

---

# **User Requirements Specification for TA Processing System (TAPS)**

**Prepared by Moti Begna**

**University of Minnesota**

**Computer Science Department**

**February 9<sup>th</sup>, 2019**

# Table of Contents

<b>Table of Contents .....</b>	<b>ii</b>
<b>1. Introduction.....</b>	<b>1</b>
1.1 Purpose/Product Scope .....	1
<b>2. User Requirements.....</b>	<b>2</b>
2.1 Student Features.....	2
2.2 Administrative Staff Features .....	4
2.3 Payroll Staff Features .....	7
2.4 Faculty Member Features .....	8
<b>3. Use Cases.....</b>	<b>10</b>
3.1 Use Case Diagram.....	10
3.2 Use Case Descriptions .....	11

# **1. Introduction**

## **1.1 Purpose/Product Scope**

TAPS will be a backend system that will process various user requests submitted by University campus community members such as students, faculty, staff, and administrators. This system is designed to help faculty members organize and handle large amounts of TA recommendations and allow prospective TA's to enter their course preferences as well as enter their own personal and academic details. TAPS will also allow administrators to assign TAs to courses, sort their preferences based on different attributes, as well as make announcements and status updates to notify TAs, faculty, and payroll. In addition, TAPS will allow payroll managers to view appointments and percentage types, as well as a method for the system itself to utilize third-party software to acquire data.

## 2. User Requirements

### 2.1 Student Features

#### 2.1.1: The system shall allow eligible users to apply for requested positions

Priority level: HIGH

Use Case: 1 (Login)

Inputs: User Credentials

2.1.1.a: Users are allowed to apply if and only if:

REQ-1: Their student x500 and password shows that they are at a graduate level at the University

2.1.1.b: Users will not be allowed to apply if (2.1.1.a) is not met

REQ-1: A visual message will be sent to the screen to notify the user that they are not allowed to apply for a TA position

#### 2.1.2: If a user is allowed access (2.1.1.a), the system will allow them to enter pertinent information to the application:

Priority level: HIGH

Use Case: 2 (TA Application)

Inputs: Students personal information

2.1.2.a: The application will not be allowed to be sent through the system if required information is not given

REQ-1: A visual message will be sent to the screen to notify the student to enter this information.

2.1.2.b: The system will allow the student to submit the type of appointment to be requested

REQ-1: A text input module will be available for the student to enter the type of appointment they request

REQ-2: If the selection is not given, the application will not be sent through (2.1.2.a)

2.1.2.c: The system will allow the student to submit prior appointment details

REQ-1: A text input module will be available for the student to enter prior appointment details

2.1.2.d: The system will allow the student to enter course preferences and qualifications for those preferences

REQ-1: A drop down menu be available for the student to select their course preferences

REQ-2: A text input module will be available under the menu for the student to enter their qualifications for their preferred course

REQ-3: If a course preference or qualifications are not given, the application will not be sent through (2.1.2.a)

2.1.2.e: The system will the student to submit academic and technical scores

REQ-1: A text input module will be available for the student to enter their GPA

REQ-2: A text input module will be available for the student to enter their TOEFL score

REQ-3: A text input module will be available for the student to enter their SETTA score

REQ-2: If GPA is not given, the application will not be sent through (2.1.2.a)

2.1.2.f: The system will allow the student to submit personal and academic details

REQ-1: Multiple text input modules will be available for the student to enter their name, home address, email address, and phone number

REQ-2: Multiple selection input modules will be available for the student to select their nationality, sexual orientation, and preferred pronouns

REQ-3: A text input module will be available for the student to enter additional academic details

REQ-4: If personal and academic details are not given, the application will not be sent through (2.1.2.a)

**2.1.3: If all required information was given (2.1.2), the application will be allowed to be sent through the system**

Priority level: HIGH

Use Case: 2 (TA Application)

Inputs: None

2.1.3.a: The system will notify the student that the application was completed

REQ-1: A visual message will be sent to the screen to notify the student that they have successfully submitted an application

REQ-2: The message will contain a copy of the information they submitted

2.1.3.b: If a student has submitted an application, the system will allow them to edit their information before the application is closed

**2.1.4: If a student receives an offer by the universities administrative staff for a TA position (2.2.3.a) they will be allowed to accept or decline the offer**

Priority level: HIGH

Use Case: 3 (Accept or Decline)

Inputs: Student Selection (Accept/Decline)

2.1.4.a: The student will receive an email containing information relevant to the TA position

REQ-1: Information about the position offered to the student will be contained in the email, as well as information requiring the student to reply to the email regarding whether they accept or decline the offer.

