THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Faculty of Computer and Mathematical Sciences
計算機及數學科學學院

# COMP2411 Database Systems

## Group 1

## Competition Management & Intelligent teammate matching database system

## User Guide


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# 1. Introduction of CMITM system

The PolyU Competition Management and Intelligent Teammate Matching Database System is an online platform for students and staff. It is designed to organize competition information, manage team formation, and track participation data. The system aims to make management easier and provide useful recommendations. It includes these following functions:

Student Profile and Skill Management: Students can display their skills, such as Python, data analysis, or financial analysis, and competition experiences on their personal pages. This information helps the system suggest suitable teammates.

Competition Browsing and Registration: Students can browse competitions posted by staff and register or create teams through the platform.

Teammate Matching and Invitation: The system recommends potential teammates based on complementary skills and academic backgrounds. Students can invite suitable peers to join their teams.

Competition Progress and Result Updates: Students can update their team registration status and record awards on the platform. Staff can track and analyze participation and results in real time.

# 2. SUPPORTING SYSTEM

- **Running Platform**: Windows/Mac/Linux (Cross-platform)
- **IDE**: Python 3.x with Tkinter support
- **Python Version**: 3.8 or above
- **Database**: SQLite3 (Built-in, no additional setup required)

# 3. INSTALLATION & RUNNING

3.1 Download and install PyCharm, VS Code, or other Python IDE
3.2 Open the CMITM_database_system.py file in the IDE
3.3 Select "Run" or use shortcut keys (usually Ctrl+F5)

# 4. COMPETITION MANAGEMENT SYSTEM RULES

## 4.1 Student Registration Rules

- Students must register with a valid Student ID in the format: 8 digits followed by 'D' (e.g., 25088315D)

- Students must provide valid personal information including name, email, major, and year of study
- Each Student ID can only be registered once in the system

### 4.2 Staff Registration Rules

- Staff must register with a valid Staff ID in the format: 4-digit number (e.g., 1001)
- Staff must provide valid personal information including name, email, and department
- Each Staff ID can only be registered once in the system

### 4.3 Competition Creation Rules

- Only registered staff members can create new competitions
- Competitions must have a title, type, description, start date, end date, quota, and maximum team size
- Staff can only edit or delete competitions they have created

### 4.4 Team Formation Rules

- Students can register for competitions individually or create teams
- Team size cannot exceed the competition's maximum team size limit
- Each team must have a leader who creates the team
- Students can only join one team per competition

### 4.5 Teammate Invitation Rules

- Students can send invitations to potential teammates based on skill matching
- Each student can receive multiple invitations but can only accept one per competition
- Team leaders can send invitations to students who meet the competition's skill requirements

### 4.6 Skill Matching Rules

- The system automatically matches students based on competition skill requirements
- Match score is calculated based on the number of required skills the student possesses
- Students with higher match scores are recommended first for team invitations

### 4.7 Registration Management Rules

- Staff can view all registrations for competitions they manage
- Students can only register for competitions that are currently open
- Registration quotas are enforced per competition

### 4.8 System Administration Rules

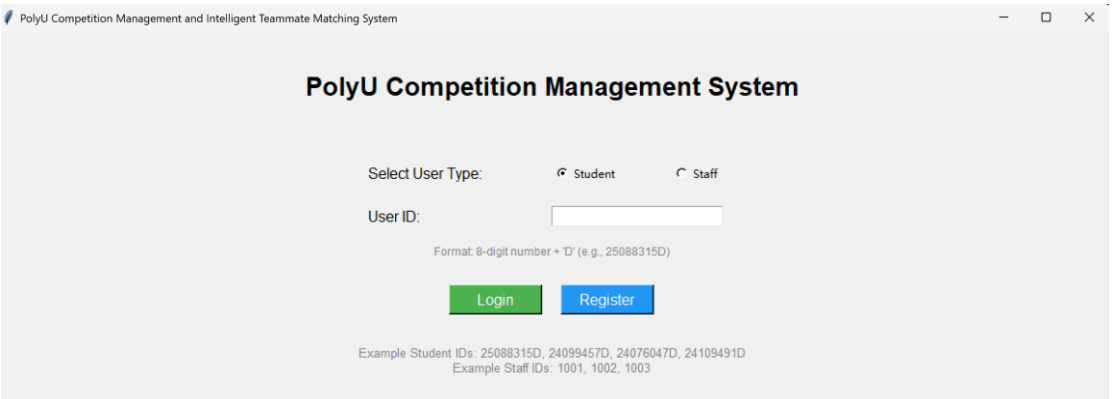
- The system maintains data integrity through foreign key constraints
- Sample data is automatically populated for demonstration purposes
- All user actions are logged in the database for audit purposes
- The system ensures data consistency through transaction management

### 4.9 User Account Rules

- Users must log in with their registered ID to access system features
- Student and staff accounts have different access privileges and functionality
- User sessions are maintained until explicit logout
- Account information can be viewed but not modified through the user interface

# 5. Operation guide (Student)

## 5.1 Login Page




**Step1:** Select User Type

- Choose “Student” as user type

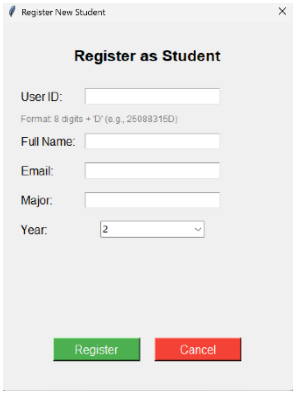
**Step2:** Enter Student ID

- Enter student ID in format: 8 digits + D (e.g., 25088315D)

**Step3:** Login/Register

For students using the PolyU Competition Management System for the first time, you need to complete the registration process first. After registering, you only need to enter your student ID and click “Login” to access the system.

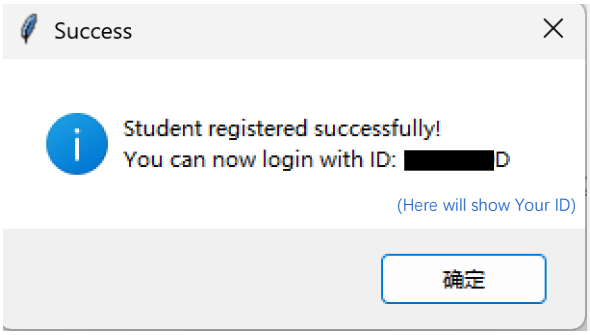
## 5.2 Registration Page

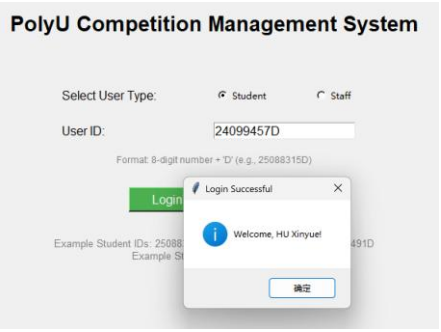



Fill Registration Information

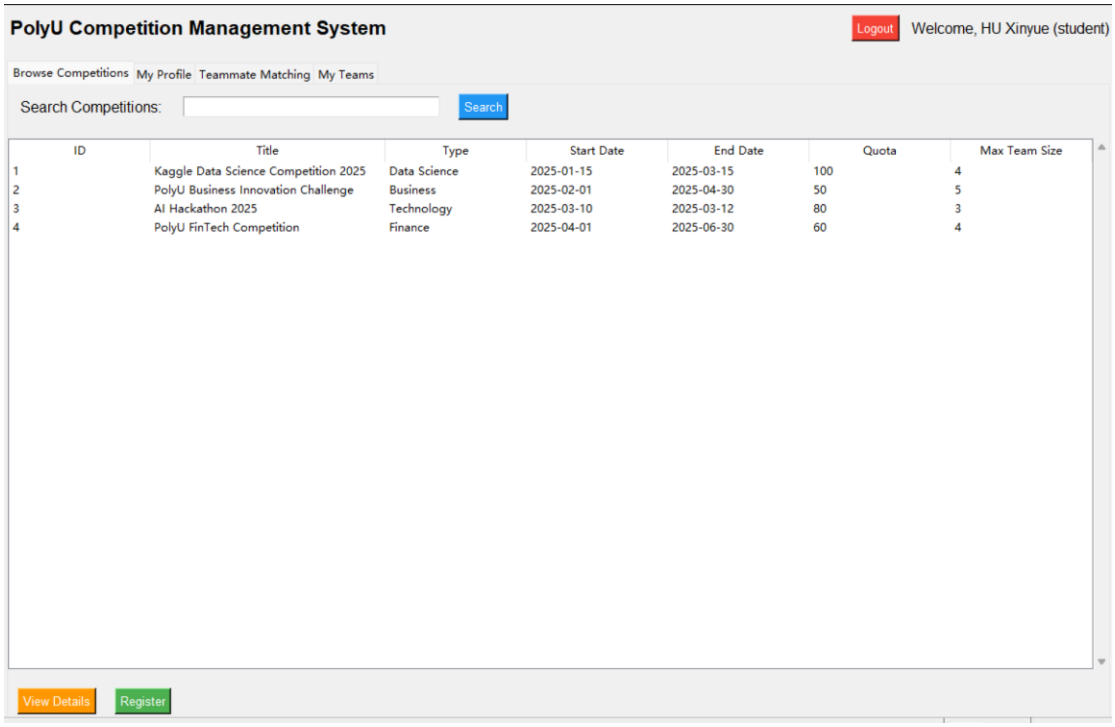
- Student ID: 24099457D (format: 8 digits + D)
- Name: Your full name
- Email: Valid email address
- Major: Your major field
- Year: Select your year (1-4)

