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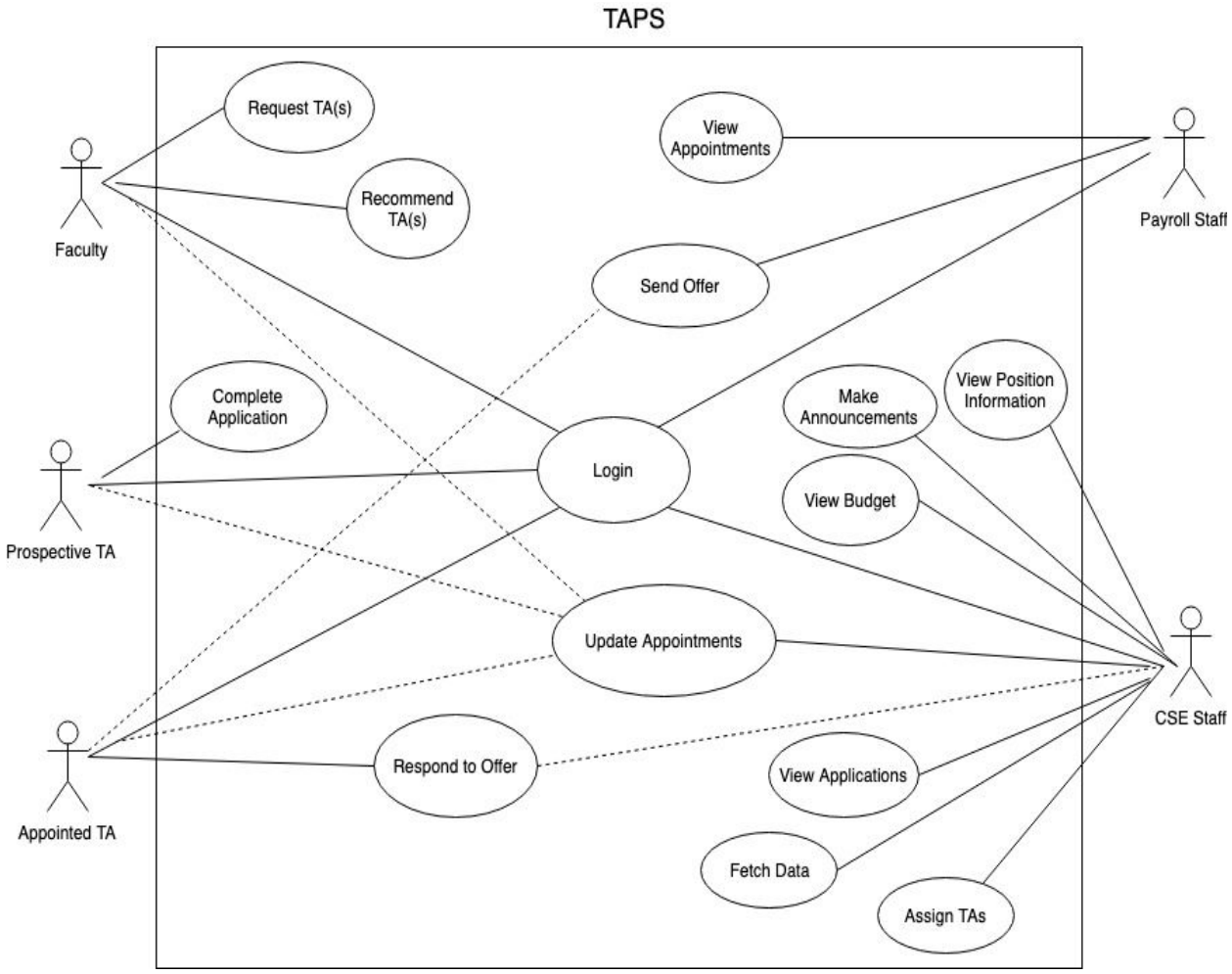
CSci 5801

Use Case Diagram



Note: Dashed lines mean that type of users are involved in the process and can be notified of the changes, but they will not actively do the action.

Details are shown in the following use cases.

Use Case #: 1 **Use Case Name:** Login

Actors: Faculty, CSE Staff, Prospective TA, Appointed TA, and Payroll Staff

Description: The user enters their account information, which is their x500 and password. If there is such an account, and the username and password matches, the user is logged in. Otherwise, the user will not be logged in.