REQ-2: A deadline for when the offer expires will be contained in the email

2.1.4.b: If the student responds accepting the offer, they will receive an email informing them of what they will have to do next, and the system will log their acceptance

2.1.4.c: If the student responds declining the offer, the system will log their rejection

2.1.4.d: If the student does not respond before the provided deadline, they will receive an email informing them that the offer has expired, and the system will log their response as a rejection

## **2.2 Administrative Staff Features**

**2.2.1: The system shall allow users to perform administrative tasks**

Priority level: HIGH

Use Case: 1 (Login)

Inputs: User Credentials

2.2.1.a: Users are allowed to perform administrative tasks if and only if:

REQ-1: Their credentials show that they are a hired administrator at the University

2.2.1.b: Users will not be allowed administrative access if (2.2.1.a) is not met

REQ-1: A visual message will be sent to the screen to notify the user that they are not recognized by the system as having administrative credentials

**2.2.2: If a user is allowed access (2.2.1.a), the system will allow them to acquire administrative level information:**

Priority level: HIGH

Use Case: 4 (Admin Level Access)

Inputs: None

2.2.2.a: The system will allow the administrator to access the departments financial budget

REQ-1: Budgeting information made available by the system will be supplied by the University Dean's office

REQ-2: Budgeting information made available by the system will contain a maximum limit of TA positions that can be appointed for the current year

REQ-3: Any instances of going over the budget will be highlighted

2.2.2.b: The system will allow the administrator to access a list of courses being offered

REQ-1: An exhaustive list of all department courses offered will be listed numerically by their course number

REQ-2: An estimated number of required TAs will be visible underneath each course that is listed

2.2.2.c: The system will allow the administrator to access statistical information from previous years

REQ-1: An exhaustive list of the number of TA positions held for each course from previous years will available

REQ-2: A list of the number of students enrolled in each course from previous years will be available

REQ-3: The total cost of hiring TAs from previous years will be available

2.2.2.d: The system will allow the administrator to view the current years TA applications

REQ-1: An exhaustive list of all TA applications will be listed categorically according to their status as either a PHD, MS, or BS student

REQ-2: Applications that have entered prior appointments (2.1.2.c) will be listed higher within their respective category

REQ-3: All TAs full application responses are made available to access

2.2.2.e: The system will allow the administrator to view any recommendations for TA positions given by faculty members

**2.2.3: They system will allow the administrator to update TA appointment statuses**

Priority level: HIGH

Use Case: 5 (TA Appointment)

Inputs: None

2.2.3.a: The system will give the option to place students into TA positions for any department course

REQ-1: An exhaustive list of all department courses offered will be listed numerically by their course number

REQ-2: A text input module will be available for the administrator underneath each course to enter a student for a TA position

REQ-3: An option to add more TAs will be made available underneath each text module

REQ-4: Courses with a TA position that is required will be highlighted

REQ-5: Courses with a TA position that is required will require administrators appoint positions

REQ-6: An option to state the priority of the appointed student will be made available

2.2.3.b: The system will allow the administrator to send conditional offers to appointed TAs

REQ-1: A text input module will be made available for the administrator to detail the contents of the condition

REQ-2: The conditional offer will be emailed to appointed TAs

**2.2.4: The system will notify administrators on a student's acceptance and/or rejection of a TA position offer**

Priority level: HIGH

Use Case: 3 (Accept or Decline)

Inputs: None

2.2.4.a: The system will list offer responses categorically based on whether a student accepted or rejected the offer