Click “Register” to submit and system displays success message



## 5.3 Browse Competitions

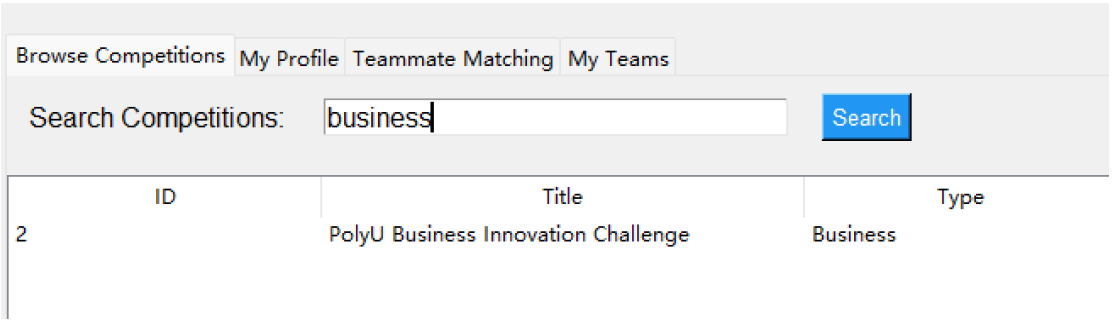



**Step1:** Access Competitions Page

- "Browse Competitions" tab opens by default after login

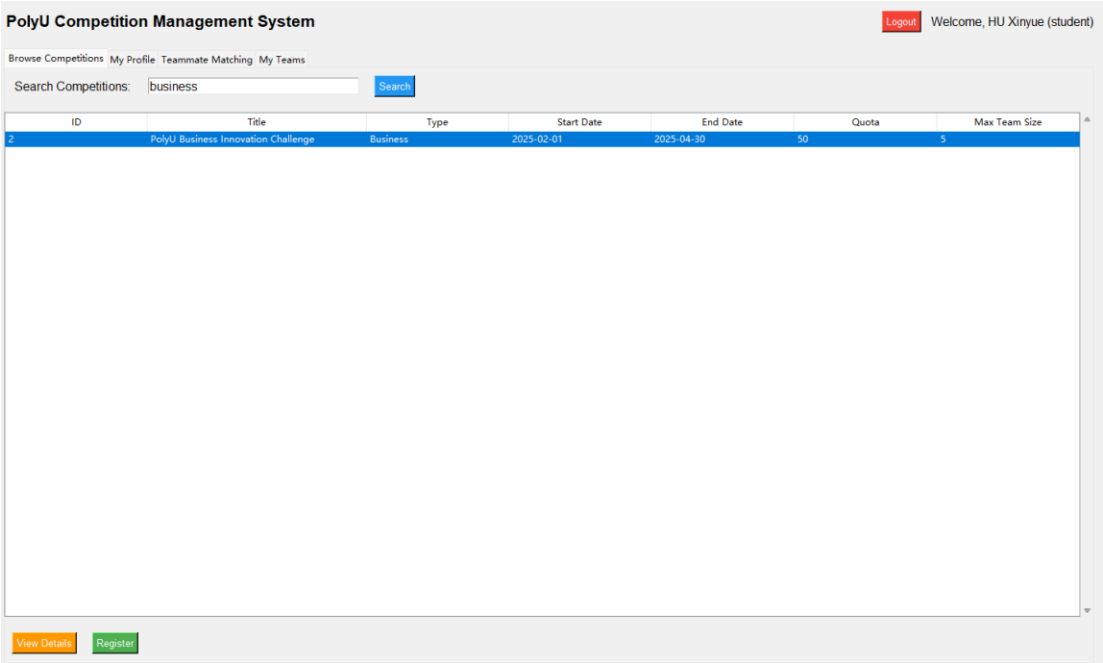
**Step2:** Search Competitions

- Enter keywords in search box to find specific competitions
- Results display in real-time

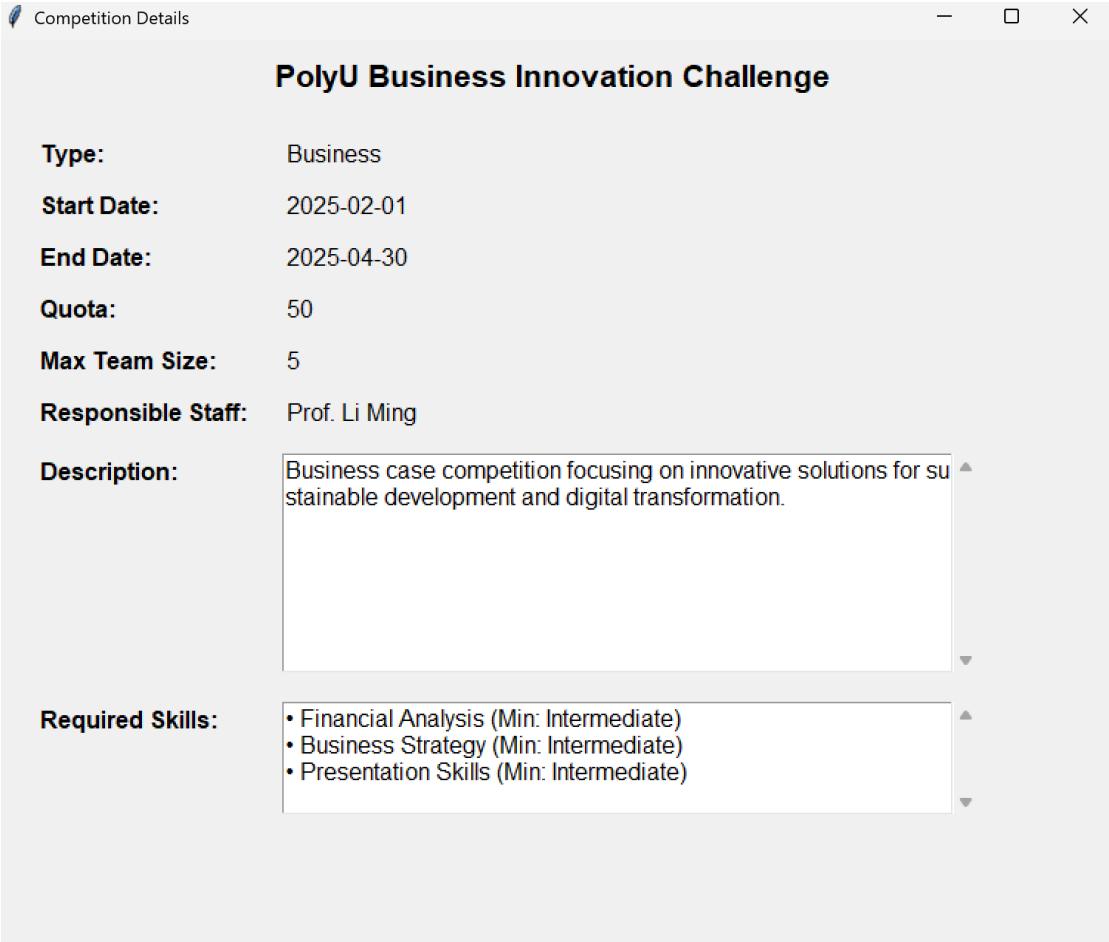



**Step3:** View Competition Details

- Select competition of interest



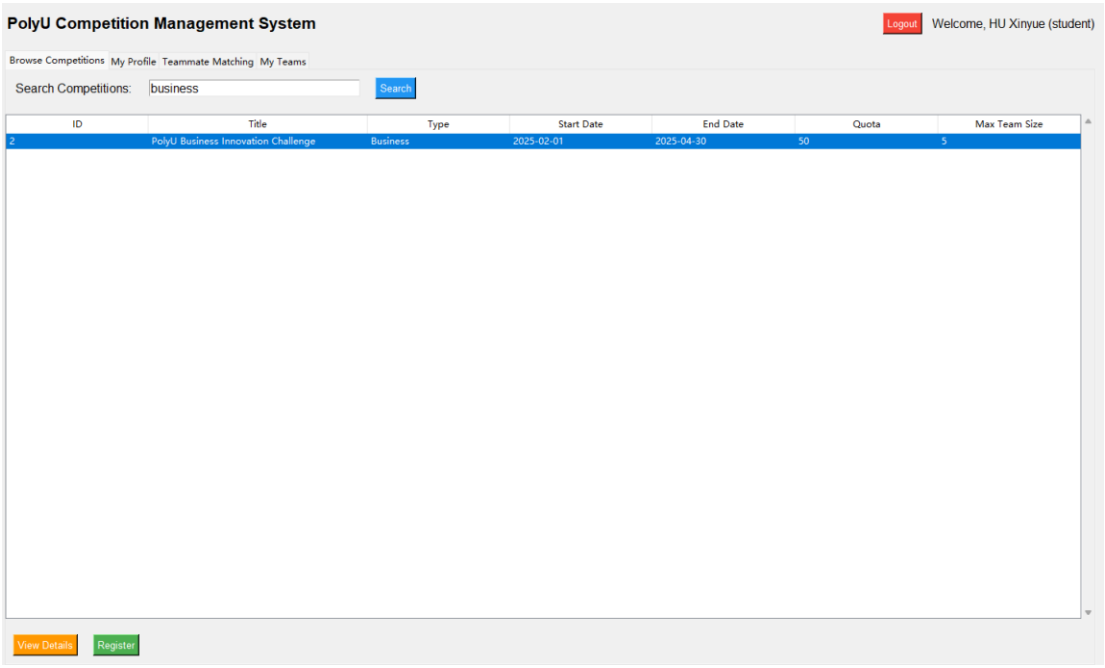

- Click “View Details” for complete information




### 5.4 Register for Competition

**Step1:** Choose competition from the list

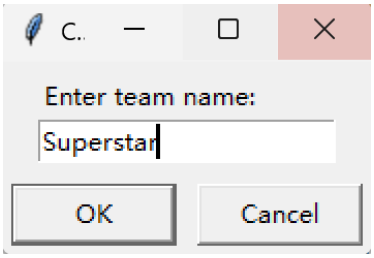
**Step2:** Click “Register” button to start registration process




