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**Team A**

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**GradSchoolZero**  
**Software Requirements Specifications**  
**For GradSchoolZero**

**Version 1.07**

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Software Requirements Specification	Date: 10/26/2021

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# Software Requirements Specification

## 1. Introduction

### 1.1 Purpose

The Software Requirements Specification (SRS) provides a complete and detailed description of the external behavior of our project, which is to create a graduate program management system that incorporates 4 types of users with different capabilities within the system. This document has multiple sections containing an overall description, specific requirements, and supporting information. It utilizes use-case modeling and includes the use-case model survey, any assumptions or dependencies, the use-case report, supplementary specifications, and also the functional and non-functional requirements of the project. The SRS will serve as a detailed guide to aid our developmental team in designing a system software that satisfies all of the project requirements.

### 1.2 Scope

The software application that is associated with the SRS is GradSchoolZero, a graduate program management system. It can be used by four types of users including students who take classes, instructors who teach classes, registrars who are super users, and outside visitors who are not members of the program. The system will require up to ten features, the majority of which are related to the different capabilities that each user type has. Since the system is meant to work for multiple types of users, it must be designed with the correct functionalities for each user type. These functionalities are specified in the use-case model survey and reports. Furthermore, the system's homepage will be available to all visitors and will include a general introduction of the program along with some program statistics and the option to apply or log in.

### 1.3 Definitions, Acronyms, and Abbreviations

**SRS:** Software Requirements Specification

**Ordinary User:** Any non-registered user that interacts with the system, including outside visitors.

**Registered User:** Standard users who can only access the courses they have taken or taught, such as students and instructors.

**Privileged User:** Superusers who can do anything in the system, such as registrars.

**Homepage:** The default landing page for the website, accessible to all visitors.

**Account Management/Settings:** The account tools and pages designated to registered users.

**Registrar Semester Management:** The actions are exclusive to registrars.

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## 1.4 References

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

## 1.5 Overview

The remaining sections of the document go into further detail about the requirements needed for the software with use-case modeling. The Overall Description describes general requirements and includes the use-case model survey which contains brief descriptions of all use cases and actors, along with relevant diagrams and relationships. The next section, called Specific Requirements, explains the use-case reports and any applicable supplementary requirements that are not included in the use cases. An index is included in the last section as supporting information to make the SRS easier to use.

## 2. Overall Description

### 2.1 Use-Case Model Survey

#### Users:

##### ➤ Ordinary Users:

**Visitors:** Includes anyone visiting the website who is not registered, or has not logged in. They can browse some basic information such as class ratings and top students.

##### ➤ Registered Users:

**Students:** As the name suggests, students are part of the institution by being enrolled in classes. The program allows them to manage and plan their current and future classes.

**Instructor:** They are professors who are selected by the registrars to work in the graduate center. They possess access to their assigned courses.

##### ➤ Privileged Users:

**Registrar:** A superuser who has full access to the program and who is in charge of the graduate center administration. Some of their major roles involve the acceptance or denial of student and instructor applications.

#### Users tools:

##### ☐ Homepage:

**Apply:** visitors can opt to apply to either student or instructor positions at the graduate center.

**Class reviews:** visitors and registered users have access to see the highest and lowest rated classes at the school.

**Honored mentions:** In addition to class reviews, all users have access to a list of all the students with the highest GPAs among the school. For this program in specific, the top 10 student GPAs will be present.

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**Program Description:** Also importantly, the graduate center general program certifications and details will be provided to all interested visitors who would like to apply.

☐ **Account Management/Settings:**

★ **Student:**

**Verification:** upon the acceptance of a user as a new student, a unique student id and password will be provided to them for login purposes, that must be changed in advance.

**Rate class:** Students have the option to rate the classes they are currently taking anonymously to the professors. The only ones who can see who wrote the ratings are the registrars. Ratings range from 1 to 5 stars, and they become part of the class summary. Note that no student reviews are accepted after the instructor provides the course final grade.

**Class overview:** Students can check their assigned classes for the semester as well as look for new classes during the course registration period.

**Dropping classes:** Students have the option to drop classes either because of one of many reasons:

- 1) Before class starts - they will receive all their money back and they can register for other classes
- 2) After class starts - it depends on when exactly they drop the class and that is how much money they will receive back / deducted from their bill.

If the student decides to drop the class between registration and grading period they will receive a W grade (withdrawal). The system will then update this information onto the student's records for them to refer back to.

**Complaints:** Students have an option to file complaints of any sort. All complaints will go to the Registrar's office. To ease communication between both parties, all claims are separated and whenever an update is made on either side it will notify the other party for their attention.

**Records:** This page would allow the student to view their grade for current and past courses. This page will also allow the student to see their course history along with what courses they would need to be left in their major to graduate. Also, if the student has only 8 classes left to take they will be notified with an option to apply for graduation and the application will be sent to the correct office for approval.

**Help/Navigation:** This page is dedicated for students to navigate how to use the webpage. This page will give a detailed overview of how each option works on the webpage.

★ **Instructor:**

The instructor page will be different from the student's page because they do not need to register for classes like students have to. They will have a notifications section for all the classes they teach. The instructor also has access to a page where they can search what classes their students are taking this semester.

**Help/Navigation:** This page much like the one for students will be a bit different because

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instructors have different options and controls.

**Grading period:** Instructors provide grades to all the students in their assigned classes.

★ **Registrar Semester Management:**

**Note:** all actions here are performed by the registrar only.

**Class setup:** set-up courses available, class times and course instructors, and course sizes.

**Special registration period:** in case that a current course that a student is taking is canceled, the student is given the choice to register for other courses.