REQ-1: If the student accepted the offer, an email will be sent informing them of what they will have to do next, and the system will log their acceptance

REQ-2: If the student responds declining the offer, the system will log their rejection

REQ-3: If the student does not respond before the provided deadline, an email will be sent informing them that the offer has expired, and the system will log their response as a rejection

**2.2.5: The system will allow administrators to send notifications to University campus members**



Priority level: HIGH

Use Case: 6 (Administrative Notifications)

Inputs: None

2.2.5.a: The system will allow administrators to contact TA's, faculty, and payroll employees

REQ-1: A text input module will be available for the administrator to enter the contents of their notification

REQ-2: An option for the priority of the notification will be made available

REQ-3: An option for the specific recipient of the notification will be made available

REQ-4: If notification information and/or a recipient is not given, the system will not allow the notification to go through

REQ-5: If notification information is given, the system will push the notification to the outlined recipient.

## **2.3 Payroll Staff Features**

### **2.3.1: The system shall allow users to perform payroll related tasks**

Priority level: HIGH

Use Case: 1 (Login)

Inputs: User Credentials

2.3.1.a: Users are allowed to perform payroll related tasks if and only if:

REQ-1: Their x500 shows that they are a hired payroll staff member at the University

2.3.1.b: Users will not be allowed payroll access if (2.3.1.a) is not met

REQ-1: A visual message will be sent to the screen to notify the user that they are not recognized by the system as having payroll staff credentials

### **2.3.2: If a user is allowed access (2.3.1.a), the system will allow them to notify TAs**

Priority level: HIGH

Use Case: 7 (TA Notification)

Inputs: None

2.3.2.a: The system will allow payroll staff to send appointment details to TAs

REQ-1: A list of appointed TA positions by administrative staff will be made available

REQ-1: Information about the position offered to the student will be made available to be sent by payroll staff, as well as information requiring the student to reply to the email regarding whether they accept or decline the offer.

REQ-2: The offers will be sent out according to the priority listed by the administrator

### **2.3.3 The system will allow payroll staff to get notified about updates**

Priority level: HIGH

Use Case: 6 (Administrative Notification)

Inputs: None

2.3.3.a. The system will allow payroll staff to be notified when an administrator sends an appointment status update

## **2.4 Faculty Member Features**

### **2.4.1: The system shall allow users to perform faculty related tasks**

Priority level: HIGH

Use Case: 1 (login)

Inputs: User Credentials

2.4.1.a: Users are allowed to perform faculty related tasks if and only if:

REQ-1: Their x500 shows that they are a hired faculty member at the University

2.4.1.b: Users will not be allowed faculty access if (2.3.1.a) is not met

REQ-1: A visual message will be sent to the screen to notify the user that they are not recognized by the system as having faculty member credentials

### **2.4.2: If a user is allowed access (2.4.1.a), the system will allow them send TA recommendations to administrative staff**

Priority level: HIGH

Use Case: 8 (TA Recommendations)

Inputs: None

2.4.2.a: The system will allow faculty members to request specific students for TA positions:

REQ-1: A text input module will be made available for the faculty member to enter information regarding the student for which they are recommending