Trigger: Users want to use the system.

Assumptions: The user has a x500 and password.

Precondition: The system has been set up.

Postcondition: The user will be logged in, then they are able to use the system.

Author: Guanpin Zhong

Date: March 8, 2019

Use Case #: 2 **Use Case Name:** Complete application

Actors: Prospective TA

Description: The student provides some information and fills out an application. In details, the student needs to specify the type of appointment they want to be assigned, as well as the course preferences, qualifications, and personal and academic information.

Trigger: The user(student) wants to be a TA for a CSCI course.

Assumptions: The user is a formal and active student at the University. The application for the specific course is currently open.

Precondition: The student is logged into the system (use case 1).

Postcondition: The student has submitted their application. Their application information now is stored in the data system, so that CSE staff are able to view it.

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Date: March 8, 2019

Use Case #: 3 **Use Case Name:** Request TA(s)

Actors: Faculty

Description: The faculty member completes and submits TA request(s) to the system.

Trigger: The faculty want specific student(s) to become TA(s) for their course(s). They also declare how many TAs they want for the following semester.

Assumptions: The faculty member will be teaching a course which requires a TA(s), and there are openings for that course.

Precondition: The user(faculty) is logged into the system (use case 1).

Postcondition: The faculty member has submitted the request. The relative information now is stored in the data system, so that the CSE staff can have a view.

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Use Case #: 4 **Use Case Name:** Recommend TA(s)

Actors: Faculty

Description: The faculty member completes and submits a TA recommendation form.

Trigger: The faculty wants to recommend a specific student to become a TA.

Assumptions: The student recommended is available to be a TA.

Precondition: The faculty member is logged into the system (use case 1).

Postcondition: The faculty has submitted their recommendation. The relative information is stored in the data system, and the CSE staff can now have a view.

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Date: March 8, 2019

Use Case #: 5 **Use Case Name:** View Position Information

Actors: CSE Staff

Description: The CSE staff has a view at the list of courses that will be offered and the corresponding amount of TAs needed for them. The system should be able to provide the estimated number of TAs for each course, and update it when TAs are assigned.

Trigger: The staff want to have a view at the course and position information.

Assumptions: The staff are able to get relative information and decide on TA assignments.

Precondition: The staff member is logged into the system (use case 1). The data system has already stored the information about the courses offered and TA needed.

Postcondition: The system showed the list of courses and number of TA, so that CSE staff can know the most updated situations.

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Date: March 8, 2019

Use Case #: 6 **Use Case Name:** View Budget

Actors: CSE Staff

Description: The CSE staff has a view at the budget information, which is about the total amount of money that can be used for TAs for the whole semester, and the number of TAs that can be assigned under that budget.

Trigger: The CSE staff wants to know the TA budget information.

Assumptions: The staff are able to get relative information and decide on TA assignments.

Precondition: The staff member is logged into the system (use case 1). The data system has already stored the information about the budget.

Postcondition: The budget information show up, then staff can have a view.

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Date: March 8, 2019

Use Case #: 7 **Use Case Name:** View Applications

Actors: CSE Staff

Description: The CSE staff can have a view at the applications that have been submitted into the system. The applications may be sorted by the course preferences, their priority scores and so on.

Trigger: The CSE staff want to view all the applicants and their information.

Assumptions: The staff are able to get relative information and decide on TA assignments.

Precondition: The staff member is logged into the system (use case 1).

Postcondition: The system shows a list of applications, sorted in some order .

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Date: March 8, 2019

Use Case #: 8 **Use Case Name:** Fetch Data

Actors: CSE Staff

Description: The staff member views the data information from previous semesters.

Trigger: The CSE staff wants to view previous statistics.

Assumptions: The staff are able to get relative information and decide on TA assignments.

Precondition: The staff member is logged into the system (use case 1).

Postcondition: The system shows relative summary and data to the user.

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Date: March 8, 2019

Use Case #: 9 **Use Case Name:** Assign TAs

Actors: CSE Staff

Description: The CSE staff make decisions to assign TAs to courses, according to their information like the priority scores as well as the relevant requests.

Trigger: The CSE staff want to assign the most matching TAs to relative courses.

Assumptions: The staff are able to get relative information and decide on TA assignments.

