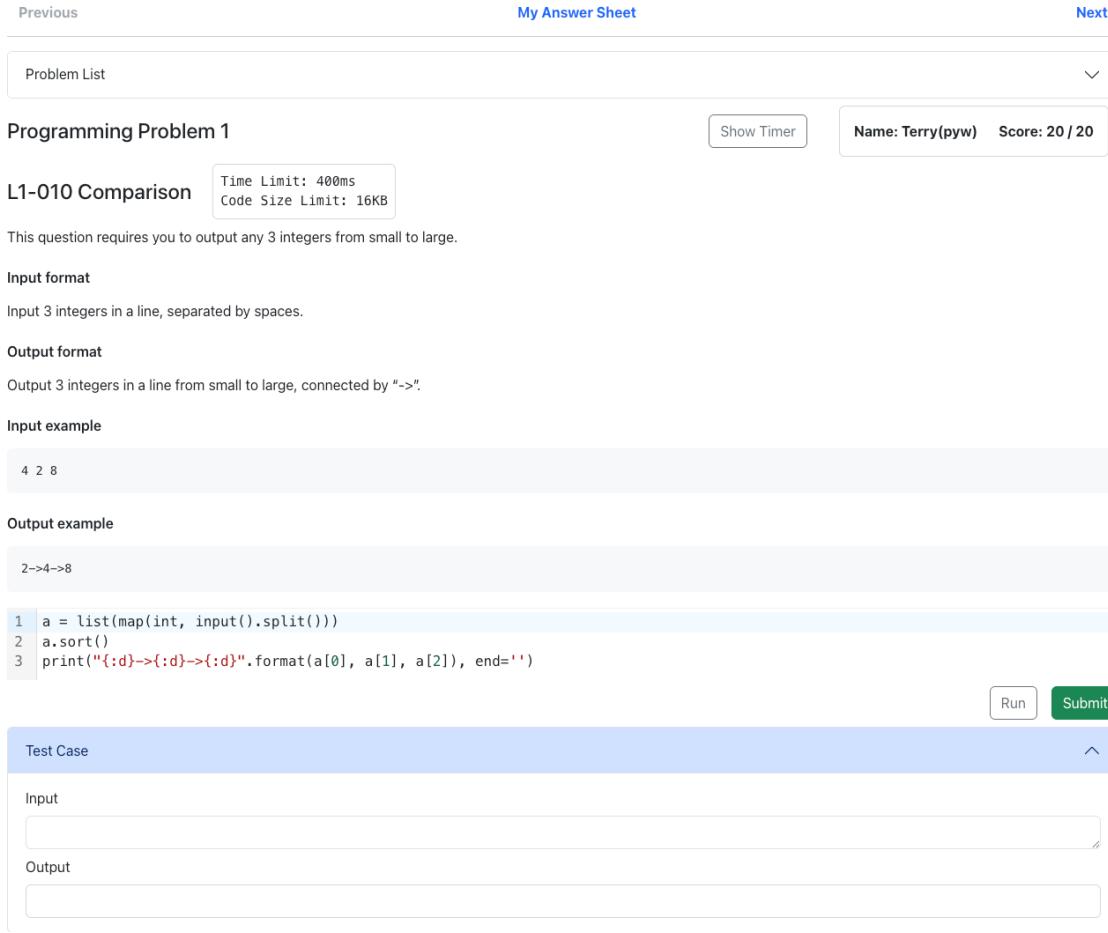
```
1 a = list(map(int, input().split()))
2 a.sort()
3 print("{:d}->{:d}->{:d}".format(a[0], a[1], a[2]), end='')
```

Run      Submit

Test Case

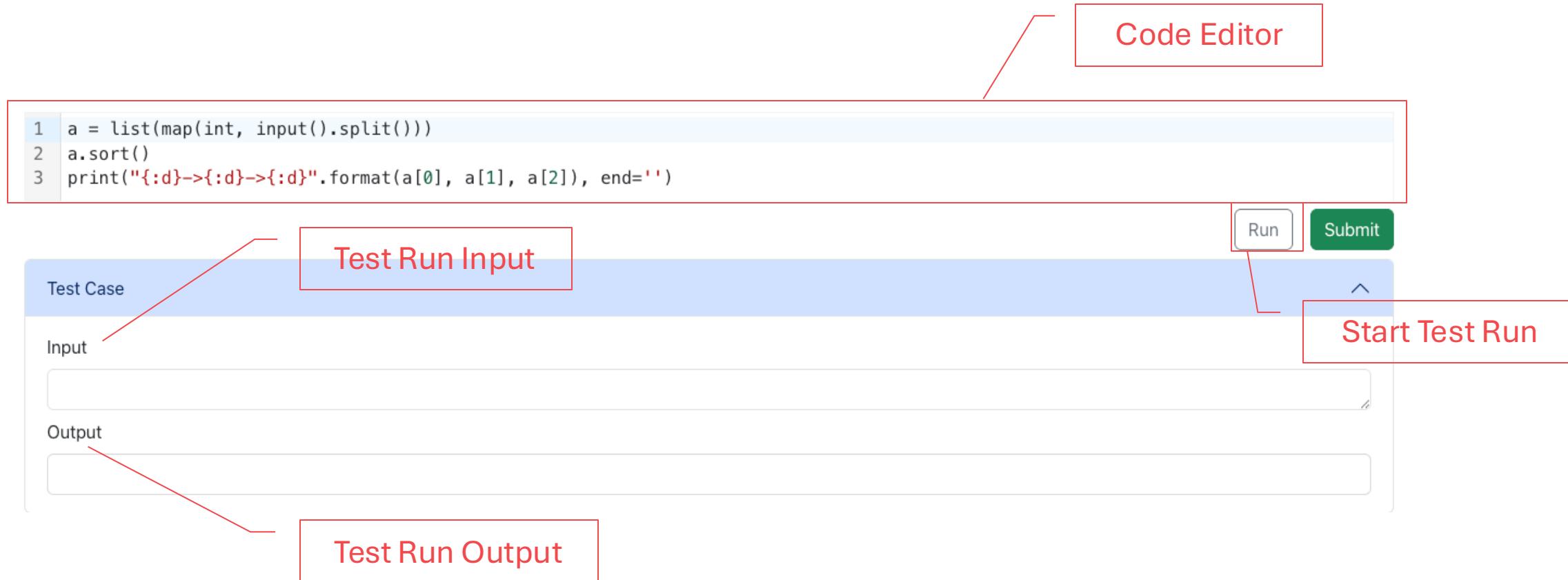
Input

Output



## ➤ Programming Problem Answering Page

## 5.5 PROBLEM SET STUDENT



➤ Programming Problem Answering Page

## 5.5 PROBLEM SET STUDENT

```
1 print("Hello World!", end='')
```

Run Submit

Submission Result: Accepted Test Case Pass Count: 1 / 1

Test Case

Input

Output

➤ Accepted

```
1 print("Hello World!")
```

Run Submit

Submission Result: Wrong Answer Test Case Pass Count: 0 / 1

Test Case

Input

Output

Expected Output:  
Hello World!/  
Actual Output:  
Hello World!  
/

The actual output has an  
unwanted trailing newline

➤ Wrong Answer

Expected Output:  
Hello World!/  
Actual Output:

Hello World!  
/



## 5.5 PROBLEM SET STUDENT

A screenshot of a code editor interface. At the top, there is a code block containing two lines of Python code:

```
1 a += 1
2 print(a)
```

The second line, "print(a)", is highlighted with a red box and has a red arrow pointing to it from the text "Syntax Error" below. Below the code block are buttons for "Run" and "Submit".

Submission Result: Wrong Answer Test Case Pass Count: 0 / 1

Test Case

Input

Output

Runtime or Syntax Error:  
Traceback (most recent call last):  
File "<string>", line 1, in <module>  
NameError: name 'a' is not defined

➤ Syntax Error

```
1 a += 1
2 print(a)
```

NameError: name 'a' is not defined

A screenshot of a code editor interface. At the top, there is a code block containing five lines of Python code:

```
1 s = 0
2 for i in range(0, 1000):
3 for j in range(0, 1000):
4 for k in range(0, 1000):
5 s = s + i * j * k
```

The fifth line, "s = s + i \* j \* k", is highlighted with a red box and has a red arrow pointing to it from the text "Time Limit Exceeded" below. Below the code block are buttons for "Run" and "Submit".

