

# Product Requirements

**Project:** Optimal Accessibility

**Team:** Group 7

**Team Members:** Tyler Adam Martinez and Henry Peeples

## Revision History

Date	Version	Description	Author
06-15-2022	1.0	Software Requirement	Group 7
06-20-2022	1.1	Updated Use Case Diagram	Tyler Adam Martinez

## Brief problem statement

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UNT funds our team to develop an application to rate the accessibility of academic poster boards.

Our team conducted a series of interviews with educators and targeted users to better understand what features they wish to see in a new application. As a result, we were able to identify the following goals:

- Giving students valuable feedback on their posters before final submission.
- Giving teachers a faster way to grade student posters from an accessibility standpoint.

This will be implemented through a web application and backend API where **teachers** can access the posters of all their students, and **students** can access their posters.

It will also allow both students and teachers to enter their personal information, and share accessibility scores of classroom posters. Overall, this application will provide a place where teachers and students can see the classroom posters and their effective accessibility scores.

# Stakeholders

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## UNT - Investor and Board of Directors

**UNT** is funding this project and needs to approve the purpose of this product; therefore, must be included from day one in the product life cycle. This can be done by scheduling a couple of presentations and meetings with the professor which ensure the best possible quality as result, and he can provide us with many resources if needed.

## Students & Teachers

They are the product's end-users and need to be included in every step to ensure project success. This will be done through interviews, and focus groups to gather their feedback. Furthermore, a group of selected students and teachers will test the product before it is launched to make sure to adjust any changes.

## Software Engineering Team

The software engineering team is responsible for the project's life cycle. These are some of their responsibilities.

- Outlining the project requirements.
- Implementing the project and its features.
- Conducting software testing.
- Dividing the project into tasks and assigning these to team members.
- Closely monitoring task progression.
- Resolve any issues which delay the life cycle.

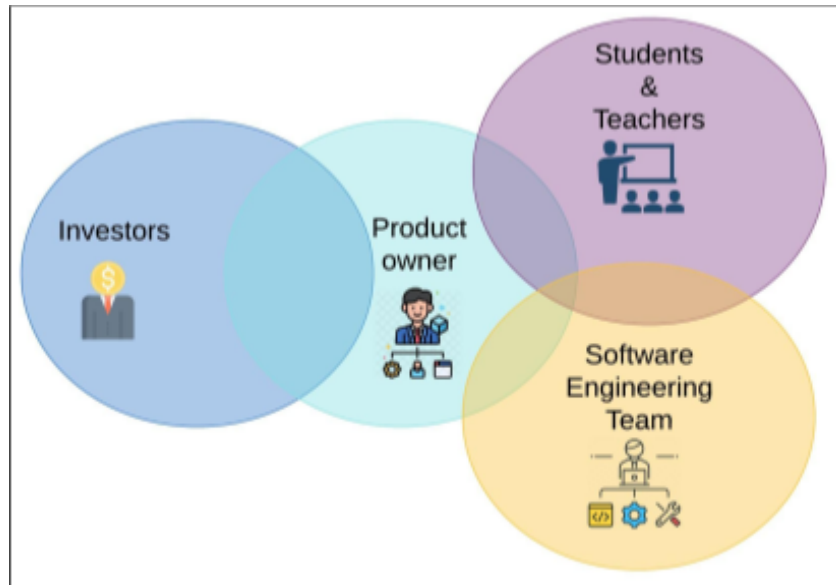


Fig.1 Stakeholders relation

## Users

The target user:

- Must be familiar with file management specifically uploading photos from their machine onto the website.
- Must be familiar with internet navigation.
- Have an updated browser.

## System requirements

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The student portal will consist of a centralized web-based application that has a list of requirements as follows: The project shall be compatible with the most recent web browser versions.

- The project shall use **Javascript and Go** as programming languages.
- The project shall use **React v18.2.0** as a Framework.
- The project shall use a **MongoDB** database
- Firebase as a BackEnd database

## Feature requirements

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### 1. Functional

No.	User Story Name	Description	Release
1	Registration	The system shall allow the user to register by providing his personal information (EUID, First Name, and Last Name) and also set credentials ( password).	R1
2	Login	The user shall be able to sign in to his account by providing EUID and password.	R1
3	Upload Images	The user shall be able to upload pictures from their local computer to the website's database.	R1

4	Rated Poster Accessibility Score	The user shall see the image accessibility score after uploading the image and a short time of processing.	R2
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## 2. Non-Functional

### 2.1. Usability

#### 2.1.1. User Interface

- The system will offer a uniform look.
- The system shall provide error tolerance and UI will be easy to learn and navigate.
- The system will have icons and informative text.

#### 2.1.2. Accessibility

- The system is able to be accessed by both normal and disabled people.
- For all images, the system will provide alt text which tells the screen reader what information the image provides. If the image is just decorative, the system will have null alt text so that the screen reader can skip it.