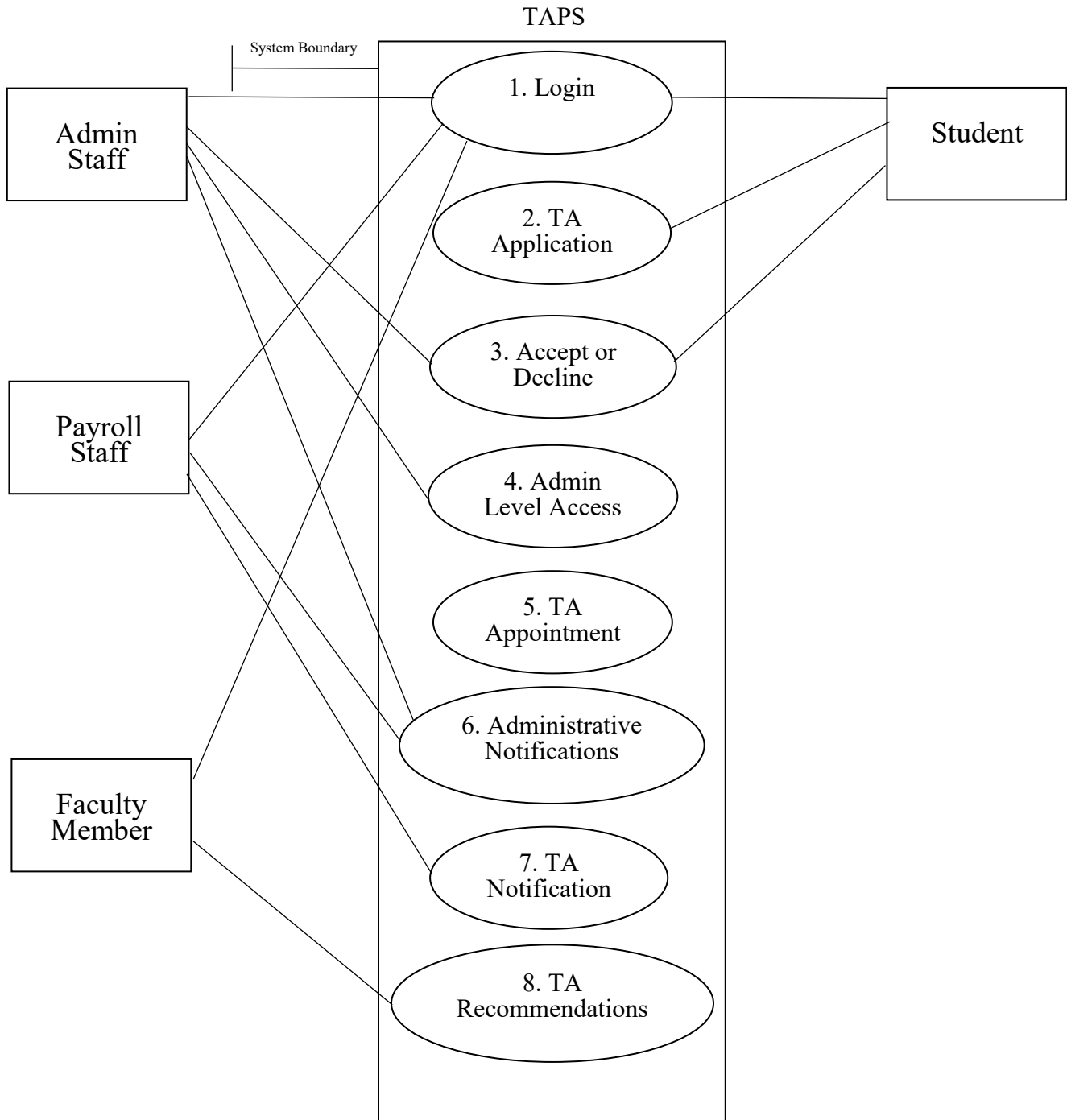
REQ-2: An attachment option will be made available for the faculty member to attach a recommendation

REQ-3: A text input module will be made available for the faculty member to enter additional information as to why they are making this request

2.4.2.b: The system will send request to administrative staff upon completion of the faculty members recommendation

### 3. Use Cases

#### 3.1 Use Case Diagram



## 3.2 Use Case Descriptions

### Use Case 1: Login

**Summary:** University campus members can access the system

**Actors:** Students, Administrative Staff, Payroll Staff, Faculty (all initiators)

**Type:** Primary and essential

**Basic Course of Events:**

1. User enters their x500
2. User enters their password
3. The system validates the x500 and password

**Exception Paths:** If the x500 and/or the password cannot be validated, the system will ask the user to enter the information again

**Cross-Ref:** 2.1.1, 2.2.1, 2.3.1, 2.4.1

### Use Case 2: TA Application

**Summary:** University students can apply for a TA appointment

**Actors:** Students (initiator)

**Type:** Primary and essential

**Basic Course of Events:**

1. Completion of use case login
2. Student enters the type of appointment they prefer
3. Student enters prior appointment details
4. Student enters course preferences and qualifications
5. Student enters academic and technical scores
6. Student enters personal and academic details
7. Student submits application
8. System validates required fields
9. Application is sent to administrators

**Exception Paths:** If steps 2, 3, 4, and 5 are not complete, the application will not be sent through the system, and the system will tell them to fill those fields before submission.