Submission Result: Wrong Answer Test Case Pass Count: 0 / 1

Test Case

Input

Output

➤ Time Limit Exceeded

Output

Time Limit Exceeded

## 5.6 PROBLEM SET TEACHER

### ➤ Problem Set Transcript

- Problem Set Info**
- Student Transcripts**
- Objective Problem Statistics**
- Programming Problem Statistics**

Entry Exam - Transcript

Back Refresh

Problem Set Information

Author: Jerry(pyxc)  
Start Time: 2025/1/15 19:00:00  
End Time: 2025/1/15 21:35:00  
Duration: 30 minutes

Problem Set Status: The problem set has ended  
Objective Problems: 3  
Programming Problems: 2  
Participating Students: 3

Student Transcripts Export to Excel

| Absentees: 0 |          | Participants: 3 |               | Participants Average Score: 39 / 56 |                                         |
|--------------|----------|-----------------|---------------|-------------------------------------|-----------------------------------------|
| Rank         | Username | Name            | Permission    | Answering Start Time                | Score                                   |
| 1            | 02       | Jerry(pyxc)     | Teacher       | 2024/4/18 14:11:34                  | <div style="width: 85%;"></div> 48 / 56 |
| 2            | 01       | Terry(pyw)      | Administrator | 2024/4/18 10:13:19                  | <div style="width: 65%;"></div> 36 / 56 |
| 3            | 03       | Larry(123)      | Student       | 2024/4/15 18:00:47                  | <div style="width: 60%;"></div> 33 / 56 |

Objective Problem Statistics

| # | Description                                                                         | Participants | Correct Count | Correct Rate                              |
|---|-------------------------------------------------------------------------------------|--------------|---------------|-------------------------------------------|
| 1 | <a href="#">The maximum flow from \$s\$ to \$t\$ in the network given in the...</a> | 3            | 2             | <div style="width: 66.67%;"></div> 66.67% |
| 2 | <a href="#">**Single-choice question** Which of the following functions is...</a>   | 3            | 3             | <div style="width: 100%;"></div> 100%     |
| 3 | <a href="#">**Single-choice question** The time efficiency of the followin...</a>   | 3            | 2             | <div style="width: 66.67%;"></div> 66.67% |

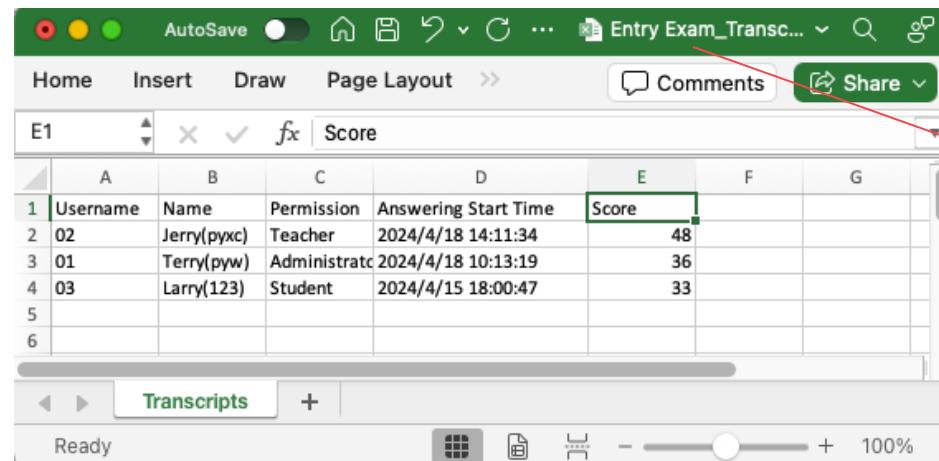
Programming Problem Statistics

| # | Title                              | Participants | Correct Count | Correct Rate                              |
|---|------------------------------------|--------------|---------------|-------------------------------------------|
| 1 | <a href="#">L1-010 Comparison</a>  | 3            | 2             | <div style="width: 66.67%;"></div> 66.67% |
| 2 | <a href="#">L1-001 Hello World</a> | 3            | 2             | <div style="width: 66.67%;"></div> 66.67% |

## 5.6 PROBLEM SET TEACHER

| Student Transcripts |          |                                     |               |                      |                                                                                  |                            |
|---------------------|----------|-------------------------------------|---------------|----------------------|----------------------------------------------------------------------------------|----------------------------|
| Absentees Count     |          |                                     | Average Score |                      |                                                                                  |                            |
| Participants: 3     |          | Participants Average Score: 39 / 56 |               |                      |                                                                                  |                            |
| Rank                | Username | Name                                | Permission    | Answering Start Time | Score                                                                            | Operation                  |
| 1                   | 02       | Jerry(pyxc)                         | Teacher       | 2024/4/18 14:11:34   | <div style="width: 85%; background-color: #0072BD; height: 10px;"></div> 48 / 56 | <a href="#">Transcript</a> |
| 2                   | 01       | Terry(pyw)                          | Administrator | 2024/4/18 10:13:19   | <div style="width: 65%; background-color: #0072BD; height: 10px;"></div> 36 / 56 | <a href="#">Transcript</a> |
| 3                   | 03       | Larry(123)                          | Student       | 2024/4/15 18:00:47   | <div style="width: 60%; background-color: #0072BD; height: 10px;"></div> 33 / 56 | <a href="#">Transcript</a> |

Student Ranking



The screenshot shows a Microsoft Excel spreadsheet titled "Entry Exam\_Transc...". The table has columns: Username, Name, Permission, Answering Start Time, and Score. The data is as follows:

|   | A        | B           | C             | D                    | E     | F | G |
|---|----------|-------------|---------------|----------------------|-------|---|---|
| 1 | Username | Name        | Permission    | Answering Start Time | Score |   |   |
| 2 | 02       | Jerry(pyxc) | Teacher       | 2024/4/18 14:11:34   | 48    |   |   |
| 3 | 01       | Terry(pyw)  | Administrator | 2024/4/18 10:13:19   | 36    |   |   |
| 4 | 03       | Larry(123)  | Student       | 2024/4/15 18:00:47   | 33    |   |   |
| 5 |          |             |               |                      |       |   |   |
| 6 |          |             |               |                      |       |   |   |

Excel Sheet Transcript

Correct Rate

## 5.6 PROBLEM SET TEACHER

### Objective Problem Statistics

| # | Description                                                                         | Participants | Correct Count | Correct Rate                              |
|---|-------------------------------------------------------------------------------------|--------------|---------------|-------------------------------------------|
| 1 | <a href="#">The maximum flow from \$s\$ to \$t\$ in the network given in the...</a> | 3            | 2             | <div style="width: 66.67%;"></div> 66.67% |
| 2 | <a href="#">**Single-choice question** Which of the following functions is...</a>   | 3            | 3             | <div style="width: 100%;"></div> 100%     |
| 3 | <a href="#">**Single-choice question** The time efficiency of the followin...</a>   | 3            | 2             | <div style="width: 66.67%;"></div> 66.67% |

### Programming Problem Statistics

| # | Title                              | Participants | Correct Count | Correct Rate                              |
|---|------------------------------------|--------------|---------------|-------------------------------------------|
| 1 | <a href="#">L1-010 Comparison</a>  | 3            | 2             | <div style="width: 66.67%;"></div> 66.67% |
| 2 | <a href="#">L1-001 Hello World</a> | 3            | 2             | <div style="width: 66.67%;"></div> 66.67% |

## 5.6 PROBLEM SET TEACHER

| Student Transcripts |          |             |                 |                      |                                                                                                                  |                            | <a href="#">Export to Excel</a> |
|---------------------|----------|-------------|-----------------|----------------------|------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------|
| Absentees: 0        |          |             | Participants: 3 |                      | Participants Average Score: 39 / 56                                                                              |                            |                                 |
| Rank                | Username | Name        | Permission      | Answering Start Time | Score                                                                                                            | Operation                  |                                 |
| 1                   | 02       | Jerry(pyxc) | Teacher         | 2024/4/18 14:11:34   | <div style="width: 85%;"><div style="width: 100%; background-color: #007bff; height: 10px;"></div></div> 48 / 56 | <a href="#">Transcript</a> |                                 |
| 2                   | 01       | Terry(pyw)  | Administrator   | 2024/4/18 10:13:19   | <div style="width: 65%;"><div style="width: 100%; background-color: #007bff; height: 10px;"></div></div> 36 / 56 | <a href="#">Transcript</a> |                                 |
| 3                   | 03       | Larry(123)  | Student         | 2024/4/15 18:00:47   | <div style="width: 60%;"><div style="width: 100%; background-color: #007bff; height: 10px;"></div></div> 33 / 56 | <a href="#">Transcript</a> |                                 |

[View Student's Answer Sheet](#)