Precondition: The staff member is logged into the system (use case 1). There are courses or applications that have not been dealt with.

Postcondition: There are new TA appointment assignments, which can be stored in the system.

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Date: March 8, 2019

Use Case #: 10 **Use Case Name:** View Appointments

Actors: Payroll Staff

Description: The staff member has a view at the list of appointments, together with the percentages related to the appointments.

Trigger: The staff member wants to view the appointments situations and percentage information.

Assumptions: The staff have the right to see the appointment information.

Precondition: The staff member is logged into the system (use case 1). The appointment information is stored in the system.

Postcondition: The system shows the list of TA appointments and relative percentages, so that staff can see them.

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Date: March 8, 2019

Use Case #: 11 **Use Case Name:** Send Offer

Actors: Payroll Staff, Appointed TA

Description: The payroll staff sends the TA appointment offers to the appointed TAs. Then the appointed TA can receive the offer and have a view.

Trigger: The payroll staff wants to inform the appointed TAs of the appointment details.

Assumptions: The staff have the right to see the appointment information.

Precondition: The payroll staff is logged into the system (use case 1). The TA has been assigned to a course (use case 9).

Postcondition: The appointed TA receive the offer, so that they are able to respond to the offer.

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Date: March 8, 2019

Use Case #: 12 **Use Case Name:** Respond to Offer

Actors: Appointed TA, CSE Staff

Description: The appointed TA responds to the offer. They can accept or decline the offer, then the system will notify the CSE staff about TAs' choices.

Trigger: The TA has received an appointment offer.

Assumptions: The staff are able to get relative information about TA assignments and offers.

Precondition: The appointed TA is logged into the system (use case 1). The TA has received an appointment offer (use case 11).

Postcondition: The CSE staff will see the response of the appointed TAs.

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Date: March 8, 2019

Use Case #: 13 **Use Case Name:** Update Appointments

Actors: CSE Staff, Appointed TA, Faculty, Payroll Staff

Description: The CSE staff updates the appointment status when necessary. As a result, the corresponding TA, the faculty and payroll staff will all be notified of the change(s).

Trigger: The staff member wants to make some changes for appointment(s), based on the real situations.

Assumptions: The staff are able to get relative information about TA assignments and offers, and make decisions and changes.

Precondition: The staff member is logged into the system (use case 1). There has been a change to the appointment(s).

Postcondition: The appointment status has been updated, and relative users will get notified of the changes.

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Date: March 8, 2019

Use Case #: 14 **Use Case Name:** Make Announcements

Actors: Appointed TA, CSE Staff, Faculty, and Payroll Staff

Description: The CSE staff make announcement(s), and notify relative recipients. Different announcements can be made for different people (Appointed TA, Faculty, and Payroll Staff), but they must be users in the system.

Trigger: The CSE staff wants to make an announcement to other users.

Assumptions: The CSE staff have the right to get relative information of TA assignments.

Precondition: The staff member is logged into the system (use case 1).

Postcondition: Corresponding recipients receive the announcements, and are able to view them.

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User Requirements

Requirement #: 1 **Use Case:** 1

Date: March 8, 2019

Introduction: The system requires users to enter valid account information before they are able to use it.

Inputs: x500 and password

Description: The user enters an ID and password. Only if the following requirements are met the user are officially logged in:

1. The x500 is valid
2. The password matches the x500

If the user successfully logged in, the user is able to use the system. Otherwise the user cannot use the system.

Outputs: The user successfully logins, or the user is denied to enter the system.

Persistent Changes: The user will be logged in. The user is able to use the system and reach the data in the system.

Related Requirements: None

Support Materials: UMN network database

Requirement #: 2 **Use Case:** 2

Date: March 8, 2019

Introduction: The system must allow prospective TAs to complete a TA application.

Inputs: Application information

Description: The application shall allow the student to:

1. Specify the type of appointment they want to be assigned (Req 3)
2. Choose course preferences (Req 4)
3. Enter test scores and qualifications (Req 5)
4. Enter personal and academic details (Req 6)

The students will be allowed to submit the application only after they complete the above information. Afterwards, all the information will be stored in the data system.

Outputs: Confirmed application submission

Persistent Changes: CSE staff will be able to see the application information from the system.

Related Requirements: 3, 4, 5, 6

Support Materials: N/A

Requirement #: 3 **Use Case:** 2

Date: March 8, 2019

Introduction: The user shall be allowed to specify the type of appointment they want to be assigned to.