### 2.2. Reliability & Availability

- The system will be able to handle a large number of students and teachers at any time of day or night.
- The system will provide reliable database storage of student and teacher information.

### 2.3. Performance

- The system will load quickly and give accessibility scores quickly.
- The system performance will depend on the client's internet connection and hardware components.

## 2.4. Security

- The system will not allow unauthorized access.
- Only the users with the teacher role can manage the following: classes, assignments, and grades.
- The system database will only be accessible to an administrator.
- The system will not display passwords.

## 2.5. Data integrity

- The system will never inadvertently lose student or teacher data.
- Data such as scores will be readily available whenever needed.

# Use case diagram

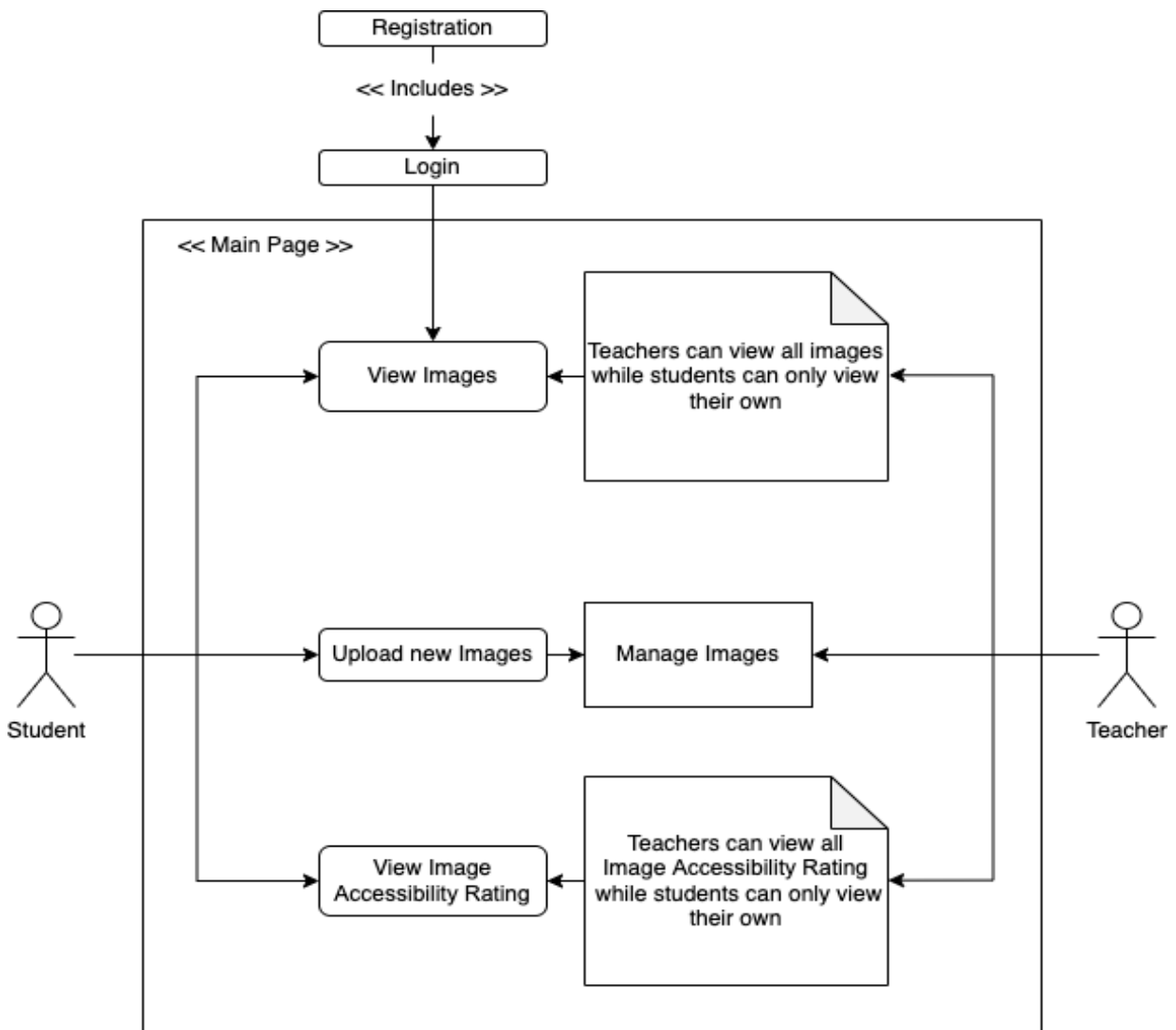




Fig.2 Use Case Diagram  
**Use case description**

Use Case Number	UC-01
Use Case Name	<b>Registration</b>
Overview	The user will enter his or her personal information upon registration.
Actor(s)	Teacher, Student
Pre-condition(s)	The registration system has been set up.
Scenario Flow	<b>Main (success) Flow:</b> <ol style="list-style-type: none"><li>1. The user selects the option to register.</li><li>2. System requests personal information.</li><li>3. The user provides personal information.<ol style="list-style-type: none"><li>a. EUID</li><li>b. First Name</li><li>c. Last Name</li><li>d. Password</li></ol></li><li>4. The system verifies the required information.<ol style="list-style-type: none"><li>a. If the provided information is invalid, the system will display an error message and return to <b>Step 2</b>.</li><li>b. If validation is successful, the system will save the new account into the database and display a confirmation to the user that their account was created.</li></ol></li></ol>
Alternate Flows	The user will have the chance to cancel a registration after <b>Step 2</b> by clicking on the "Cancel" button. The system will then display the initial registration page.