## 5.6 PROBLEM SET TEACHER

Problem Set Info

Problem Set Answering Status

Answer Sheet

Final Score

### Entry Exam - Larry(123)'s Transcript

#### Problem Set Information

Author: Jerry(pyxc)  
Start Time: 2025/1/15 19:00:00  
End Time: 2025/1/15 21:35:00  
Duration: 30 minutes

#### Answering Status

Problem Set Status: The problem set has ended  
Answering Start Time: 2024/4/15 18:00:47

#### Student's Answer Sheet

Student Username: 03

Student Name: Larry(123)

Final Score: 33 / 56

Objective Problems: 3

| # | Description                                                    | Score | Status   |
|---|----------------------------------------------------------------|-------|----------|
| 1 | <a href="#">The maximum flow from \$\$ to \$t\$ in the ...</a> | 0 / 8 | Answered |
| 2 | <a href="#">**Single-choice question** Which of the f...</a>   | 5 / 5 | Answered |
| 3 | <a href="#">**Single-choice question** The time effici...</a>  | 8 / 8 | Answered |

Programming Problems: 2

| # | Title                              | Score   | Status   |
|---|------------------------------------|---------|----------|
| 1 | <a href="#">L1-010 Comparison</a>  | 20 / 20 | Answered |
| 2 | <a href="#">L1-001 Hello World</a> | 0 / 15  | Answered |

Click on the Problem Link to View Student's Answer

➤ View Student's Answer Sheet

## 5.6 PROBLEM SET TEACHER

The image shows two side-by-side screenshots of a digital platform for teacher grading student answers.

**Left Screenshot (Objective Problem 3):**

- Header:** Previous, Larry(123)'s Answer Sheet, Next.
- Section:** Problem List.
- Score Box:** Score of This Problem (red box).
- Student Info:** Username: 03 Name: Larry(123) Score: 8 / 8.
- Text:** The function is as follows:

```
def changeList(list):
 list.append("end")
 print("list",list)
Call Function
strs =["1","2"]
changeList(strs)
print("strs",strs)
```
- Text:** The correct output for the values of `strs` and `list` is (C).
- Options:** A. `strs ["1","2"]`, B. `list["1","2"]`, C. `list ["1","2","end"]`, D. `strs ["1","2","end","1","2"]`.
- Buttons:** Student's Answer (radio button C), Correct Answer (radio button C).
- Text:** Student's Answer (red box), Correct Answer (red box).

**Right Screenshot (Programming Problem 2):**

- Header:** Previous, Larry(123)'s Answer Sheet, Next.
- Section:** Problem List.
- Score Box:** Score of This Problem (red box).
- Student Info:** Username: 03 Name: Larry(123) Score: 0 / 15 Test Case Passed: 0 / 1.
- Section:** Programming Problem 2.
- Problem Description:** L1-001 Hello World Time Limit: 150ms Code Size Limit: 16KB.
- Text:** This super simple question does not require any input. You just need to output the famous phrase "Hello World!" in one line.
- Text:** Input sample: None.
- Text:** Output sample: Hello World!
- Text:** Student's Code Answer (radio button 1 `print("Hello World!")`).
- Text:** Student's Code Answer (red box).

**Annotations:**

- A red bracket labeled "Student's Objective Problem Answer" spans from the "Student's Answer" box to the "Correct Answer" box.
- A red bracket labeled "Student's Programming Problem Answer" spans from the "Student's Code Answer" box to the "Correct Answer" box.

## **6. PRACTICES FOLLOWED**

---

**6.1 Development Team**

---

**6.2 Version Control System**

---

**6.3 Agile Development**

---

**6.4 Testing**

---

**6.5 Deployment – Address Midterm Feedback**

---

**6.6 Pull Requests**

---

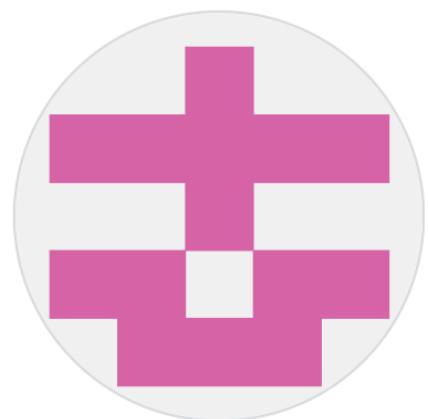
**6.7 Regular Communication**

## 6.1 DEVELOPMENT TEAM



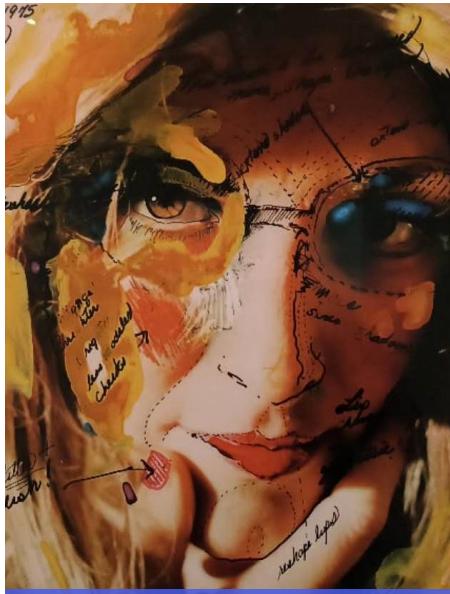
**Yulin  
Wu**

Frontend



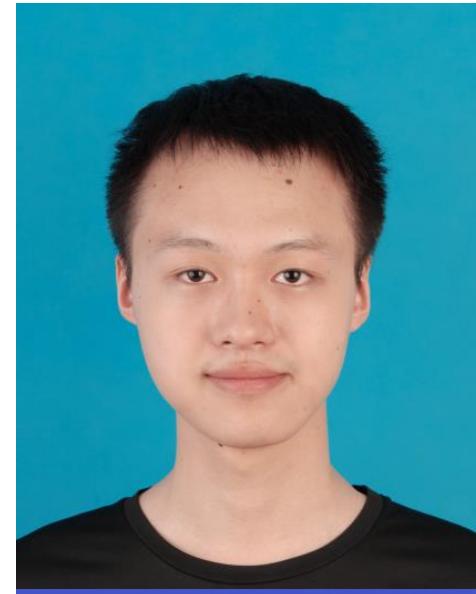
**Mingchen  
Cai**

Backend



**Hanzheng Henry  
Qiu**

Backend



**Zanhong  
Liu**

Backend

## 6.1 DEVELOPMENT TEAM

Mar 20, 2025

Commits

main ▾

Commits on Mar 20, 2025

- Merge pull request #88 from Jasoncmc2002/78-deploy-database-to-cloud  
wuyulin2002 authored last week · ✓ 1/1
- ADD DATABASE MIGRATION CODE  
wuyulin2002 committed last week · ✓ 1/1
- Merge pull request #80 from Jasoncmc2002/front-end-master  
wuyulin2002 authored last week · ✓ 1/1
- Merge pull request #81 from Jasoncmc2002/front-end-dev-sprint7  
wuyulin2002 authored last week · ✓ 1/1

Mar 20, 2025

Commits

main ▾

Commits on Mar 17, 2025

- Update README.md  
Jasoncmc2002 authored 2 weeks ago · ✓ 1/1
- Merge pull request #74 from Jasoncmc2002/back-end-dev-sprint7  
Jasoncmc2002 authored 2 weeks ago · ✓ 1/1
- Merge pull request #73 from Jasoncmc2002/backend-dev2  
Jasoncmc2002 authored 2 weeks ago · ✓ 2/2
- Merge pull request #72 from Jasoncmc2002/back-end-dev1  
Jasoncmc2002 authored 2 weeks ago · ✘ 0/1

Mar 17, 2025

Commits

main ▾

Commits on Mar 20, 2025

- Merge pull request #87 from Jasoncmc2002/back-end-master  
ironQHZ authored last week · ✓ 1/1
- Fix bug: backend messages  
ironQHZ committed last week · ✓ 2/2
- Fix bug: backend messages  
ironQHZ committed last week
- Merge pull request #84 from Jasoncmc2002/back-end-master  
ironQHZ authored last week · ✓ 1/1

Mar 20, 2025

Commits

main ▾

Commits on Mar 16, 2025

- update getOneProblemSetInfo, getAllStudentRecord, getAllObjectiveProblemRecord for problemSetTeacher  
zhanhongliu2001 committed 2 weeks ago

Commits on Mar 10, 2025

- update getActiveProblemSet, getAllProblemSet, getOne problemSet, startProblemSet  
zhanhongliu2001 committed 3 weeks ago

Commits on Mar 9, 2025

- Merge branch 'back-end-dev-sprint5' into back-end-dev1  
zhanhongliu2001 committed 3 weeks ago

Mar 16, 2025

## 6.2 VERSION CONTROL SYSTEM

The screenshot shows a GitHub repository page for 'ECE651'. At the top, there's a navigation bar with links for Code, Issues (4), Pull requests, Actions, Projects (5), Wiki, Security, and Insights. Below the navigation is a search bar and a set of icons. The main content area shows a list of commits from 'wuyulin2002' and other contributors. On the right side, there are sections for About (listing README, Activity, stars, forks, and releases), Packages (no packages published), and Contributors (listing four users: wuyulin2002, ironQHZ, Jasoncmc2002, and zanhongliu2001). A Languages section at the bottom shows a bar chart with JavaScript at 50.5%, Java at 49.3%, and Other at 0.2%.