**Step3:** Choose Team Option

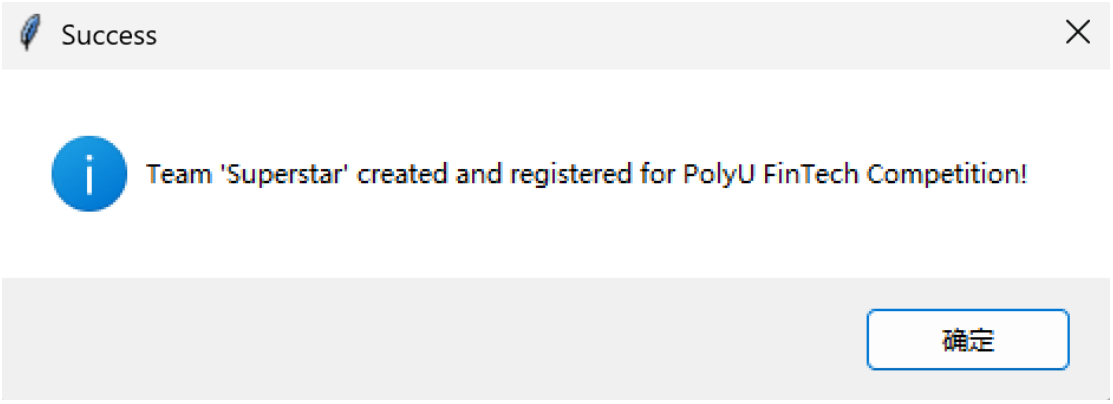
- Select "Yes" to create new team and enter team name
- Select "No" to register individually and join team later



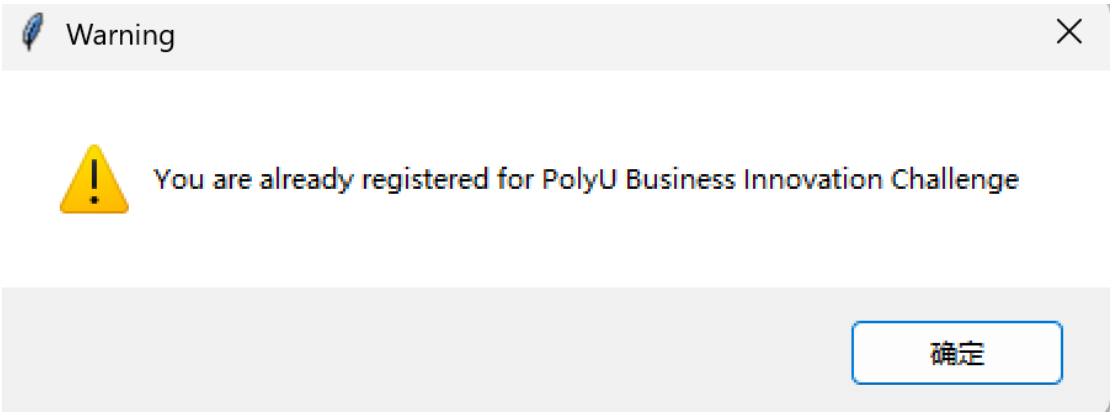
- After choosing yes, enter the team name to confirm 


**Step4:** Confirm Registration

- System displays registration success message




Attention: As each student can only register for the competition once, the system will issue an alert for any duplicate registrations.