**Course evaluation:** Registrars debate and question all instructors whose class GPA is above 3.5 or below 2.5. If the instructor doesn't provide adequate justifications, the registrar's decision will range from a warning to firing the instructor.

**Course cancellation:** Cancel a course if less than 5 students are currently taking it in the active semester.

**Instructor suspension:**

- If all the assigned classes of an instructor during the class running period are canceled, will result in the suspension of the instructor, restricting them from teaching the following semester.
- The accumulation of 3 registrar warnings will result in the instructor's suspension. The same punishment is applied as the point above.

**Student suspension:** In case a student is terminated for reasons specified in other sections of the document, the registrar has the right to cancel the suspension if they desire to.

**Taboo dictionary:** Registrars will provide a list of taboo words that are forbidden to appear in students' class ratings. If a student review possesses less than 2 taboo words, the rating will be processed, but such words will be changed to \*, providing the author with a warning. On the other hand, if there are more than 3 taboo words in a review, it won't be shown in the system and the user will be provided with 2 warnings.

**Warnings:**

- Provide warnings to students during the class running period if they have less than 2 courses in the current semester.
- Provide a warning to instructors whose class is canceled during the class running period.
- Provide another instructor warning if the average student rating of any of their courses is < 2
- Provide a warning to students whose GPA ranges from  $2 < x < 2.25$ . In addition, they must present themselves to a meeting with the registrar to discuss their low grade.
- A student that drops all classes will be suspended for the semester (system check)
- For professors and their grading period -> will warn Professors if they have not given a student a grade when the grading period ends.
- Warns students regarding if they failed a course more than 2 times

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**Student's class ratings:** Registrars have full details of the student's course ratings, including their names which are not visible to other students nor instructors.

**Student termination:** If any student has a GPA below 2.0 or failed a course twice will result in the student's termination (expulsion).

**Announcements:**

Will display the school's honor roll students - GPA higher than 3.5 and will be available for everyone to see. There can be an option for the student to select to not show this information to the public.

## 2.2 Assumptions and Dependencies

As shown in the Use case diagram a subsystem of GradSchoolZero is the separate system for the Registrar. The Registrar has more permissions as compared to a student or an instructor as they have control over the status of classes, student complaints, and more authority as listed in section 2.1. Students, instructors, and Registrar all have different accounts but they all log onto the same webpage but with different option controls.

## 3. Specific Requirements

### 3.1 Use-Case Reports

Different user use cases can occur depending on the user's activity. It is briefly explained below:

**Sign Up:** A visitor or browser user can register/sign up to become a registered customer/user to the website and access the content.

**Login:** A registered student/teacher can log in to their account and access the contents of the website and also navigate through pages and make actions.

**Update User Account Information:** A registered student can update their information such as drop class, complaints, academic/financial warnings, and transcripts - in their user account.

**View Past Record History:** A registered student, a registrar can view past courses taken by the students from the history.

**Issue Account Warning:** A registrar can issue a warning to a registered student's or instructors' account.

**Restrict Account:** A registrar can restrict a registered student's account. It can be based on the academic record or tuition inquiry.

**View Listings:** A visitor/browser and a registered student can view the listings of courses to take.

**Enroll Class Option:** A registered student can enroll in a class if they meet the academic prerequisites (the system will detect it).



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**Drop Class:** Students can drop/remove classes from the enroll or shopping cart list.

**Edit courses:** A registrar can edit the courses students enrolled and drop them as necessary.

**File Complaint:** A registered user can file a complaint about the course, in the complaints page.

**View Complaint:** A registrar/instructor can view the complaints they received.

**See Ratings:** A Registered user can view anonymous ratings which were submitted by the anonymous students.

**Manage Complaint/ratings:** A registrar can manage the complaints and ratings to verify.

**Setup Courses:** A registrar can assign instructors, class size, assign course and its details.

### 3.2 Supplementary Requirements

**Register:** A visitor/browser who wants to become a registered customer must create an account with a unique working email address. This email address is compared to a list of “avoid” email addresses that the system keeps track of. If such an email address belongs to this list, a denial message will be displayed.

**Enrollment:** A registered student can enroll courses given the enroll option. If the enrollment is successful, the course is moved to the class schedule subsystem from the shopping cart. Otherwise, give a warning and show a detailed error message.

**Accept Enrollment seats:** A student can try to enroll for a class in the given time. However, if the courses' seats get full or the deadline passes, the student will not be able to enroll anymore and the registrar can not accept any more seats than available.

**File Complaint:** A registered user can file a complaint about courses taken and also add a rating as anonymous. The registrar can see it and post it to evaluate the course instructor.

**Manage Complaint:** A registrar can manage a complaint. The registrar can decide to let the warning stay or be removed and inform all parties with his/her justifications. They can report to the department accordingly.

**Suspended student:** When the student graduates or gets suspended, they will be noticed through email and will be given a chance to explain themselves regarding the circumstances.

**Maintain Taboo List:** A registrar maintains a list of “taboo” words that registered students are not allowed to use in the discussion forum. one such violation will automatically generate one warning and the violating words are redacted by the registrar.

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## **4. Supporting Information**

### **4.1 Use Case Diagram**

Link: <https://lucid.app/publicSegments/view/d6d3aac9-bb5b-42f3-be90-6441b12597d0/image.pdf>

(file will be downloadable as a PDF).

Otherwise, refer to the next page and zoom-in as needed.