We use GitHub for:

- Source Code Management
- Project Management

## 6.3 AGILE DEVELOPMENT

The screenshot shows a GitHub repository interface for the user Jasoncmc2002 under the project ECE651. The 'Issues' tab is selected, displaying a list of 7 open and 14 closed issues. The search bar at the top contains the query 'is:issue'. The issues listed are:

- #78 · Deploy Database to Cloud [Backend]
- #77 · Deploy Frontend to Cloud [Frontend]
- #76 · Prepare Final Review Presentation [documentation]
- #75 · Deploy Backend to Cloud [Backend]
- #62 · Problem Set Teacher Frontend [Frontend]
- #61 · Problem Set Teacher Backend [Backend]

Each issue includes a checkbox, the issue number, the title, a label, and a small profile picture of the author.

➤ GitHub Issues

## 6.3 AGILE DEVELOPMENT

Problem Set Teacher Backend #61

Closed #74 (+3)

wuyulin2002 opened 2 weeks ago

Problem Set Teacher Backend

[TOC]

### User Story Related

As a teacher,  
I want to access my problem set transcript,  
so that I can view all student record, all problem record with student performance data, and one student answer.

As a administrator,  
I want to access all problem set transcript,  
so that I can view all student record, all problem record with student performance data, and one student answer.

### Database Structure

For this sprint, we will need to use almost all the tables defined in the database design, as shown in the following physical design model.

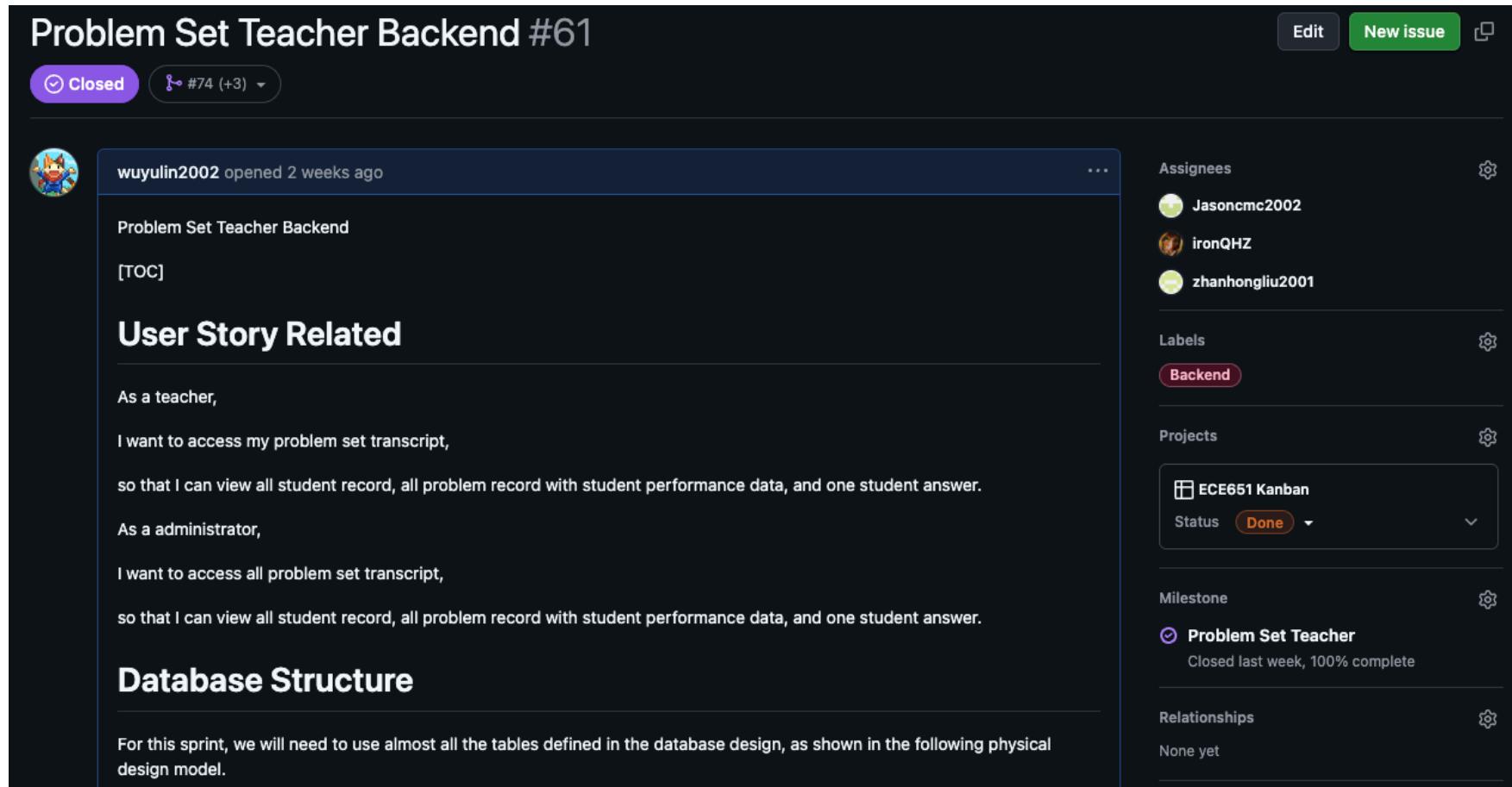
Assignees: Jasoncmc2002, ironQHZ, zanhongliu2001

Labels: Backend

Projects: ECE651 Kanban (Status: Done)

Milestone: Problem Set Teacher (Closed last week, 100% complete)

Relationships: None yet



➤ User Story

## 6.3 AGILE DEVELOPMENT

| 1. user    |                           |           |                                                                        |
|------------|---------------------------|-----------|------------------------------------------------------------------------|
| Field      | Type                      | Constrain | Field Comments                                                         |
| user_id    | Integer                   | PK        | User entity primary key                                                |
| username   | Variable characters (100) | Not Null  | Username, usually a combination of numbers and/or letters              |
| name       | Variable characters (100) | Not Null  | User's real name                                                       |
| password   | Variable characters (100) | Not Null  | Password, stored in ciphertext                                         |
| permission | Integer                   | Not Null  | User permissions, 0 for students, 1 for teachers, 2 for administrators |
| photo      | Text                      |           | User profile data, stored in Base64 encoding, no more than 50KB        |

➤ DB Table Structure Definition

### API Requirements

#### 1. Get One Problem Set Transcript Information

- URL: `/problem_set/teacher/one_problem_set_info/`
- Type: `GET`
- Bearer Authorization: YES
- Input Data:
  - `problemSetId` : problem set ID you want to get with teacher privilege
- Response:
  - `error_message` : if there is no problem with the submitted parameters and access permissions, `success` will be returned. Otherwise, error information related to the request will be returned.
  - `problem_set_id` : problem set ID
  - `ps_name` : problem set name
  - `ps_author_id` : problem set author ID
  - `ps_author_name` : problem set author name
  - `ps_start_time` : problem set start time, format like `2025-02-15T17:47`
  - `ps_end_time` : problem set end time, format like `2025-02-15T17:47`
  - `duration` : problem set duration; 0 for assignments, other positive integers for exams
  - `ps_status_message` : descriptive status information about this problem set; either `The problem set has not started`, `The problem set has ended`, or `The problem set has started`.
  - `ps_total_score` : problem set total score
- Comment:
  - Teachers cannot get transcript from problem set created by others; administrators do not have such limitation.
  - Problem status are defined in the Notes at the bottom of this doc.