Inputs: Type of appointment

Description: The prospective TA shall be allowed to specify the type of appointment requested, which will indicate how many percentage of work they want to be involved.

Outputs: None

Persistent Changes: The type information will be stored in the data system.

Related Requirements: 2

Support Materials: N/A

Requirement #: 4 **Use Case:** 2

Date: March 8, 2019

Introduction: The user shall be allowed to choose preferred courses in order.

Inputs: Course preference

Description: The prospective TA shall be allowed to choose some courses in order how they want to be assigned to. The total number of courses they can choose should be fixed (i.e., 3).

Outputs: None

Persistent Changes: The preference information will be stored in the data system.

Related Requirements: 2

Support Materials: N/A

Requirement #: 5 **Use Case:** 2

Date: March 8, 2019

Introduction: The user shall be allowed to enter their qualifications and academic information.

Inputs: Qualification information and academic details

Description: The prospective TA shall be allowed to enter relative information to prove their qualification. For example, they shall provide details like their related test scores and technical GPA. The System shall have places for the users to write and fill in different answers.

Outputs: None

Persistent Changes: The data system will store the qualification information from the users.

Related Requirements: 2

Support Materials: N/A

Requirement #: 6 **Use Case:** 2

Date: March 8, 2019

Introduction: The user shall be allowed to provide personal details.

Inputs: Academic details

Description: The prospective TA shall be allowed to enter their personal and academic details, which can be their majors and CSCI courses they took before. The System shall have places for the users to write and fill in different answers.

Outputs: None

Persistent Changes: The data system will store the personal information from the users.

Related Requirements: 2

Support Materials: N/A

Requirement #: 7 **Use Case:** 3

Date: March 8, 2019

Introduction: The faculty shall be allowed to submit requests for the total number of TAs they need for courses, and specific TA(s) they want to work with.

Inputs: Request information

Description: The system shall allow the user to enter information about the amount of TAs and specific TA(s) they want. There should be a message indicating whether the actions succeed or an error.

Outputs: Confirmed request submission or an error

Persistent Changes: The data system will store the request information from the users.

Related Requirements: None

Support Materials: N/A

Requirement #: 8 **Use Case:** 5

Date: March 8, 2019

Introduction: The faculty shall be allowed to submit recommendations of specific TA(s) to work for certain courses.

Inputs: Recommendation information

Description: The system shall allow the user to enter information about the TA's they want to recommend. There should be a message indicating whether the actions succeed or an error.

Outputs: Confirmed recommendation submission or an error

Persistent Changes: None

Related Requirements: None

Support Materials: N/A

Requirement #: 9 **Use Case:** 5

Date: March 8, 2019

Introduction: The system shall allow CSE staff to view all the course and position information stored inside.

Inputs: None

Description: The user shall be able to see the stored course and position information. In details, it contains the list of courses that will be offered and the corresponding estimated amount of TAs needed for them.

Outputs: None

Persistent Changes: None

Related Requirements: None

Support Materials: Course database

Requirement #: 10 **Use Case:** 6

Date: March 8, 2019

Introduction: The system shall allow CSE staff to view all the budget information stored inside.

Inputs: None

Description: The user shall be able to see the stored budget information. In details, it contains the total amount of money that can be used for TAs for the whole semester, and the number of TAs that can be assigned under that budget.

Outputs: None

Persistent Changes: None

Related Requirements: None

Support Materials: None

Requirement #: 11 **Use Case:** 7

Date: March 8, 2019

Introduction: The system shall allow CSE staff to view all the stored application information in a certain order.

Inputs: Sorting attribute(s)

Description: The user shall be able to see the application information. In details, it may be sorted by the course preferences, their priority scores and so on.

Outputs: An ordered list of applications submitted by prospective TAs.

Persistent Changes: None

Related Requirements: 2, 3, 4, 5, 6

Support Materials: Application database

Requirement #: 12 **Use Case:** 8

Date: March 8, 2019

Introduction: The system shall allow CSE staff to view all the related reachable data.

Inputs: Data from previous years

Description: The user shall be able to get the information from former years, including appointment history, course information and other statistics.

Outputs: Data storage

Persistent Changes: Data will be stored in system and CSE staff can have a view.