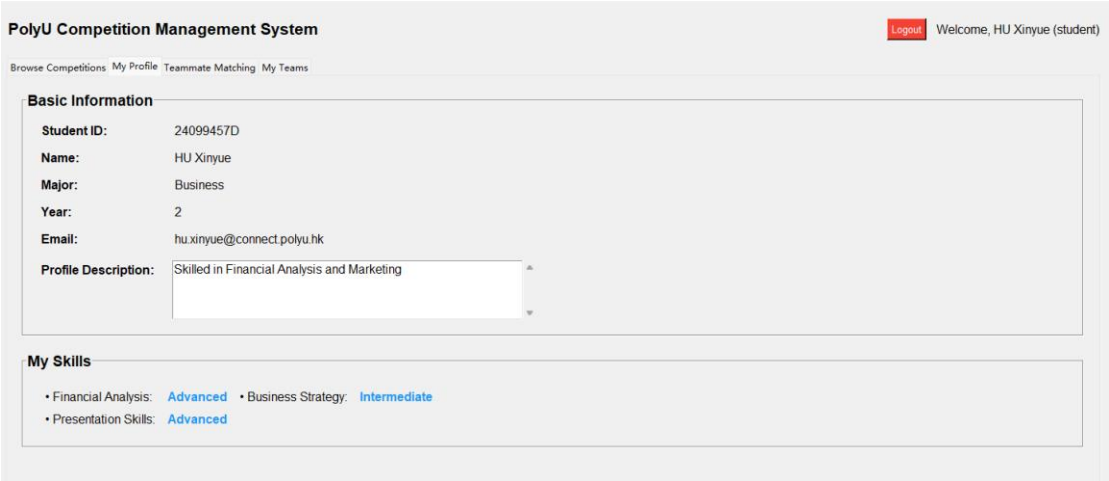



**5.5 View Profile**

**Step1:** Access Profile Page

- Click “My Profile” tab

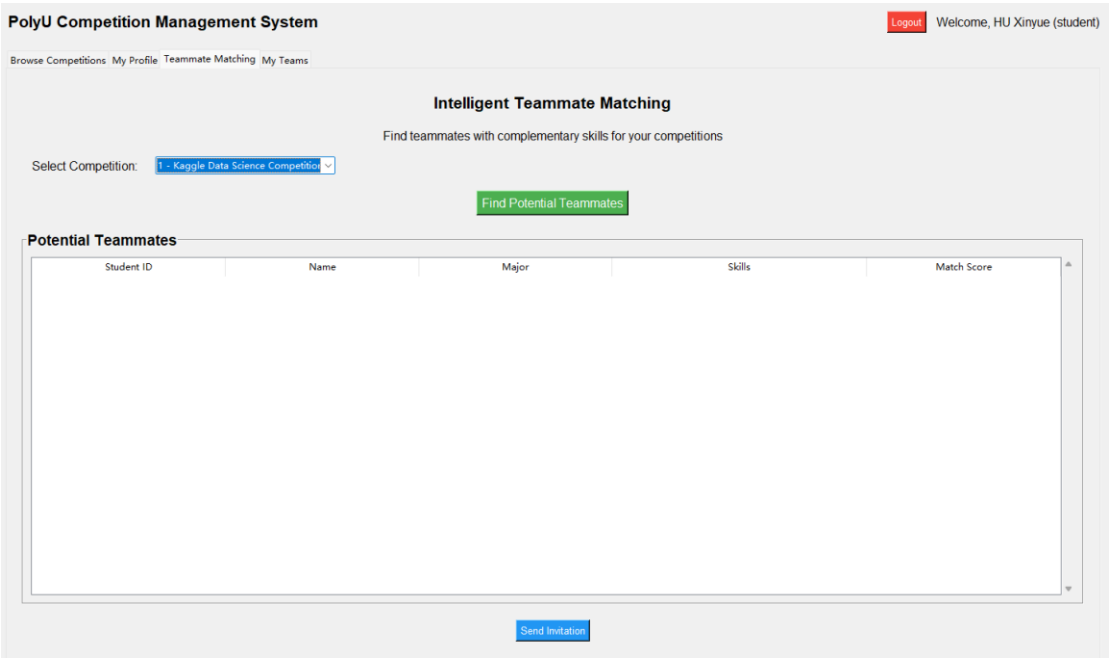
**Step2:** View Personal Information




## 5.6 Team Matching

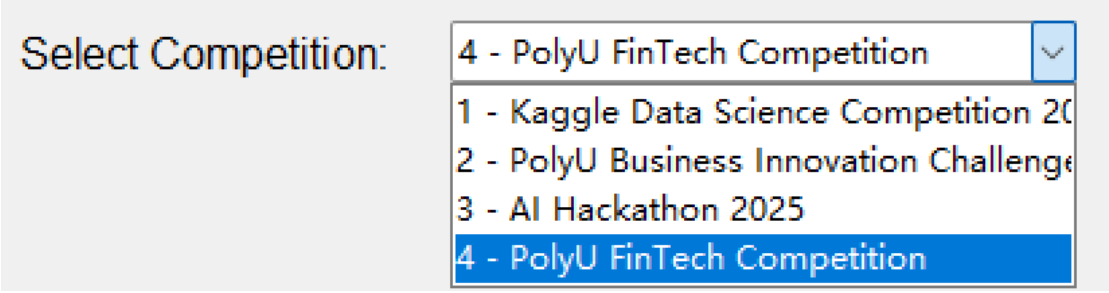
**Step1:** Access Teammate Matching

- Click “Teammate Matching” tab



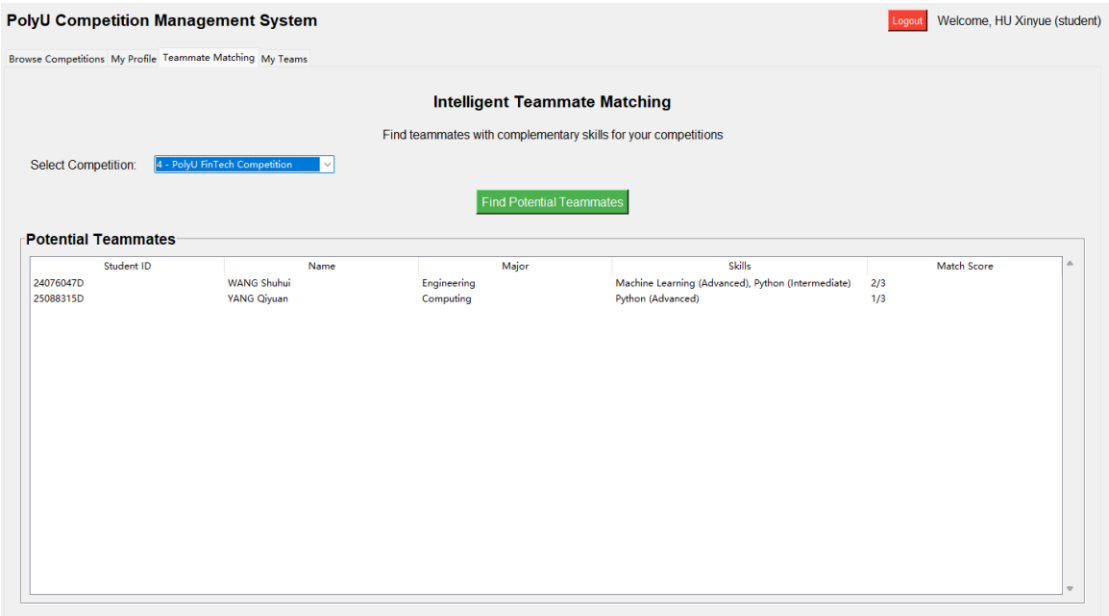

**Step2:** Select Competition

- Choose target competition from dropdown menu



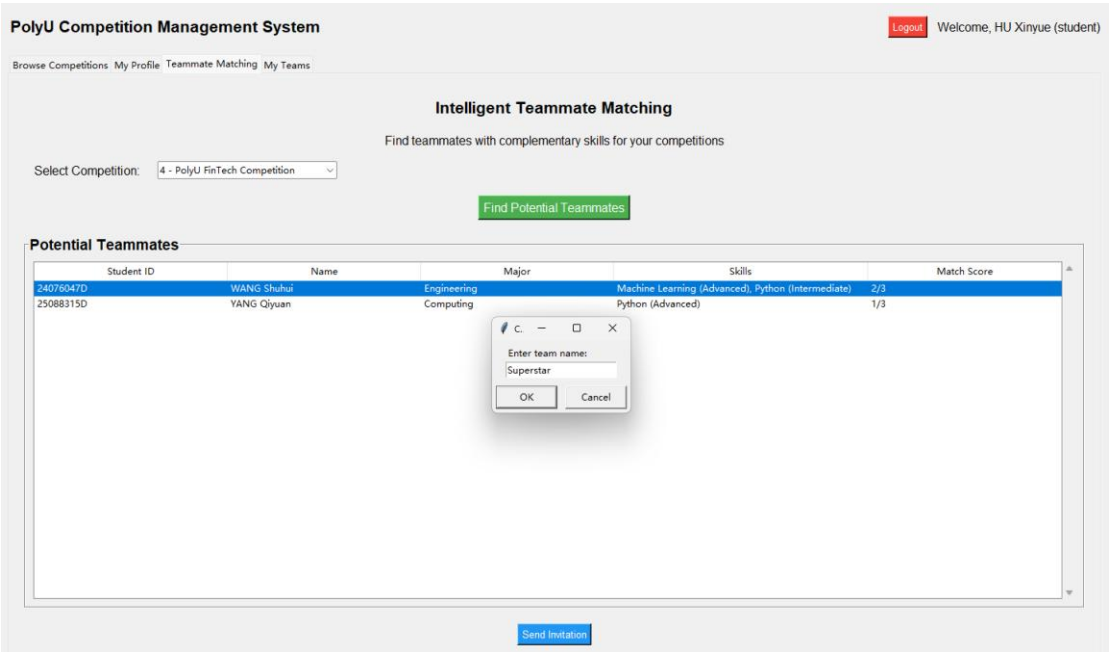
**Step3:** Find Teammates

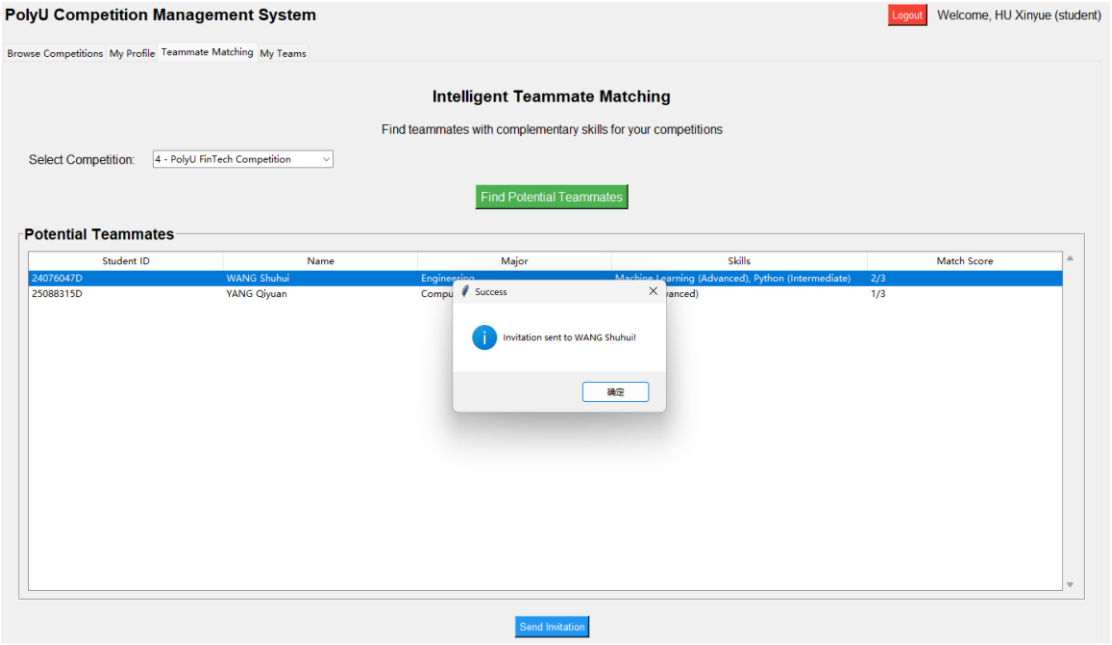
- Click "Find Potential Teammates" button
- System displays matched potential teammates list



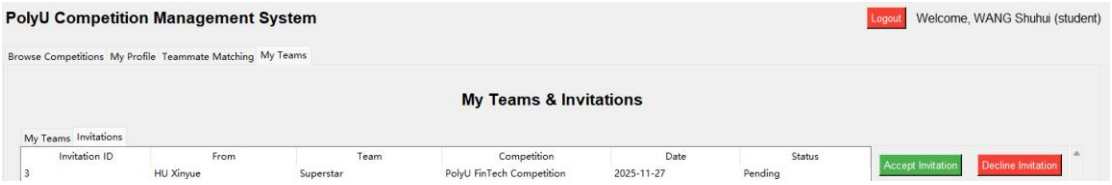

**Step4:** Send Invitation

- Select suitable teammates
- Click "Send Invitation" to send invitation





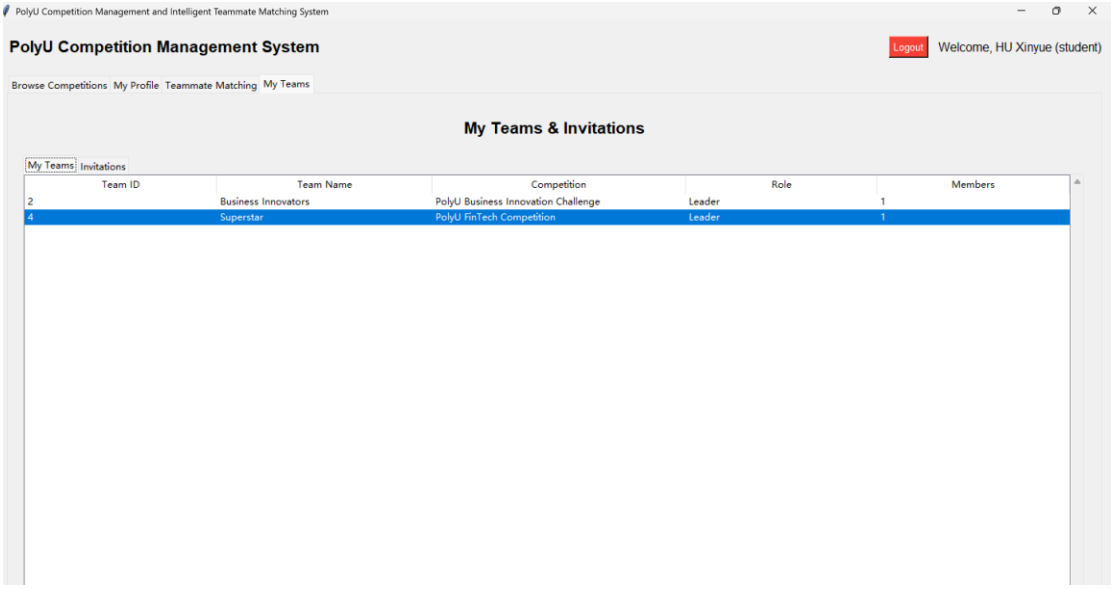

And the selected teammate will receive your invitation and see it in My teams page. He/she can select invitation and click “Accept Invitation” or “Decline Invitation”. If you receive an invitation, the situation is the same.




## 5.7 Manage Teams

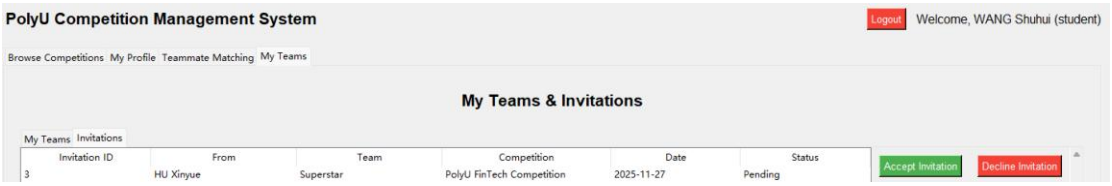
**Step1:** View My Teams

- Click “My Teams” tab
- View team information you belong to



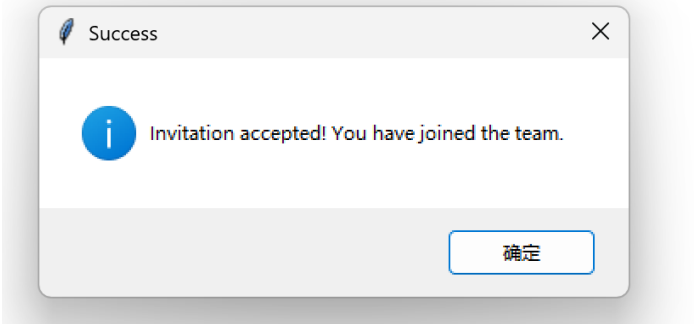
**Step2:** Handle Invitations

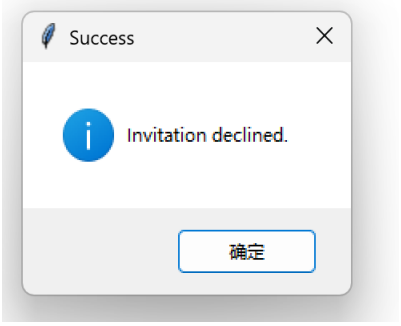
- Switch to "Invitations" sub-tab
- View received team invitations