**Cross-Ref:** 2.1.2, 2.1.3

### **Use Case 3: Accept or Decline**

**Summary:** University students can apply for a TA appointment

**Actors:** Students (initiator), Administrative Staff

**Type:** Primary and essential

**Basic Course of Events:**

1. Completed use case TA Notification
2. Student receives email offer
3. Student can respond to the email accepting or declining the offer
  - a. (Potential path) Student accepts the offer
    - i. The system logs their acceptance
    - ii. Email is sent informing them of the next step
  - b. (Potential path) Student declines the offer
    - i. The system logs their rejection
  - c. (Potential path) Student does not respond to the offer
    - i. Email is sent informing them that their offer has expired
    - ii. The system logs their rejection

**Cross-Ref:** 2.1.4, 2.2.4

### **Use Case 4: Admin Level Access**

**Summary:** Administrative staff can access higher level information

**Actors:** Administrative Staff (initiator)

**Type:** Primary and essential

**Basic Course of Events:**

1. Completion of use case Login
2. Administrator (potentially) access financial budget
  - a. System displays budgeting information
  - b. System displays maximum limit of TA positions available for the current year
  - c. System displays any instances of going over budget
3. Administrator (potentially) access list of department courses being offered
  - a. System displays all department courses by course number
  - b. System displays estimated number of required TAs
4. Administrator (potentially) access statistical information from previous years
  - a. System displays the number of hired TA's for each course

- b. System displays the number of students enrolled for each course
  - c. System displays the total cost of hiring TA's for the department
- 5. Administrator (potentially) access the current years' TA applications
  - a. System displays all TA applications
- 6. Administrator (potentially) accesses faculty recommendations
  - a. System displays all faculty recommendations

**Cross-Ref:** 2.2.2

### **Use Case 5:** TA Appointment

**Summary:** Administrative staff can update TA appointment statuses

**Actors:** Administrative Staff (initiator)

**Type:** Primary and essential

**Basic Course of Events:**

- 1. Completion of use case Login
- 2. System displays a list of all department course offered numerically by course number
- 3. Administrator enters a student for a TA appointment underneath each course
- 4. Administrator enters the priority of the appointed student
- 5. Complete use case TA Notification

**Cross-Ref:** 2.2.3

### **Use Case 6:** Administrative Notifications

**Summary:** Administrative staff can send notifications to University campus members

**Actors:** Administrative Staff (initiator)

**Type:** Primary and essential

**Basic Course of Events:**

- 1. Completion of use case login
- 2. Administrator enters the contents of their notification
- 3. Administrator enters the priority of the notification
- 4. Administrator enters a recipient for the notification
- 5. The system pushes the notification to the outlined recipient

**Exception Paths:** If steps 2 and/or 4 are not complete, the notification will not be sent through the system, and the administrator will tell them to fill those fields before submission.

**Cross-Ref:** 2.2.5, 2.3.3

## **Use Case 7:** TA Notification

**Summary:** Payroll staff sends out TA appointment offer to student

**Actors:** Payroll Staff (initiator)

**Type:** Primary and essential

### **Basic Course of Events:**

1. Completed use case TA Appointment
2. Payroll staff receives list of appointed TA's
3. Payroll staff emails student information about the position offered
4. Complete use case Accept or Decline

**Cross-Ref:** 2.3.2

## **Use Case 8:** TA Recommendations

**Summary:** Faculty member can send TA recommendations to administrative staff

**Actors:** Faculty Member (initiator)

**Type:** Primary

### **Basic Course of Events:**

1. Completed use case Login
2. Faculty member enters student information
3. Faculty member attaches a recommendation page
4. Faculty member enters additional information regarding the recommendation
5. Recommendation is sent through the system to administrative staff

**Cross-Ref:** 2.4.2