Related Requirements: None

Support Materials: Database of previous data

Requirement #: 13 **Use Case:** 2

Date: March 8, 2019

Introduction: The system shall compute priority scores for all the applicants based on the information they enter in the applications as well as the previous data reached by the CSE staff.

Inputs: TA application, previous data

Description: The system shall allow CSE staff to view the TA applications that have been submitted. A priority score shall be determined for each applicant, based on the several attributes, like the programs they are in, their previous TA experience and their GPA. The result will be shown in a certain order, such as from the highest to the lowest.

Outputs: Priority scores

Persistent Changes: The system will store a bunch of priority scores for the applicants.

Related Requirements: None

Support Materials: Application database

Requirement #: 14 **Use Case:** 9

Date: March 8, 2019

Introduction: The system shall allow CSE staff to assign TAs to the most appropriate course for them, based on the real demands.
Inputs: TA application, priority scores

Description: The system shall allow CSE staff to make decisions on the TA assignments. The decisions should be made considering the application information and courses in need. Staff should be able to choose the best matching option for applicants.

Outputs: TA appointment decisions

Persistent Changes: New appointment information will be stored in the system, and Payroll staff and CSE staff will be able to have a view.

Related Requirements: 9, 14

Support Materials: Application database and course information

Requirement #: 15 **Use Case:** 10

Date: March 8, 2019

Introduction: The system shall allow payroll staff to view the TA appointments.

Inputs: Appointment information

Description: Payroll staff shall be allowed to see the appointment information including some details such as the percentage values. They will see the most updated data in case some changes are made.

Outputs: None

Persistent Changes: None

Related Requirements: 14

Support Materials: Database of the appointments

Requirement #: 16 **Use Case:** 11

Date: March 8, 2019

Introduction: The system shall allow payroll staff to send out offers to the appointed TAs.

Inputs: Appointment information

Description: Payroll staff shall be allowed to send out offers to TAs, who have been assigned to courses. The offer will include many details about the assignments.

Outputs: Offers notification

Persistent Changes: The appointed TAs will be able to respond to the offers.

Related Requirements: 14, 15, 20

Support Materials: Database of the appointments

Requirement #: 17 **Use Case:** 12

Date: March 8, 2019

Introduction: The system must allow appointed TAs to respond to an appointment offer.

Inputs: TA offers, response choices which are acceptance or rejection

Description: Appointed TAs shall be allowed to choose whether they are willing to accept the offer or not. The response will be stored in the system.

Outputs: Response to the offer

Persistent Changes: The system will store the responses and show them to CSE staff as notifications.

Related Requirements: 16, 19, 20, 22

Support Materials: Database of the appointments

Requirement #: 18 **Use Case:** 13

Date: March 8, 2019

Introduction: The system shall allow CSE staff to update appointments when there are necessary changes.

Inputs: TA appointment information

Description: The CSE staff should be allowed to make some changes to the appointments when there is a need, such as recording the responses from appointed TAs.

Outputs: Updated appointments

Persistent Changes: The appointments will be updated and stored in the system. Then payroll staff, faculty and appointed TAs will receive notifications about the changes.

Related Requirements: 19, 20

Support Materials: Database of the appointments

Requirement #: 19 **Use Case:** 14

Date: March 8, 2019

Introduction: The system shall allow CSE staff to make announcements.

Inputs: Announcements, Recipients

Description: CSE staff shall be allowed to write and send announcements to other users, including payroll staff, appointed TAs and faculty. They are able to choose different recipients for different messages.

Outputs: Users receive announcements

Persistent Changes: The announcement will be received by the target recipients and they can have a view.

Related Requirements: 20

Support Materials: N/A

Requirement #: 20 **Use Case:** 11, 12, 13, 14

Date: March 8, 2019

Introduction: There should be a way in the system to allow users receive notifications.

Inputs: Notification, Recipient

Description: All users shall be able to receive notifications from other users when they are involved in them. A notification shall be sent in the following situations:

1. Payroll staff sends out offers to appointed TAs (Req 16)
2. An appointed TA responds to the offer (Req 17)
3. CSC staff updates the offers when necessary (Req 18)
4. Users receive announcements (Req 19)

Outputs: Received Notification

Persistent Changes: Related users will be able to see the content of the notifications.

Related Requirements: 16, 17, 18, 19

Support Materials: N/A