➤ API Definition

# 6.3 AGILE DEVELOPMENT

The screenshot shows a Kanban board interface with the following details:

- Header:** Jasoncmc2002 / Projects / ECE651 Kanban
- Search Bar:** Type ⌂ to search
- Top Buttons:** Add status update, Discard, Save
- Columns:**
  - Backlog:** 2 / 5 Estimate: 0. Sub-tasks: Prepare Final Review Presentation (P0 L), Pull Request Template (P2 XL).
  - Ready:** 3 Estimate: 0. Sub-tasks: Deploy Backend to Cloud (P0 XL), Deploy Frontend to Cloud (P0 XL), Deploy Database to Cloud (P0 M).
  - In progress:** 3 / 3 Estimate: 0. Sub-tasks: Fix Backend Message Standard (P0 S), Complete Issue #62: Merge to Master, Fix a Typo in Sprint.
  - In review:** 2 / 5 Estimate: 0. Sub-tasks: Problem Set Teacher Backend (P0 XL), Problem Set Teacher Frontend (P0 XL).
  - Done:** 63 Estimate: 0. Sub-tasks: Problem Set Student Frontend (P0 XL), Problem Set Student Backend (P0 XL), Set Management Frontend (P0 XL), Set Management Backend (P0 XL).
- Bottom Buttons:** + Add item

➤ Kanban Board

## 6.4 TESTING

| Element ^                | Class, %   | Method, %    | Line, %        | Branch, %     |
|--------------------------|------------|--------------|----------------|---------------|
| ` service                | 100% (1/1) | 100% (6/6)   | 100% (249/249) | 96% (62/64)   |
| ` impl.setManage         | 100% (1/1) | 100% (6/6)   | 100% (249/249) | 96% (62/64)   |
| ` SetManageServiceImpl   | 100% (1/1) | 100% (6/6)   | 100% (249/249) | 96% (62/64)   |
| ` utils                  | 100% (1/1) | 80% (4/5)    | 76% (20/26)    | 50% (1/2)     |
| ` service                | 100% (7/7) | 87% (21/24)  | 88% (322/364)  | 70% (108/154) |
| ` impl                   | 100% (7/7) | 87% (21/24)  | 88% (322/364)  | 70% (108/154) |
| ` utils                  | 100% (1/1) | 72% (8/11)   | 72% (8/11)     | 0% (0/14)     |
| ` UserDetailsServiceImpl | 100% (1/1) | 100% (1/1)   | 83% (5/6)      | 50% (1/2)     |
| ` user.account           | 100% (5/5) | 100% (12/12) | 89% (309/347)  | 77% (107/138) |
| ` RegisterServiceImpl    | 100% (1/1) | 100% (1/1)   | 88% (37/42)    | 67% (19/28)   |
| ` LoginServiceImpl       | 100% (1/1) | 100% (1/1)   | 100% (9/9)     | 100% (0/0)    |
| ` InfoServiceImpl        | 100% (1/1) | 100% (2/2)   | 100% (22/22)   | 100% (2/2)    |
| ` UpdateServiceImpl      | 100% (1/1) | 100% (3/3)   | 97% (82/84)    | 89% (25/28)   |
| ` AdminServiceImpl       | 100% (1/1) | 100% (5/5)   | 83% (159/190)  | 76% (61/80)   |
| ` user.account           | 100% (0/0) | 100% (0/0)   | 100% (0/0)     | 100% (0/0)    |
| ` mapper                 | 100% (0/0) | 100% (0/0)   | 100% (0/0)     | 100% (0/0)    |
| ` pojo                   | 100% (1/1) | 100% (9/9)   | 100% (9/9)     | 11% (6/54)    |

| Element ^                           | Class, %   | Method, %    | Line, %        | Branch, %      |
|-------------------------------------|------------|--------------|----------------|----------------|
| ` problemManage                     | 100% (3/3) | 92% (12/13)  | 82% (441/5...  | 70% (149/21... |
| ` ObjectiveProblemManageServiceImpl | 100% (1/1) | 80% (4/5)    | 68% (134/19... | 53% (43/80)    |
| ` ProgrammingManageServiceImpl      | 100% (1/1) | 100% (5/5)   | 86% (206/2...  | 78% (74/94)    |
| ` TestCaseManageServiceImpl         | 100% (1/1) | 100% (3/3)   | 100% (101/1... | 84% (32/38)    |
| ` problemSet                        | 100% (2/2) | 85% (17/2... | 85% (122/...   | 80% (331/...   |
| ` ProblemSetServiceImpl             | 100% (1/1) | 100% (11/... | 94% (786/...   | 87% (224/...   |
| ` ProblemSetTeacherServiceImpl      | 100% (1/1) | 66% (6/9)    | 72% (440/...   | 69% (107/...   |

| File              | %Stmts | %Branch | %Funcs | %Lines |
|-------------------|--------|---------|--------|--------|
| All files         | 73.22  | 65.87   | 73.91  | 73.26  |
| Home.jsx          | 87.5   | 64.28   | 75     | 87.5   |
| Login.jsx         | 53.65  | 50      | 60     | 53.65  |
| Navbar.jsx        | 95.23  | 90      | 100    | 95.23  |
| NotFound.jsx      | 100    | 100     | 100    | 100    |
| ProblemManage.jsx | 100    | 100     | 100    | 100    |
| ProblemSet.jsx    | 78.49  | 50      | 68.42  | 69.49  |
| Register.jsx      | 96.29  | 100     | 90     | 96.29  |
| SetManage.jsx     | 100    | 100     | 100    | 100    |
| UserManage.jsx    | 58.86  | 50.68   | 61.7   | 59.28  |
| UserProfile.jsx   | 83.11  | 72      | 86.95  | 83.11  |

Test Suites: 22 passed, 22 total  
 Tests: 155 passed, 155 total  
 Snapshots: 0 total  
 Time: 2.646 s

➤ Unit Test – Junit

➤ Unit Test – Jest

## 6.4 TESTING

The screenshot shows the Postman application interface. At the top, there are several environment tabs: POST localhost:8080/c, PUT update\_Problem..., POST add\_problem\_to..., GET get\_programming..., and GET get\_problems\_in... . Below this is a search bar and a 'No environment' dropdown.

The main area shows a 'PUT' request to 'localhost:8080/set\_manage/'. The 'Body' tab is selected, showing the following JSON payload:

```
1 {
2 "error_message": "success"
3 }
```

The 'Params' tab shows the following key-value pairs:

| Key          | Value               | Description |
|--------------|---------------------|-------------|
| problemSetId | 1                   |             |
| psName       | Mock Test           |             |
| psStartTime  | 2007-12-03T10:15:30 |             |
| psEndTime    | 2007-12-03T10:25:40 |             |
| duration     | 5                   |             |

The 'Cookies' tab is empty. At the bottom, the response is shown as '200 OK' with a duration of 72 ms and a size of 476 B. The 'Save Response' button is visible.

➤ API Testing – Postman

The screenshot shows the Selenium IDE interface with the project name 'ECE651-Group-Frontend-UI-Test'. The URL is set to 'http://localhost:3000/'. The test log contains the following steps:

| Step | Command | Target            | Value |
|------|---------|-------------------|-------|
| 8    | ✓ click | linkText=Sign In  |       |
| 9    | ✓ type  | id=username       | 01    |
| 10   | ✓ type  | id=password       | pyw   |
| 11   | ✓ click | css=.btn          |       |
| 12   | ✓ click | linkText=Sign Out |       |

The 'Log' section shows the execution details for each step. The final message is "'Sign Out' completed successfully".

➤ UI Testing – Selenium

## 6.4 TESTING

The screenshot shows the GitHub Actions dashboard for the repository Jasoncmc2002/ECE651. The left sidebar is titled 'Actions' and includes sections for 'All workflows', 'Backend CI', 'Node.js CI', 'Management', 'Caches', 'Attestations', 'Runners', 'Usage metrics', and 'Performance metrics'. The main area is titled 'All workflows' and shows '194 workflow runs'. A search bar at the top right says 'Type ⌘ to search'. Below the search bar are filters for 'Event', 'Status', 'Branch', and 'Actor'. The workflow runs are listed in descending order of age:

| Workflow Run                                                      | Branch          | Time Ago   | Actor        |
|-------------------------------------------------------------------|-----------------|------------|--------------|
| Merge pull request #88 from Jasoncmc2002/78-deploy-database-to... | main            | 5 days ago | wuyulin2002  |
| modify cors setting for backend                                   | back-end-master | last week  | Jasoncmc2002 |
| Merge pull request #87 from Jasoncmc2002/back-end-master          | main            | last week  | ironQHZ      |
| Fix bug: backend messages                                         | back-end-master | last week  | ironQHZ      |
| Merge pull request #84 from Jasoncmc2002/back-end-master          | main            | last week  | ironQHZ      |

