Software Requirements Specification

for

Project Grading System (PGS)

Version 2.0

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1. Introduction

1.1 Purpose

The purpose of this document is to provide a comprehensive overview of the PGS. It aims to clarify the system's purpose, features, interfaces, functionalities, operational constraints, and responses to outside influences. This document targets both stakeholders and developers, as a proposal for approval by Dr. Varol.

1.2 Document Conventions

- Font: Microsoft JhengHei UI
- Font Size: 20 for Main Headings
- Font Size: 16 for Subheadings
- Font Size: 12 for the rest of the document

1.3 Intended Audience and Reading Suggestions

The document serves as a guide for developers, managers, and stakeholders of the PGS, detailing the PGS's Requirements Specification. It begins with use cases for actors then program's requirements.

1.4 Product Scope

The PGS software system is designed for educational settings, enabling students to create accounts for submitting their project forms. teachers can create accounts to grade the projects.
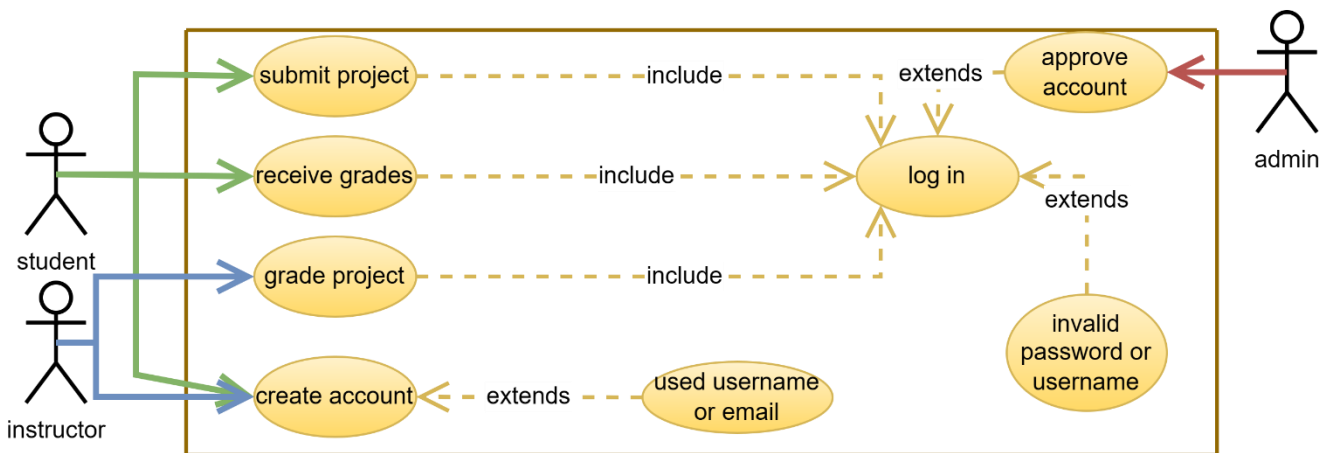
1.5 References

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.*

2. Overall Description

2.1 Product Perspective

has 3 actors; Student: submit projects, view grades. Instructor: grades projects. Admin: approves accounts.
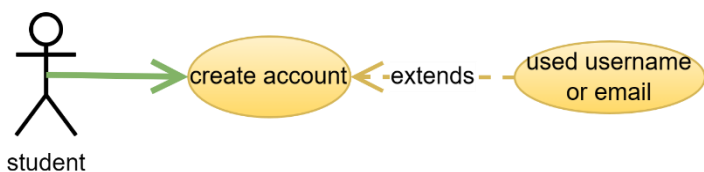

2.2 Product Functions

This section outlines the user use-cases. We have three users; instructor, student, admin.

2.2.1 Student Use-Cases: The student has the following sets of use cases:

1. Create account:

Brief Description / Goal: The "Create Account" functionality enables students to register for a new account on the PGS website. It allows students to submit their projects after approvement.