**Step3:** Accept/Decline Invitations

- Select invitation and click “Accept Invitation” or “Decline Invitation”
- Confirm the status of invitation







## 6. OPERATION GUIDE (Staff)

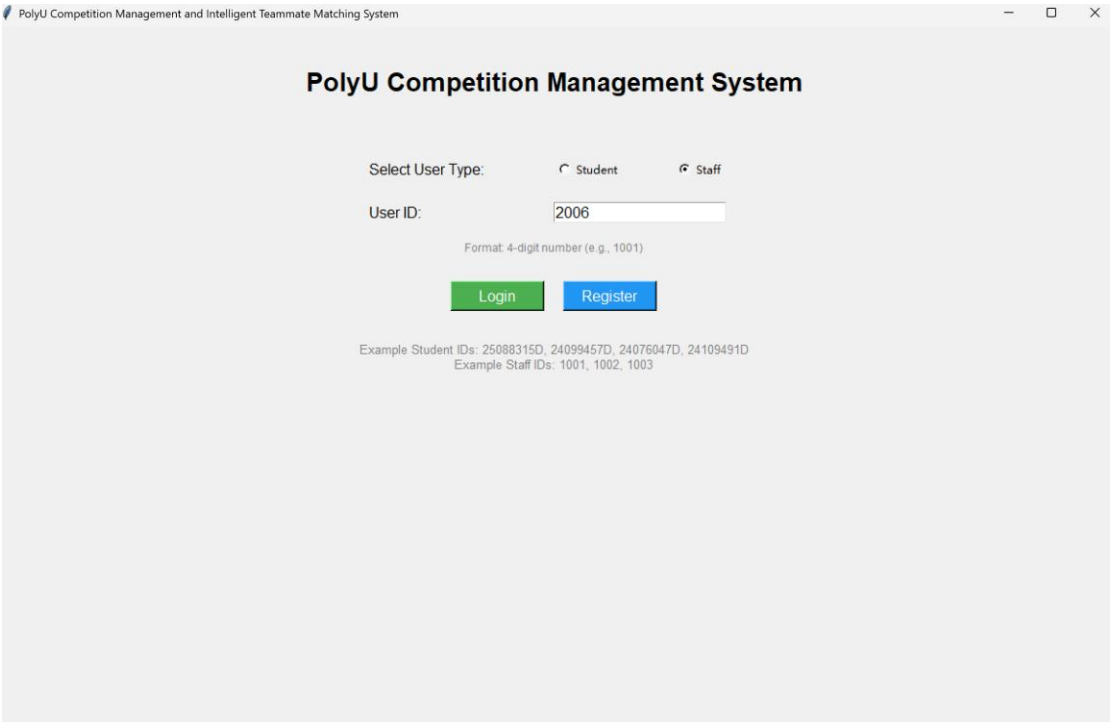
### 6.1 Login Page

**Step 1:** Select User Type

- Choose "Staff" as user type

**Step 2:** Enter Staff ID

- Enter 4-digit staff ID (e.g., 1001)
- For staffs using the PolyU Competition Management System for the first time, you need to complete the registration process first. After registering, you only need to enter your staff ID and click “Login” to access the system.



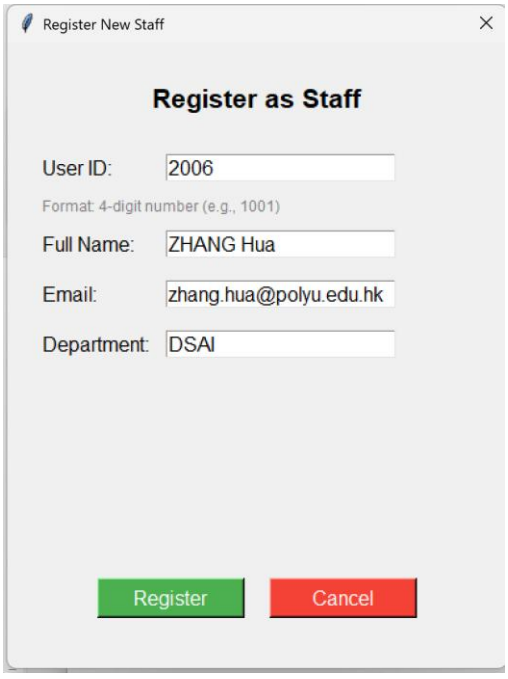

### 6.2 Registration Page

**Step 1:** Click Register Button

- Click "Register" button on login screen

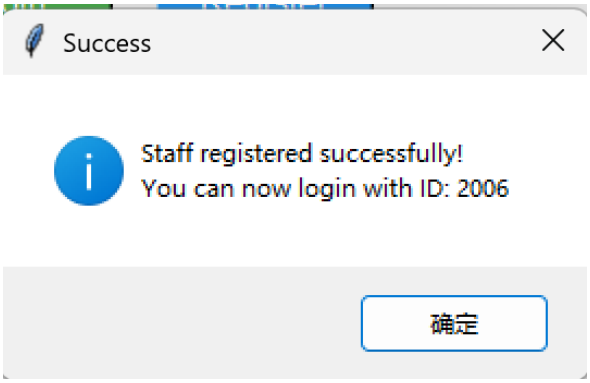
**Step 2:** Fill Registration Information

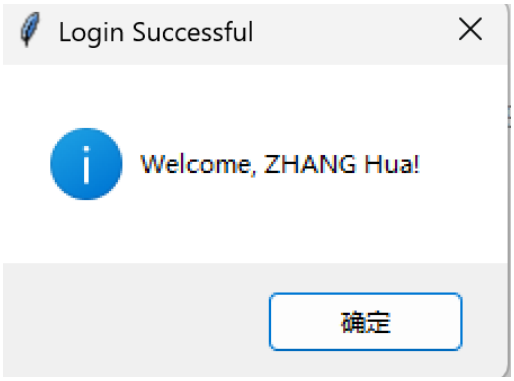
- Staff ID: 1001 (format: 4 digits)
- Name: Your full name
- Email: Valid email address
- Department: Your department