➤ GitHub Actions for CI and Auto Testing

## 6.5 DEPLOYMENT – ADDRESS MIDTERM FEEDBACK

| Instances (2) <a href="#">Info</a>                                                      |                          | Last updated less than a minute ago | <a href="#">Connect</a>                                    | <a href="#">Instance state ▾</a>    | <a href="#">Actions ▾</a>        | <a href="#">Launch instances</a> | ▼                   |
|-----------------------------------------------------------------------------------------|--------------------------|-------------------------------------|------------------------------------------------------------|-------------------------------------|----------------------------------|----------------------------------|---------------------|
| <input type="text"/> <a href="#">Find Instance by attribute or tag (case-sensitive)</a> |                          | <a href="#">All states ▾</a>        |                                                            |                                     |                                  |                                  |                     |
| <a href="#">Instance state = running</a> <a href="#">X</a>                              |                          | <a href="#">Clear filters</a>       |                                                            |                                     |                                  |                                  |                     |
| <input type="checkbox"/>                                                                | Name <a href="#">🔗</a> ▾ | Instance ID                         | Instance state ▾                                           | Instance type ▾                     | Status check                     | Alarm status                     | Availability Zone ▾ |
| <input type="checkbox"/>                                                                | ece651-server            | i-05c749c75c2e87d26                 | <span>✓ Running</span> <a href="#">✚</a> <a href="#">✚</a> | t2.micro                            | <span>✓ 2/2 checks passed</span> | <a href="#">View alarms +</a>    | us-east-1c          |
| <input type="checkbox"/>                                                                | ece651-server            | i-0a10f70d7e9ffae7f                 | <span>✓ Running</span> <a href="#">✚</a> <a href="#">✚</a> | t2.micro                            | <span>✓ 2/2 checks passed</span> | <a href="#">View alarms +</a>    | us-east-1c          |
| <a href="#">◀</a> <a href="#">▶</a>                                                     |                          |                                     |                                                            | <a href="#">◀</a> <a href="#">▶</a> |                                  |                                  |                     |

➤ AWS Servers

## 6.5 DEPLOYMENT – ADDRESS MIDTERM FEEDBACK

**Deployment 9**  
Deployed

Started at 3/19/2025, 10:53 PM Build duration 3 minutes 27 seconds Domain <https://front-end-master.d3hb73g4dd1rcg.amplifyapp.com> Repository ECE651:front-end-master Last commit migrate backend url to https

Build 3 minutes 19 seconds

Deploy 7 seconds

[Deployment history](#) [Deployed backend resources](#)

**Deployment history**  Search...

| Name         | Status   | Build duration       | Commit message               | Started at          |
|--------------|----------|----------------------|------------------------------|---------------------|
| Deployment 9 | Deployed | 3 minutes 27 seconds | migrate backend url to https | 3/19/2025, 10:53 PM |

➤ AWS Continuous Deployment (CD)

## 6.6 PULL REQUESTS

The screenshot shows a GitHub search results page for pull requests. The search bar at the top contains the query "is:pr is:closed". Below the search bar, there are filters for Labels (11) and Milestones (1), and a green button for "New pull request". A link to "Clear current search query, filters, and sorts" is also present.

The main table lists 64 closed pull requests. The columns include: checkbox, icon, status (0 Open, 64 Closed), title, author, label, projects, milestones, reviews, assignee, and sort. The first few entries are:

- Progress Issue #78** (documentation) by wuyulin2002 was merged 5 days ago. Status: Approved, 2 tasks done, Cloud Deployed.
- back-end-master** (Backend) by ironQHZ was merged last week. Status: Approved, 2 tasks done, Cloud Deployed.
- back-end-master** (Backend, bug) by ironQHZ was merged last week. Status: Approved, 2 tasks done, Cloud Deployed.
- Complete Issue #82** (Backend) by ironQHZ was merged last week. Status: Approved, 2 tasks done, Cloud Deployed.
- Fix a Typo in Sprint7** (Frontend) by wuyulin2002 was merged last week. Status: Approved.
- Complete Issue #62: Merge to Main** (Frontend) by wuyulin2002 was merged last week. Status: Approved, Problem Set T...
- Complete Issue #62** (Frontend) by wuyulin2002 was merged last week. Status: Approved.

➤ GitHub Pull Requests

## 6.6 PULL REQUESTS

Complete Issue #62 #79

Merged wuyulin2002 merged 18 commits into front-end-master from front-end-dev-sprint7 last week

Conversation 3 Commits 18 Checks 2 Files changed 6

wuyulin2002 commented last week • edited

Complete Issue #62

UI testing Problem Set Teacher and update some previous UI testing

Specific Changes:

- UI testing on All Record
- UI testing on One Record
- Update UI testing on Programming Problem Create etc.

Testing:

UI testing

Pre-Merge Checklist:

- This PR has been formatted using format. bash
- This PR includes a description of testing or justification of exemption