Post Condition	The system will not store the user information unless the user clicks on “Sign Me Up” and after the system verifies the personal information provided matches the university’s data.
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Use Case Number	UC-02
Use Case Name	<b>Login</b>
Overview	The user will enter his or her <b>EUID</b> and <b>password</b> to be able to log in.
Actor(s)	Teacher, Student
Pre-condition(s)	The user should already be registered with the system.
Scenario Flow	<b>Main(success) Flow:</b> <ol style="list-style-type: none"> <li>1. The user enters his or her credentials and clicks on “Submit” <ul style="list-style-type: none"> <li>• EUID</li> <li>• Password</li> </ul> </li> <li>2. The system will verify the information provided.</li> <li>3. The user will be directed to their dashboard/profile.</li> </ol>
Alternate Flows	Not applicable.
Post Condition	The user will be able to access their dashboard/profile.

Use Case Number	UC-03
Use Case Name	<b>Submit Photo</b>

Overview	The student will be able to upload images.
Actor(s)	Student
Pre-condition(s)	The student must be logged in.
Scenario Flow	<b>Main (success) Flow:</b> <ol style="list-style-type: none"> <li>1. The student will have the option to upload a file.</li> <li>2. The student will select the desired photo/file from their local file system.</li> <li>3. Click “<b>Submit</b>” to upload the photo.</li> </ol>

Alternate Flows	If “ <b>Submit</b> ” is not selected, the file will not be uploaded.
Post Condition	The file will be submitted with both student and teacher having access.
Use Case Number	UC-04
Use Case Name	<b>Image Accessibility Grade</b>
Overview	The program will be able to grade posters submitted by students.
Actor(s)	Software
Pre-condition(s)	The student must have submitted a poster to be graded.
Scenario Flow	<b>Main (success) Flow:</b> <ol style="list-style-type: none"> <li>1. The image processing program will take the students poster and rate it for accessibility.</li> <li>2. That rating/grade will be stored so the students and teachers can view it.</li> </ol>
Alternate Flows	Not applicable
Post Condition	The grade will be available to both teacher and student.

Use Case Number	UC-5
Use Case Name	<b>View Posters</b>
Overview	Users will be able to view posters that have been uploaded.
Actor(s)	Teacher, Student
Pre-condition(s)	Users must be logged in to see posters
Scenario Flow	<b>Main (success) Flow:</b> <ol style="list-style-type: none"> <li>2. On the course page, the user must select “<b>View Posters</b>”.</li> <li>3. The user can select a poster to view more details.</li> </ol>
Alternate Flows	Teachers can see all student posters while students can only see their posters.
Post Condition	The user will see a list of posters for the selected course.

Use Case Number	UC-6
Use Case Name	<b>View Grades</b>
Overview	<ul style="list-style-type: none"> <li>• Users will be able to view grades for posters.</li> <li>• Teachers will have access to grades for all their students.</li> <li>• Students will have access to their grades.</li> </ul>
Actor(s)	Teacher, Student
Pre-condition(s)	The user must be logged in.

Scenario Flow	<b>Main (success) Flow:</b> <ul style="list-style-type: none"> <li>• <b>Student</b> <ol style="list-style-type: none"> <li>1. The page will have a “<b>Grades</b>” tab for selection.</li> <li>2. Once selected, the student will see all their poster grades.</li> </ol> </li> <li>• <b>Teacher</b> <ol style="list-style-type: none"> <li>1. The page will have a “<b>Grades</b>” tab for selection.</li> <li>2. A list of students will appear.</li> <li>3. Once a student is selected, the teacher will see all their grades.</li> </ol> </li> </ul>
Alternate Flows	Not applicable.
Post Condition	Students will see the grade page with their grades for the selected course. The teacher will see the grade page for the selected student in the course.

Use Case Number	UC-7
Use Case Name	<b>Manage Images</b>
Overview	The teacher will have the ability to look at all student posters and have the option to remove them if needed.
Actor(s)	Teacher
Pre-condition(s)	The teacher must be logged in.
Scenario Flow	<b>Main (success) Flow:</b> <ol style="list-style-type: none"> <li>1. The main page will have a “<b>Student Posters</b>” tab for selection.</li> <li>2. Once selected, the teacher will see all posters uploaded by students.</li> </ol>
Alternate Flows	Not applicable.
Post Condition	The student posters page will show a list of students and their posters.