Pre-conditions:

1. The student must have computer connected to the internet with browser.

Initial Step-By-Step Description / scenario:

1. **Accessing Registration Page:** The student navigates to the "sign up" page.
2. **Providing User Information:** The student fills out the registration form, providing necessary details such as: Full Name, Email Address, Password.
3. **Submitting Registration Form:** the student clicks on the "sign up" button.
4. **Confirmation:** Upon successful registration, the system confirms the creation of the account.
5. **Awaiting approval:** The student is awaiting administrative approval for their chosen major to access their account. They will receive an email notification regarding approval from the PGS team.

Post-conditions:

1. The student's account information is securely stored in the PGS database, and they receive confirmation of successful registration.
2. The student can log in using their provided credentials after the admin approves their majors.

Exceptions:

1. **Used username or email:** If the username or email address is already used, the student is prompted to provide a different username or email address.
2. **Submit project Use-Case:**
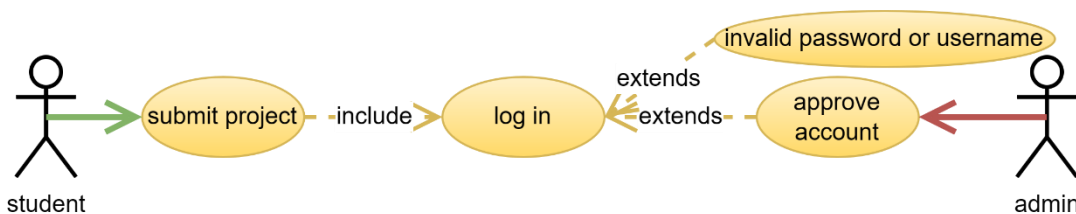
Brief Description / Goal: submit project allows students to upload projects for grading by instructors.

Pre-conditions:

1. The student must have a valid and approved account and be logged in to the PGS website.
2. The student must have the file of project to upload.

Initial Step-By-Step Description / scenario:

1. **Accessing the "Submit Project" Section:** The student navigates to the "Submit Project" section within the PGS website after logging in.
2. **Entering project Details:** The student enters project required details.
3. **Uploading project file:** The student uploads project file.

4. **Submission Section:** student clicks on the "Submit project" button.

Post-conditions:

1. The project details and uploaded files are successfully stored in the PGS database, linked to the student's account for future reference and grading.
2. The student receives confirmation of successful project submission

Exceptions:

1. **Invalid password or username:** If the username or password provided during the login process is incorrect, an error message is displayed, prompting the student to enter the correct credentials.
2. **Account not approved:** If the administrator has not yet approved the user's major, the user will be unable to log into the system.
3. **recieve grades Use-Case:**
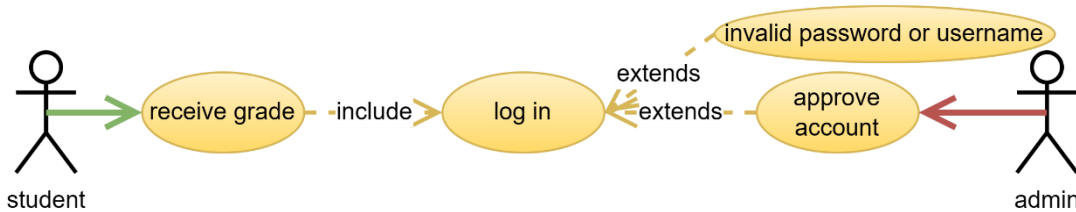
Brief Description / Goal: this functionality enables students to view grades provided by instructors.

Pre-conditions:

1. The student must have submitted a project using the "Submit Project" functionality.
2. The instructor must have graded the submitted project.

Initial Step-By-Step Description:

1. **Accessing the "my projects" Section:** The student navigates to the "My Projects" section.
2. **Reviewing Grades:** The student read through the grades provided by the instructor.