**Step 3:** Complete Registration

- Click "Register" to submit
- System displays success message

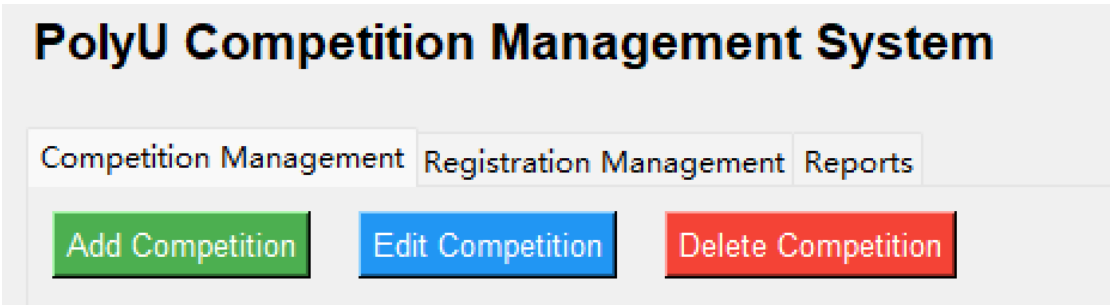



### 6.3 Competition Management

**Step 1**: Access Competition Management

- "Competition Management" tab opens by default after login

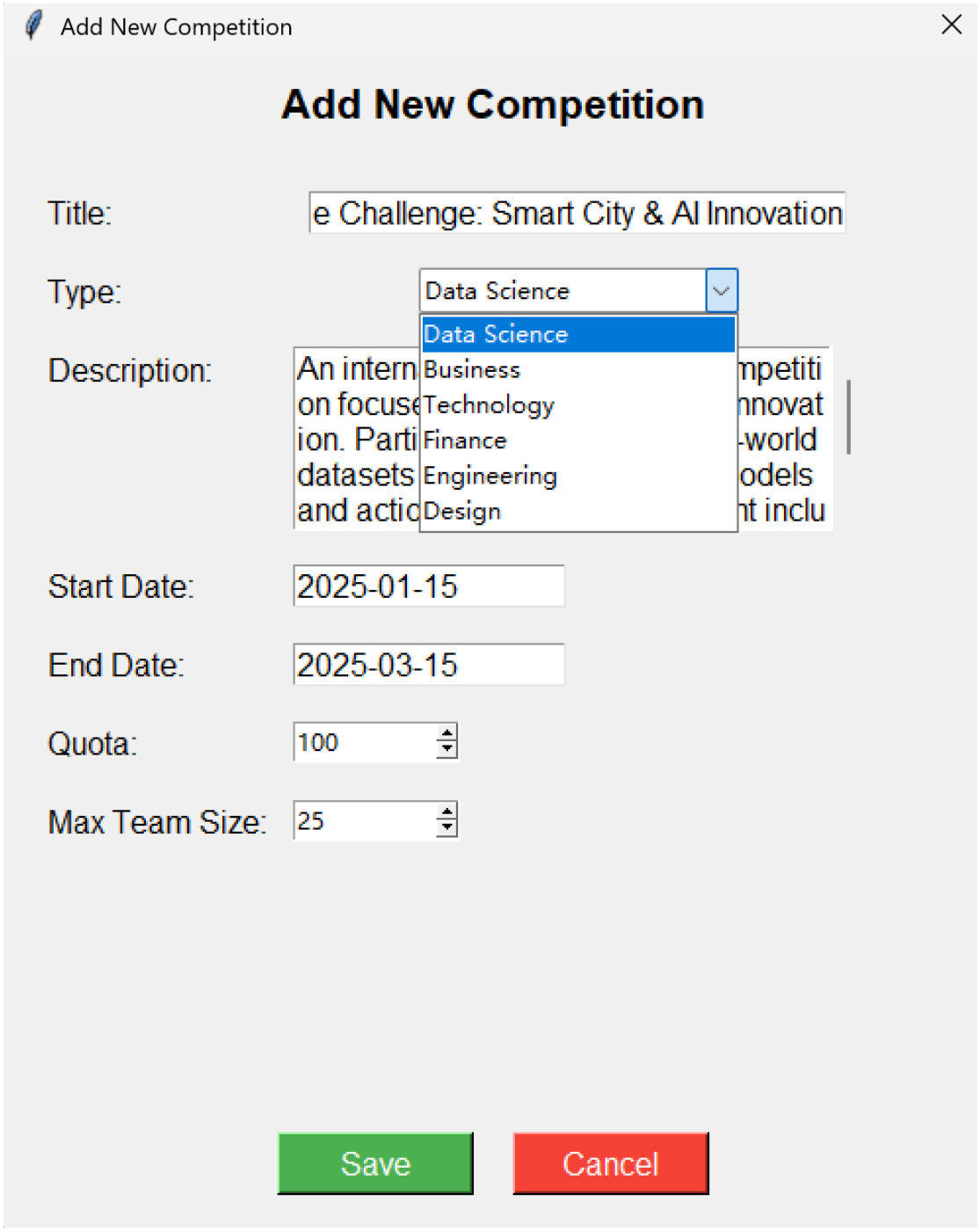



**Step 2**: Add New Competition

- Click "Add Competition" button

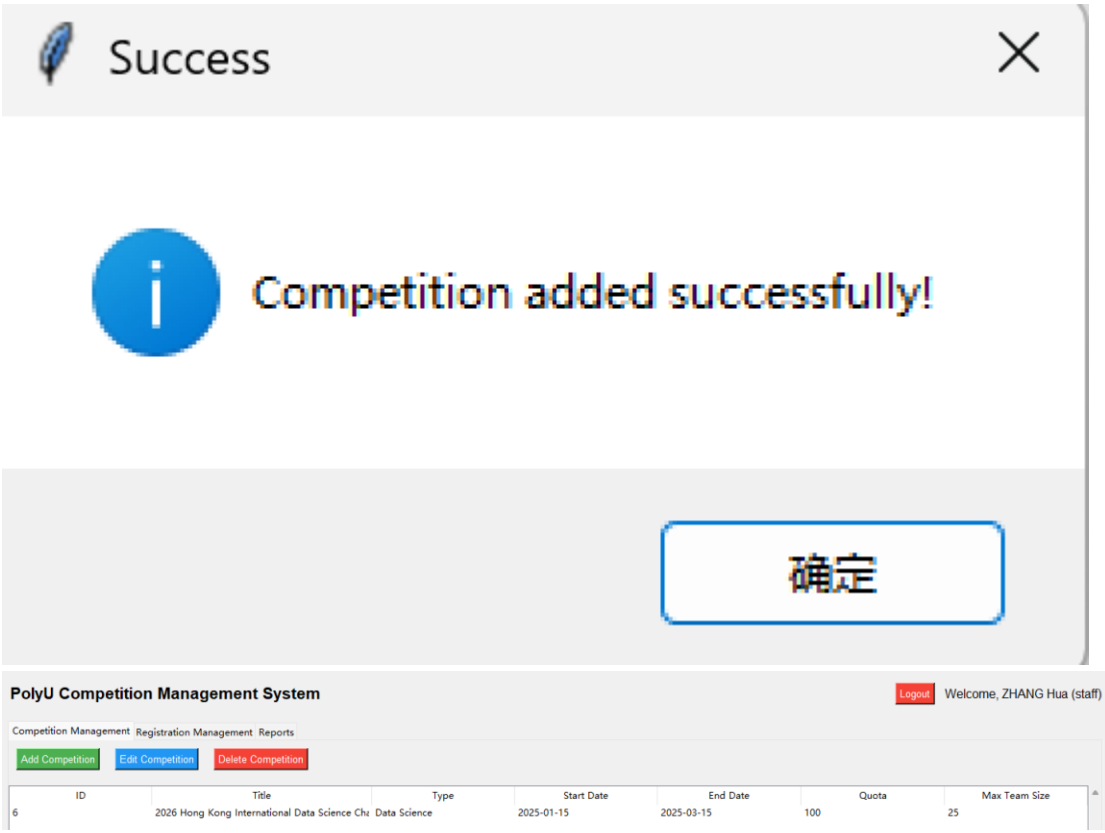
**Step 3**: Fill Competition Information

- Title: Competition name
- Type: Select competition type (Data Science, Business, etc.)
- Description: Detailed competition description
- Start Date: Competition start time
- End Date: Competition end time
- Quota: Participant limit
- Max Team Size: Maximum members per team


Add New Competition
Add New Competition
Title:
e Challenge: Smart City & AI Innovation
Type:
Data Science
Data Science
Business
Technology
Finance
Engineering
Design
Description:
An intern
on focuse
ion. Parti
datasets
and actic
mpetiti
nnovat
-world
odels
nt inclu
Start Date:
2025-01-15
End Date:
2025-03-15
Quota:
100
Max Team Size:
25
Save
Cancel

**Step 4**: Save Competition

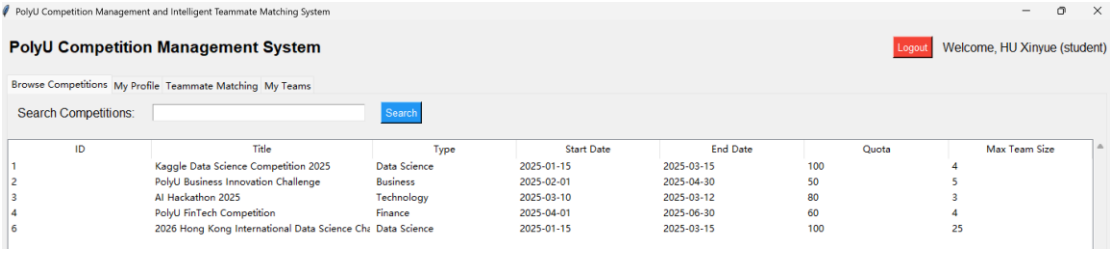
- Click "Save" to save competition information







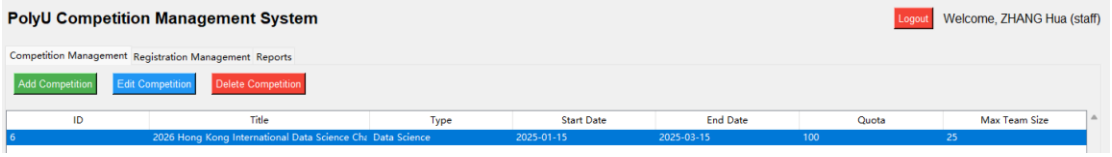
And then this competition will also show on the student page for them to view and register:




## 6.4 Edit Competition

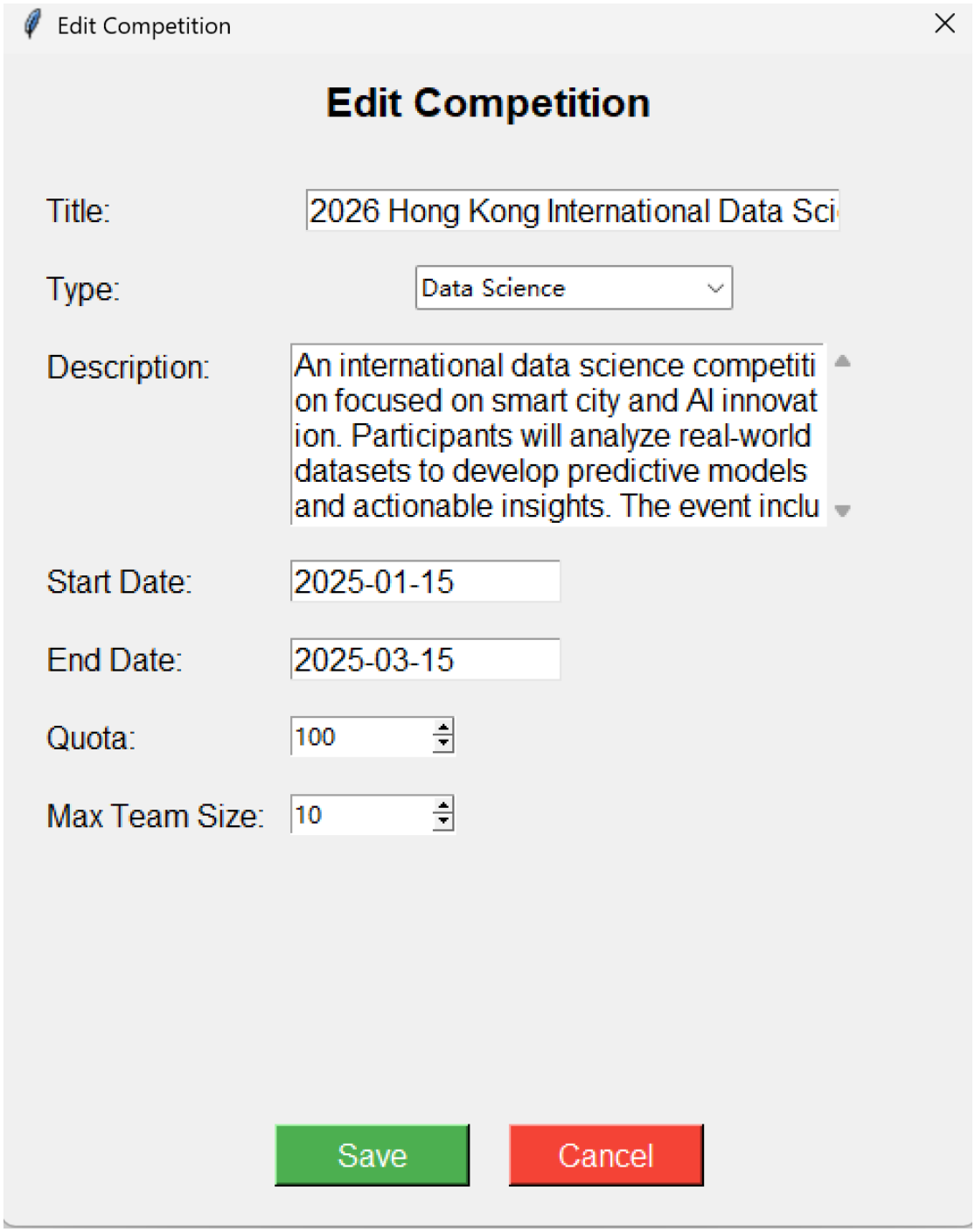
**Step 1**: Select Competition to Edit

- Choose target competition from the list



**Step 2**: Click Edit Button

- Click "Edit Competition" button

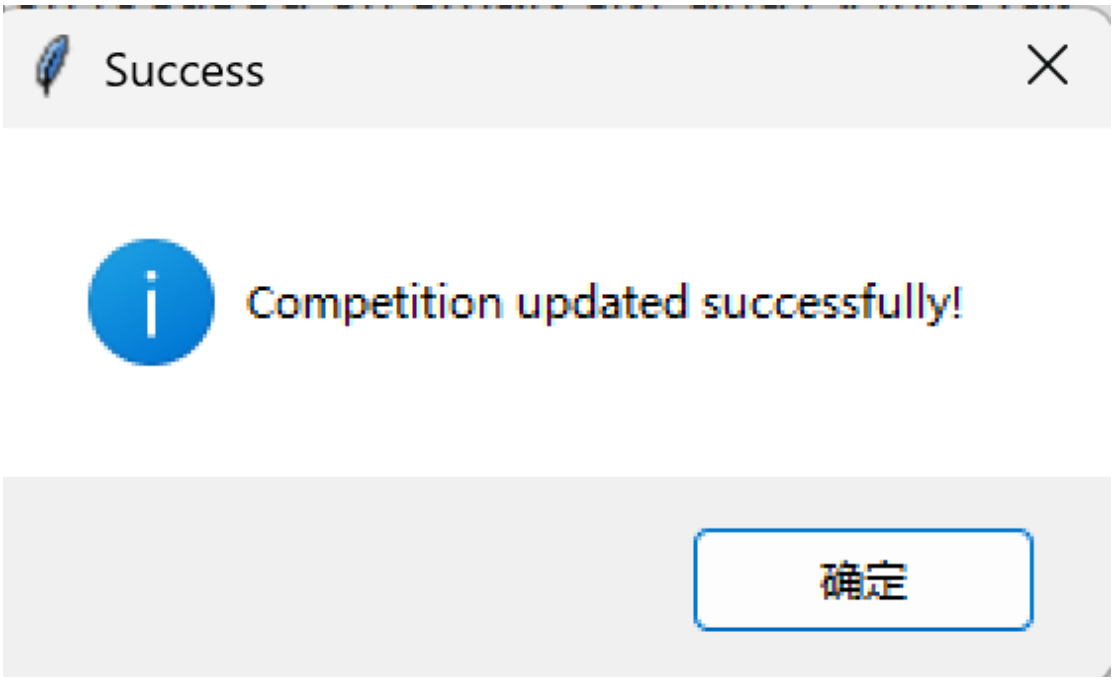



**Step 3**: Modify Competition Information

- Update required fields
- All fields are pre-filled with current information

**Step 4**: Save Changes

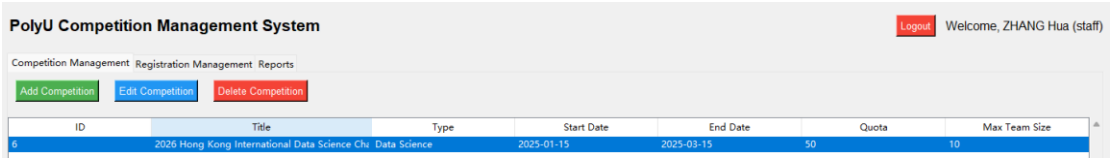
- Click "Save" to save changes




### 6.5 Delete Competition

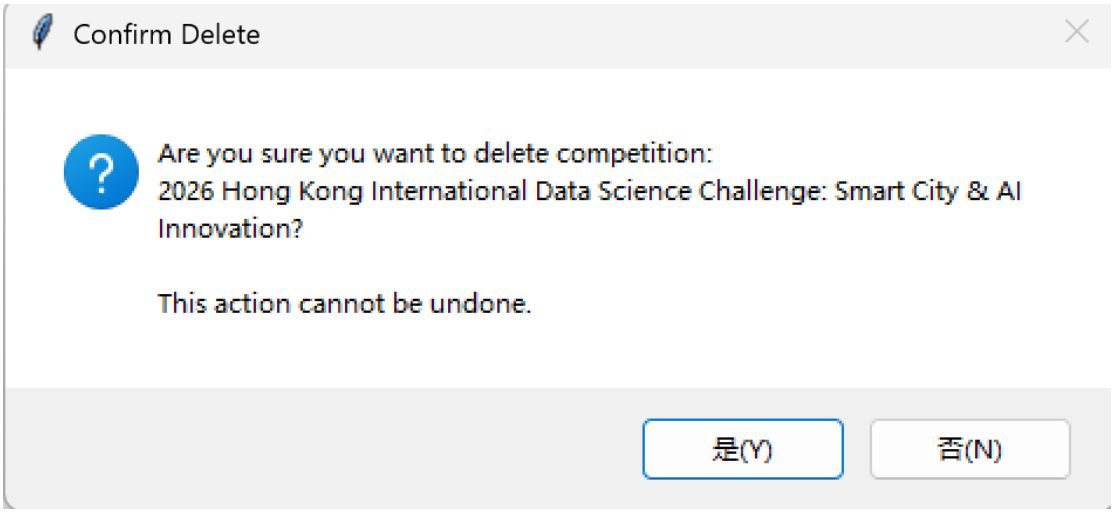
**Step 1**: Select Competition to Delete

- Choose target competition from the list



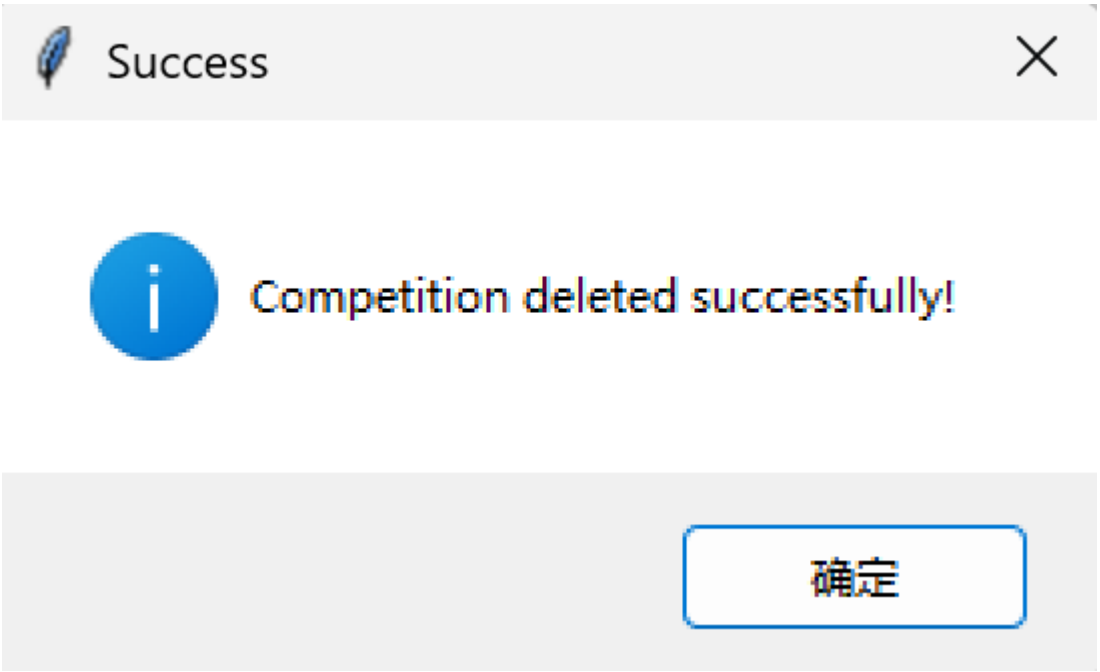

**Step 2**: Click Delete Button

- Click "Delete Competition" button



**Step 3**: Confirm Deletion

- System shows confirmation dialog
- Click "Yes" to confirm deletion



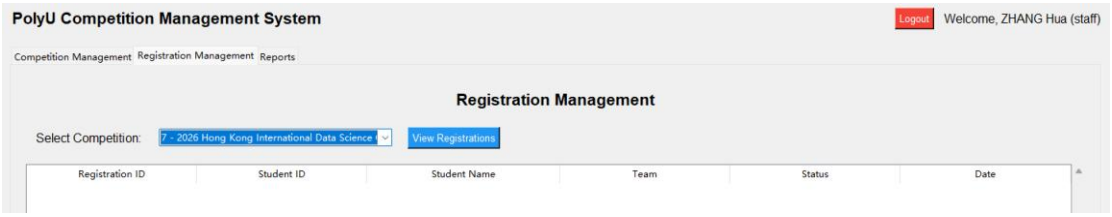

### 6.6 Registration Management

**Step 1**: Access Registration Management

- Click "Registration Management" tab

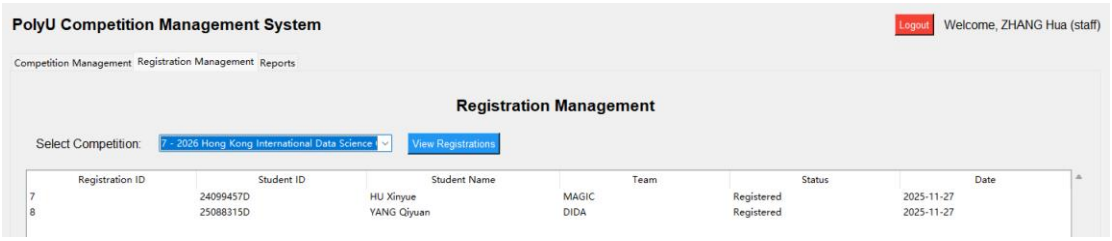
**Step 2**: Select Competition

- Choose competition from dropdown menu to view registrations (Staff can only choose the competition posted by himself/herself.)