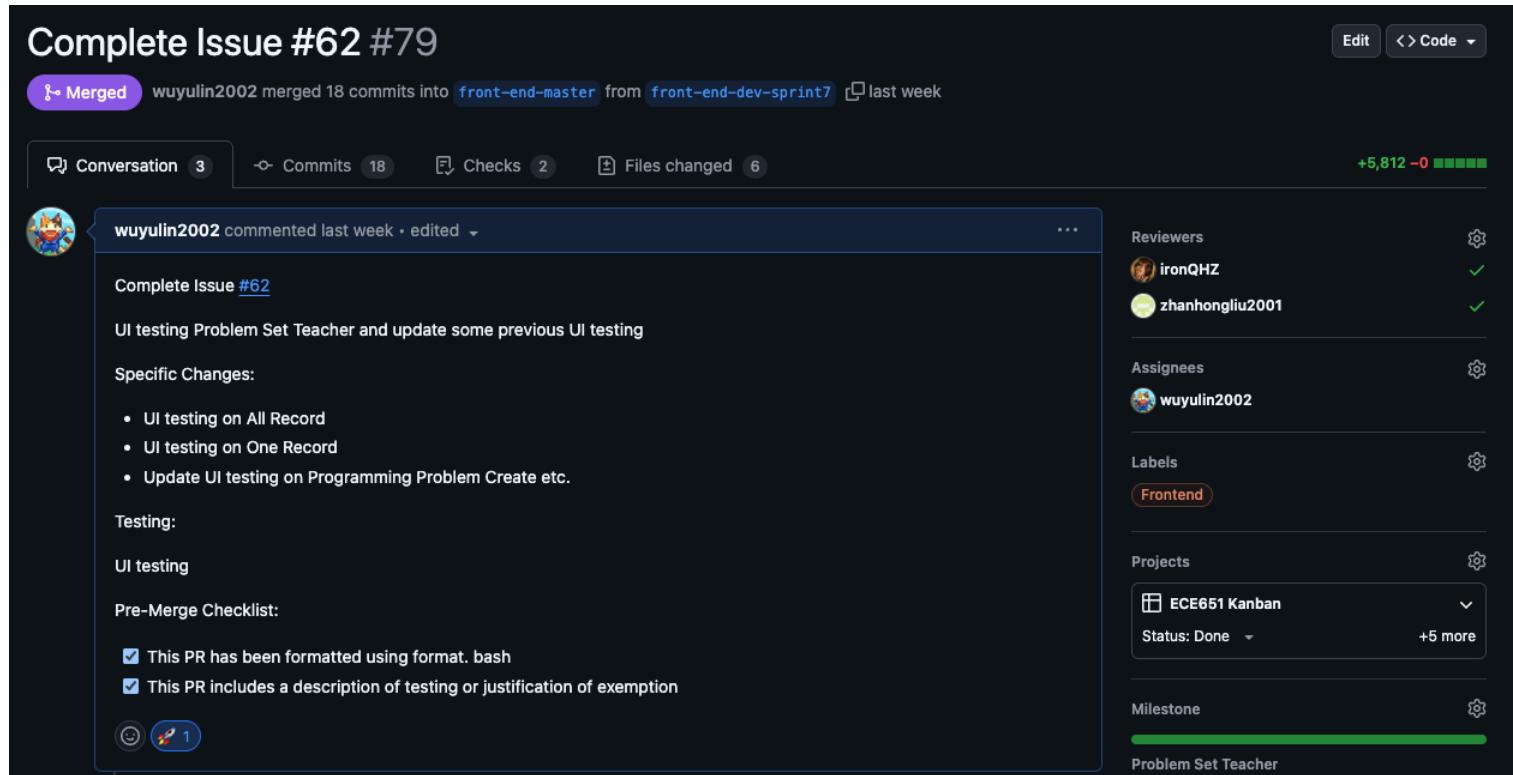
Reviewers: ironQHZ, zhanhongliu2001

Assignees: wuyulin2002

Labels: Frontend

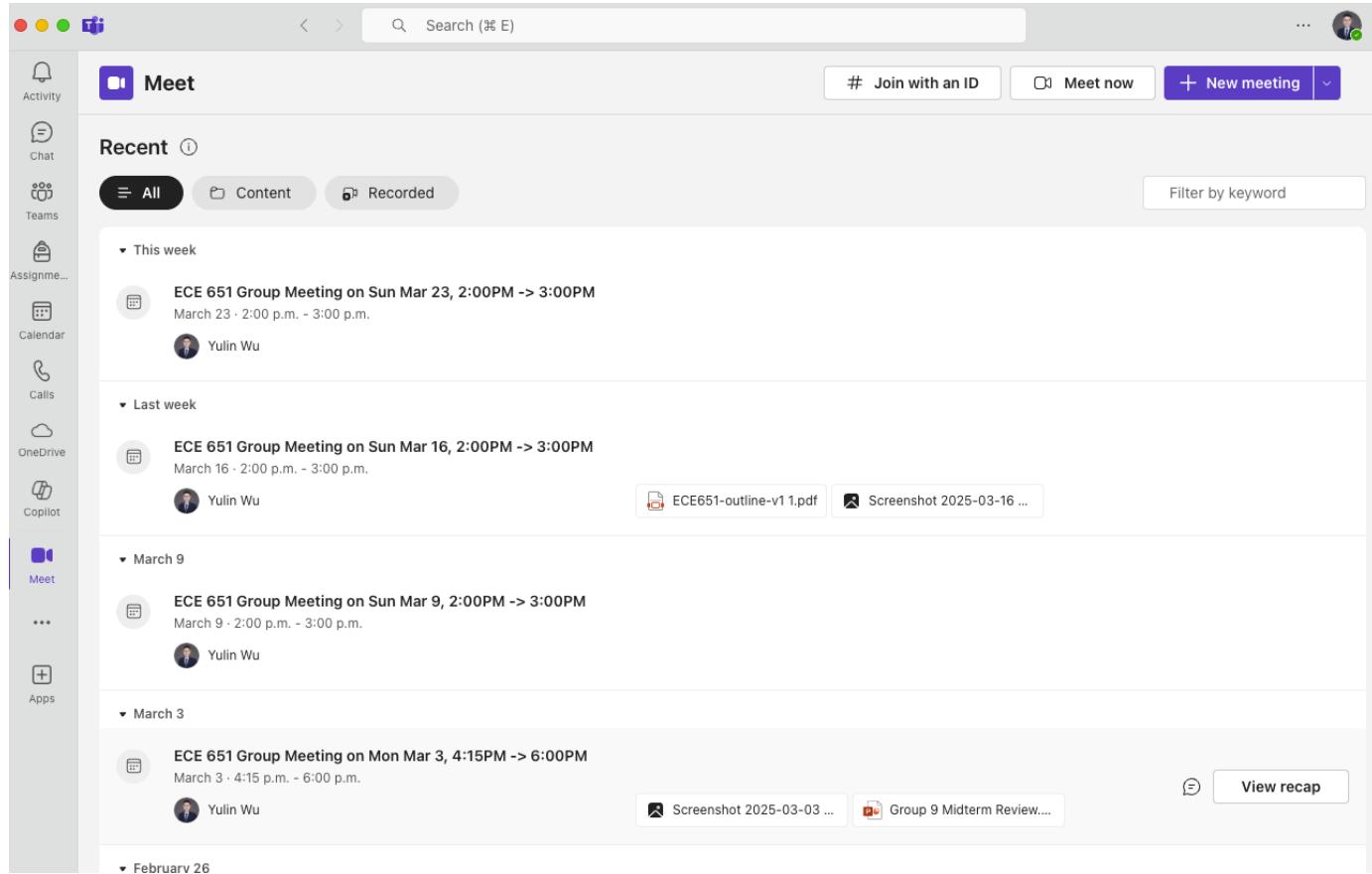
Projects: ECE651 Kanban (Status: Done)

Milestone: Problem Set Teacher



- At least one team member should review the pull request.

## 6.7 REGULAR COMMUNICATION



We held semi-weekly meetings on:

- Wednesdays after the lecture
- Sundays via MS Teams

discussing project design and everyone's progress.



## 6.7 REGULAR COMMUNICATION

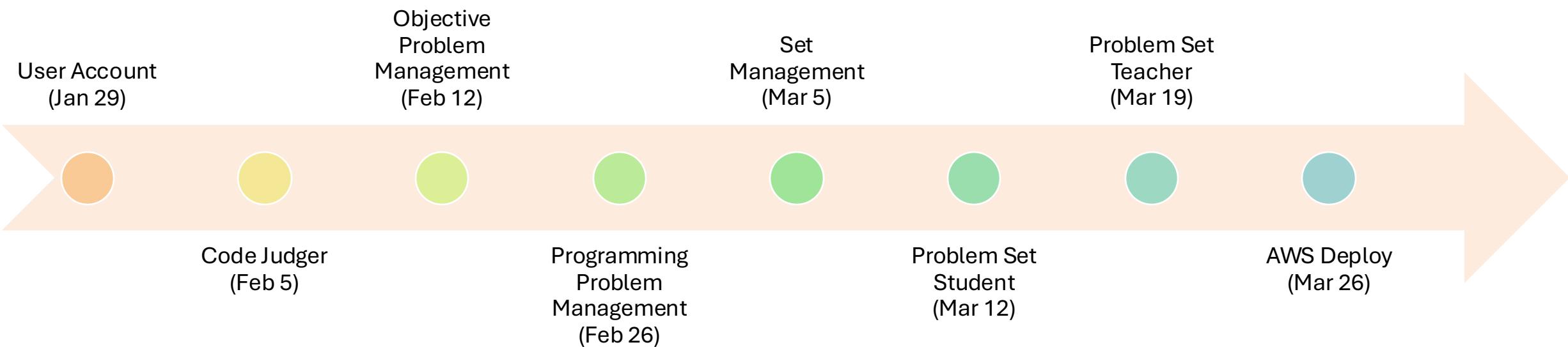
| Name                                | Date Modified            |
|-------------------------------------|--------------------------|
| Meeting Minutes W1-2 12JA2025.docx  | Jan 26, 2025 at 3:21PM   |
| Meeting Minutes W2-1 15JA2025.docx  | Jan 26, 2025 at 11:19 AM |
| Meeting Minutes W3-1 23JA2025.docx  | Jan 26, 2025 at 3:21PM   |
| Meeting Minutes W3-2 26JA2025.docx  | Jan 27, 2025 at 7:09 PM  |
| Meeting Minutes W4-1 29JA2025.docx  | Feb 2, 2025 at 9:52 PM   |
| Meeting Minutes W4-2 02FE2025.docx  | Feb 3, 2025 at 9:10 AM   |
| Meeting Minutes W5-1 05FE2025.docx  | Feb 5, 2025 at 5:18 PM   |
| Meeting Minutes W5-2 09FE2025.docx  | Feb 9, 2025 at 2:20 PM   |
| Meeting Minutes W6-1 13FE2025.docx  | Feb 13, 2025 at 4:13 PM  |
| Meeting Minutes W6-2 16FE2025.docx  | Feb 16, 2025 at 2:04 PM  |
| Meeting Minutes W8-1 26FE2025.docx  | Feb 26, 2025 at 12:57 PM |
| Meeting Minutes W8-2 3MR2025.docx   | Mar 4, 2025 at 7:53 PM   |
| Meeting Minutes W9-1 05MR2025.docx  | Mar 6, 2025 at 9:38 AM   |
| Meeting Minutes W9-2 09MR2025.docx  | Mar 9, 2025 at 9:14 PM   |
| Meeting Minutes W10-1 12MR2025.docx | Mar 12, 2025 at 5:34 PM  |
| Meeting Minutes W10-2 16MR2025.docx | Mar 16, 2025 at 2:54 PM  |
| Meeting Minutes W11-1 19MR2025.docx | Mar 23, 2025 at 2:37 PM  |
| Meeting Minutes W11-2 23MR2025.docx | Mar 23, 2025 at 2:38PM   |

➤ Meeting Minutes

The screenshot shows a Microsoft Word document titled "Meeting Minutes W8-1 26FE2025". The ribbon menu is visible at the top. The document contains three main sections: AGENDA, DECISIONS, and ACTION ITEMS. The AGENDA section lists four items: 1. Discuss the implementation of the next sprint: Set Management, 2. Assign tasks to each team member, 3. Decide the meeting minutes responsibility for the following weeks, and 4. Merge development branch and close the previous sprint. The DECISIONS section states that the meeting minutes responsibility will circulate among team members in the sequence of Yulin Wu -> Zhanhong Liu -> Hanzheng Qiu -> Mingchen Cai. The ACTION ITEMS section lists four tasks assigned to specific team members: 1. Yulin Wu will develop the frontend of Set Management, 2. Zhanhong Liu will develop the API of: Set Create, Set Delete, Objective Problem Related APIs, 3. Hanzheng Qiu will develop the API of: Set Update, Set Get One, Programming Problem Related APIs, and 4. Mingchen Cai will develop the API of: Set Get Assignment List, Set Get Exam List, Student Related APIs.