Post-conditions:

1. The student successfully accesses and reviews their grades provided by the instructor.

Exceptions:

1. **Invalid password or username:** If the username or password provided during the login process is incorrect, an error message is displayed, prompting the student to enter the correct credentials.
2. **Account not approved:** If the administrator has not yet approved the user's major, the user will be unable to log into the system.

2.2.2 Instructor use-cases: The teacher has the following sets of use cases:

1. **Create account:**

Brief Description / Goal: The "Create Account" functionality enables instructors to register for a new account on the PGS website. It allows instructors to view and grade students' projects.

Pre-conditions:

1. The instructor must have computer connected to the internet with browser.

Initial Step-By-Step Description / scenario:

1. **Accessing Registration Page:** The instructor navigates to the "sign up" page.
2. **Providing User Information:** The instructor fills out the registration form, providing necessary details such as: Full Name, Email Address, Password.
3. **Submitting Registration Form:** the student clicks on the "sign up" button.
4. **Confirmation:** Upon successful registration, the system confirms the creation of the account.
5. **Awaiting approval:** The instructor is awaiting administrative approval for their chosen major to access their account. They will receive an email notification regarding approval from the PGS team.

Post-conditions:

1. The instructor's account information is securely stored in the PGS database, and they receive confirmation of successful registration.
2. The instructor can log in using their provided credentials after the admin approves their majors.

Exceptions:

1. **Used username or email:** If the username or email address is already used, the instructor is prompted to provide a different username or email address.
2. **Grade project Use-Case:**
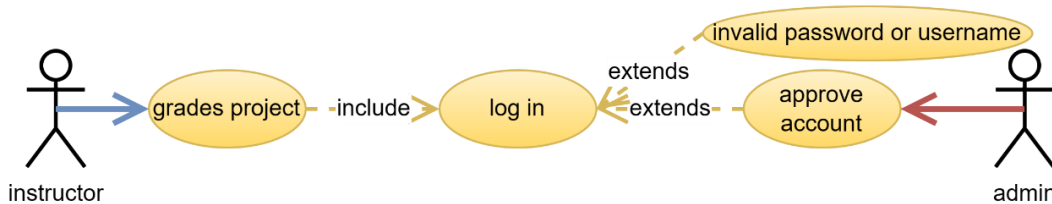
Brief Description / Goal: "Grade Project" functionality enables instructors to grade projects for students.

Pre-conditions:

1. The instructor must have a valid and approved account and be logged in to the PGS.
2. Projects submitted by students must exist in the system.
3. The "Teacher Page" section must be accessible and available within the PGS website.
4. The instructor must have selected a project to grade.

Initial Step-By-Step Description:

1. **Accessing Submission Section:** The instructor navigates to the "Teacher Page".
2. **Selecting Project to Grade:** The instructor chooses the specific project to assign grades.
3. **Entering Grades:** The instructor inputs grades for the selected project submission. Which enable the student to view it.

Post-conditions:

1. The instructor successfully assigns grades for the selected project submission.
2. Students receive the grades of their projects.

Exceptions:

1. **Invalid password or username:** If the username or password provided during the login process is incorrect, an error message is displayed, prompting the student to enter the correct credentials.

2. **Account not approved:** If the administrator has not yet approved the user's major, the user will be unable to log into the system.

2.2.3 Admin use-cases: The Admin has the following use case:

1. **Approval and Deletion of User Accounts Based on Major use-case:**
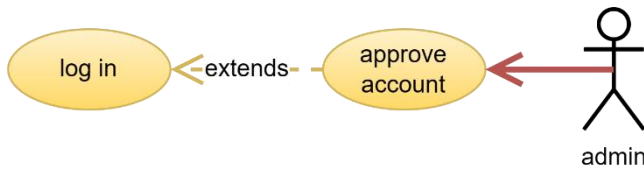
Brief Description / Goal: approving or rejecting selected major of user and managing account deletions.

Pre-conditions:

1. Users have submitted their chosen major for approval.
2. Admin privileges are accessible to manage user accounts.

Initial Step-By-Step Description:

1. Admin selects the pending major approval section. Then approve or reject the request.
2. The admin chooses the account they wish to remove and proceeds with its deletion.