**Step 3**: View Registration Information

- Click "View Registrations" to see all registrations
- Displays student registration details and team information



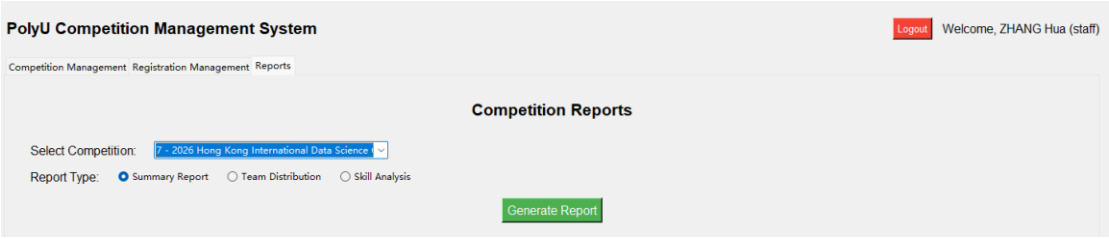
## 6.7 Report Generation

**Step 1**: Access Reports Page

- Click "Reports" tab

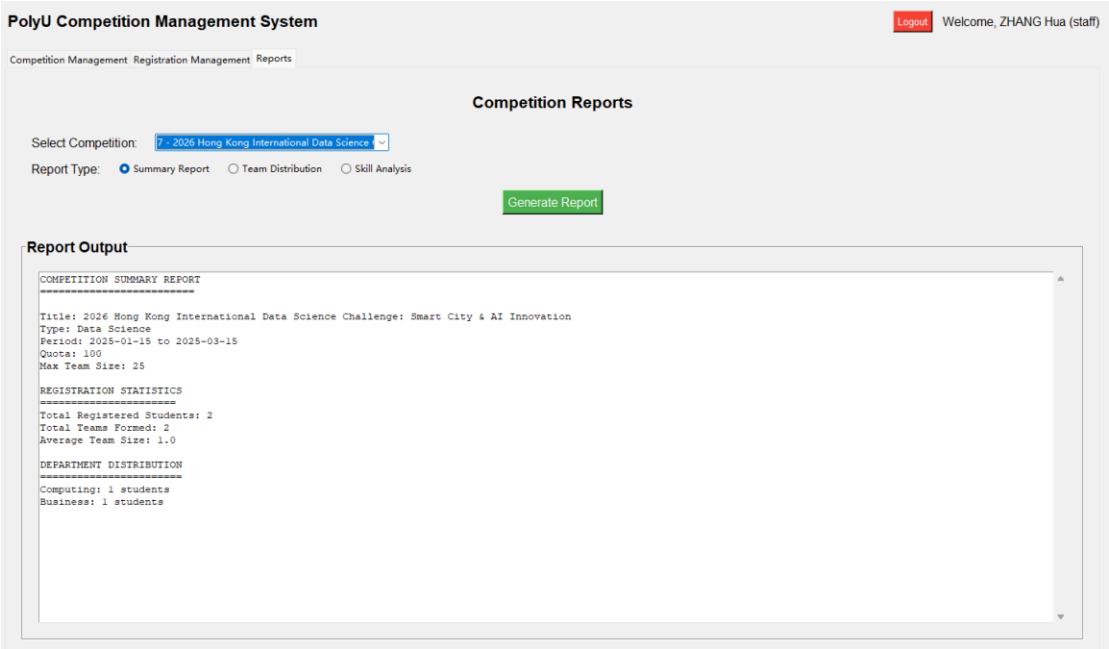
**Step 2**: Select Competition and Report Type

- Choose target competition
- Select report type (Summary, Team Distribution, Skill Analysis)

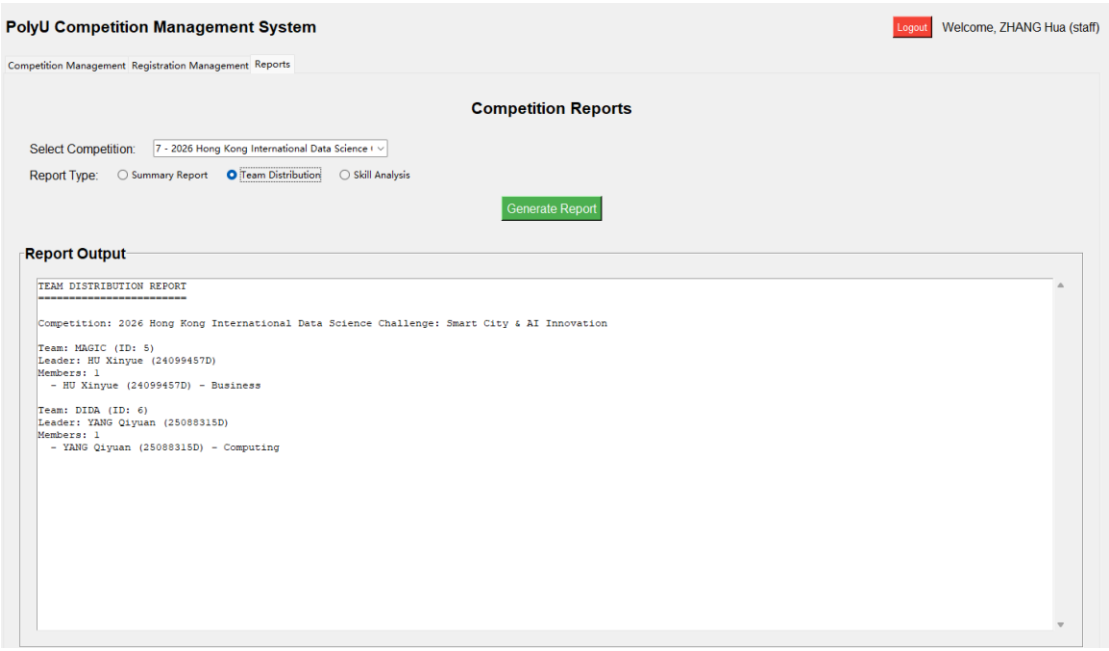



**Step 3**: Generate Report

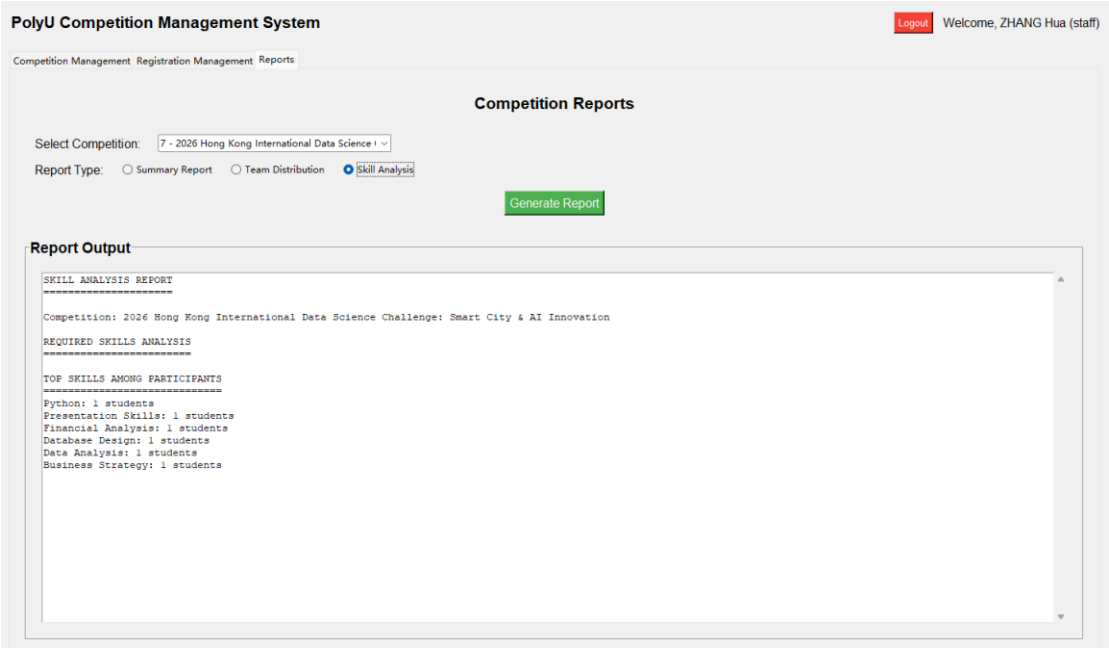
- Click "Generate Report" button
- Report content displays in text area below




Summary Report




Team Distribution Report




Skill Analysis Report

## 6.8 Logout

**Step**: Click Logout Button

- Click "Logout" button in top-right corner from any page
- System returns to login screen

## 7 Frequently Asked Questions (FAQ)

**Q1: I forgot my Student/Staff ID. How can I log in?**

**A:** The Student/Staff ID is the only credential for login. If you have forgotten yours, please contact the system administrator. The Student ID format is 8 digits followed by 'D' (e.g., 25088315D), and the Staff ID is a 4-digit number (e.g., 1001).

**Q2: Why can't I find any teammates in the "Teammate Matching" section?**

**A:** Possible reasons: 1) There are no other participants for this competition yet; 2) Your skills do not match the competition's requirements; 3) The competition registration is not open or has closed. Try updating your skill profile.

**Q3: Can I edit or delete a competition created by another staff member? (STAFF)**

**A:** No. You can only manage competitions that you have created. Please contact the creator of the competition for modifications.

**Q4: I accidentally declined a team invitation. Can I undo this? (STUDENT)**

**A:** The decline action cannot be undone. However, you can contact the team leader and ask them to send you a new invitation.

**Q5: What operating systems does the system support?**

**A:** It is a cross-platform system, supporting Windows, macOS, and Linux. You only need to have Python 3.8 or above installed.

**Need more help?**

Please contact COMP2411 Group1 via email 24099457d@connect.polyu.hk for more information.

End of Competition Management & Intelligent teammate matching system User Guide

**COMP2411 Group1**