➤ Meeting Minutes Preview

## 7. PROJECT MILESTONES



# THANK YOU

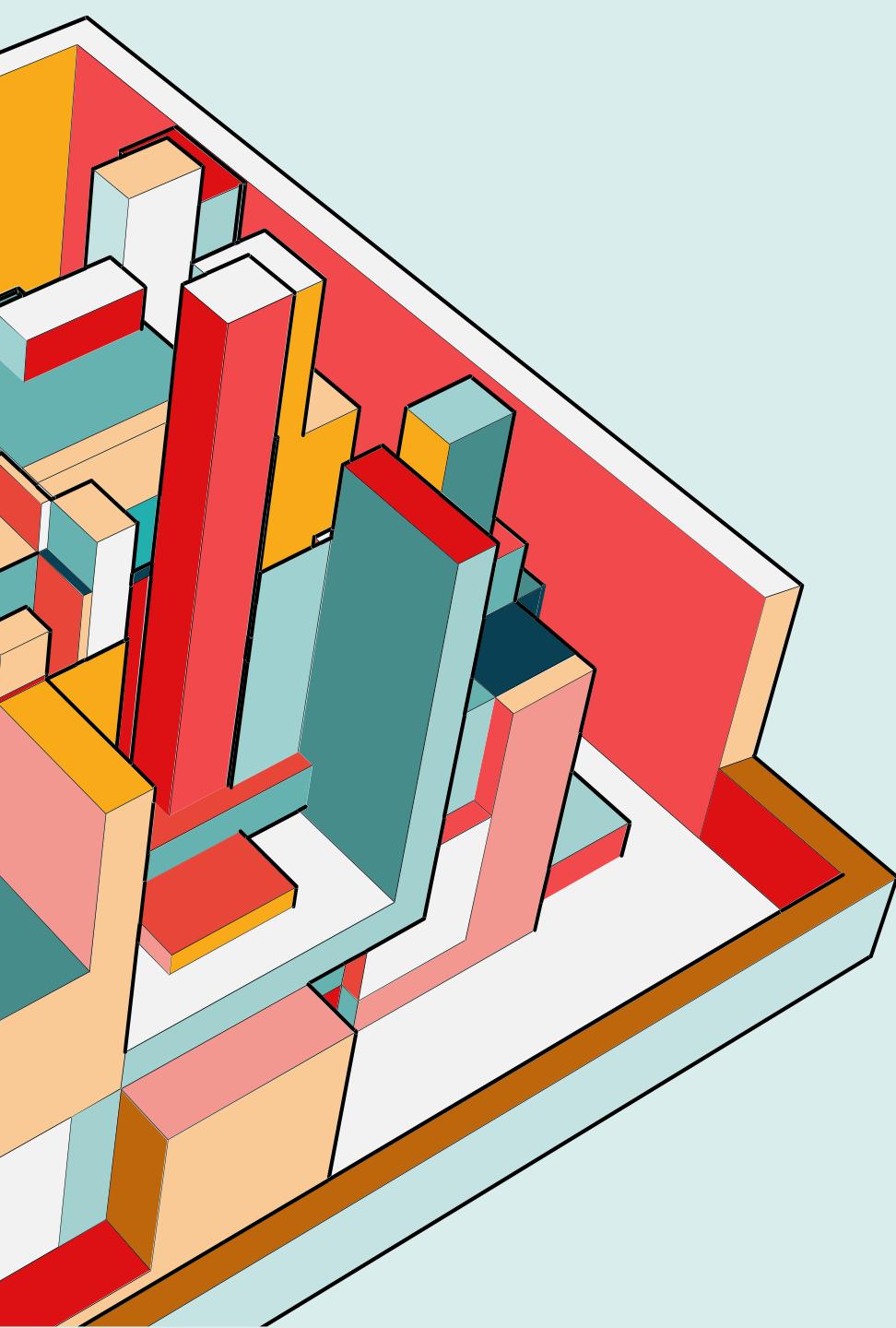
Group 9

Yulin Wu

416-824-4253

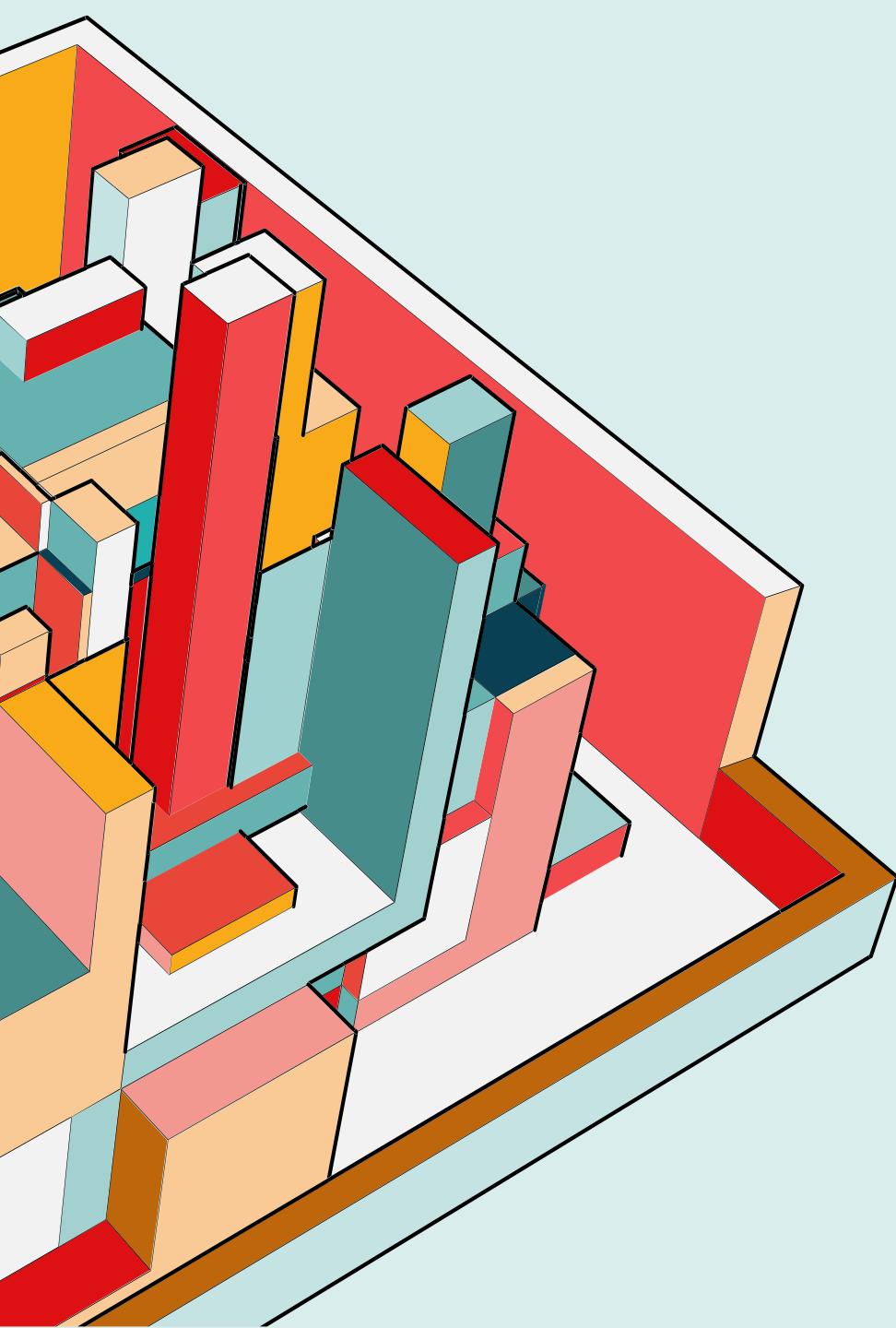
y297wu@uwaterloo.ca





## LIVE SOFTWARE DEMO

1. Problem Set Student
2. Problem Set Teacher



# FINAL REVIEW RECORDING

[YouTube Link](#)