Post-conditions:

1. After approval, the system will send a notification to the user's email confirming the acceptance of their chosen major, granting them access to their accounts.
2. Deleted accounts are permanently removed from the system.

2.3 User Classes and Characteristics

The main users of the PGS website are college students and instructors. Students will primarily use the system for submitting projects, checking grades, while instructors will utilize it for grade projects.

2.4 Operating Environment

PGS is designed for Windows 10 or later. Recommended hardware includes Pentium 4 processor or equivalent, with 500 MB of disk space for minimum operation. For enhanced performance Intel Core i5 processor or equivalent, 1 GB of disk space are advised. Users also need a web browser and email account.

2.5 Design and Implementation Constraints

require essential technologies, and databases, enforced by security protocols to safe user information.

2.6 User Documentation

PGS has by comprehensive user documentation to facilitate efficient utilization of its features.

2.7 Assumptions and Dependencies

It is assumed that users possess basic computer skills and have reliable internet access.

3. External Interface Requirements

3.1 User Interfaces

PGS offers an intuitive and functional interface for students, teachers, admins.

3.2 Hardware Interfaces

Basic computer setup with a keyboard, mouse is required. requires a connection over the internet.

3.3 Software Interfaces

PGS is platform where students submit projects, teachers grades projects, admin manages user accounts.

3.4 Communications Interfaces

4. System Features

4.1 Authentication
4.1.1 Description and Priority
This feature enables users to securely register and log in to the system after approval.
4.1.2 Stimulus/Response Sequences
1. User navigates to the login page.

2. User enters their username and password.

3. System validates the credentials .

4. If valid and approved by admin, the system grants access to the appropriate user major.

5. If invalid, the system displays an error message and prompts the user to try again.
4.1.3 Functional Requirements
Input: username & password

Output: moving to the (student / teacher) page

REQ-1: The system shall provide a registration form for new users to create an account.

REQ-2: The system shall verify user credentials against stored user data in the database.

REQ-3: For role-based access control, the major of user should be approved by admin.

REQ-4: The system shall restrict access to certain features based on the user's major.

REQ-5: If login credentials are invalid, the system shall display an error message .

4.2 Project Form Submission
4.2.1 Description and Priority
This feature enables students to submit project forms containing relevant details.
4.2.2 Stimulus/Response Sequence
1. Student login to the project submission page.

2. Student fills out the project form with required details and uploads the project file.

3. System validates the form submission and saves the project details.

4. System sends a confirmation message to the student upon successful submission.

4.3.3 Functional Requirements

REQ-1: The system shall provide a project submission form.

REQ-2: Students shall be able to upload project files as part of the submission process.

REQ-3: System shall validate form submissions to ensure all required fields are filled out.

REQ-4: Upon successful submission, system saves the project details, notifies the student.

4.3 View Grades in "my projects" page
4.3.1 Description and Priority
This feature allows students to view their grades in this page.

4.4.2 Stimulus/Response Sequence

1. Instructors submit grades.

2. Students receive grades in view "my projects" page.

4.4.3 Functional Requirements

REQ-1: Teacher shall submit grades.

5.   Other Nonfunctional Requirements

5.1   Performance Requirements

The PGS aims to ensure user satisfaction and efficient operation by offering quick response times.

5.2 Usability

enables students to quickly submit their project, and instructors to quickly view and grade projects.

5.3   Security Requirements

The protection is integrated into this system other than allowing users to create account.

5.4   Software Quality Attributes

PGS meets reliability, usability with user-friendly GUI.

5.5 Business Rules

The PGS is designed to streamline and secure the grading process by assigning specific roles for.

Appendix A: Glossary

Term	Definition
PGS	(Project Grading System) this project.
SRS	Software Requirements Specification.
GUI	Graphical User Interface: A visual interface that allows users to interact with system.
Instructor	Person using the program to grade students' projects.
Student	Person using the program to submit project details.
Admin	Person managing the website