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<CCNY ZERO>
Software Requirements Specification
For <Web Application>

Version <1.0>

Revision History

Date	Version	Description	Author
24/OCT/2021	1.0	First phase software requirements/ specification	Haroon Syed, Andrew Persaud, Josue Flores, Tufaye Ahmed, Christopher Lall

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Software Requirements Specification

1.   Introduction

1.1   Purpose

This software requirement will provide a detailed description of the Graduate Education System (GES). In this document, the user case models, system requirements and specifications are detailed.

1.2   Scope

The Class Enrollment Program (CEP) will be a web based application where new or old users can register for classes.

This GES includes two case diagrams: the first use-case diagram describes the student functionalities (register, manage the course, check grades). The second use-case describes the faculty class: registrars and instructors. Each faculty has its separate specifications according to the task description provided. This document includes the software requirements such as frameworks that will be used, as well as relevant dependencies used.

1.3   Definitions, Acronyms, and Abbreviations

Terms	Definitions
ReactJS	React is a front end JavaScript library for building user interfaces maintained by Facebook.
NodeJS	Javascript runtime environment that runs outside the web browser
Google Firebase	Database management system
Javascript (JS)	JS is an object-based, object-oriented programming language.
GES	Graduate Education System
CEP	Class Enrollment Program

1.4   References

Software Requirements Specification, www-cs.ccny.cuny.edu/~csjie/322/spec_sample.pdf.

1.5   Overview

The "Overall Description" section of the document illustrates an overview of the system and its relation to users. This section is intended to be a top-down view of the system as a whole through use-case diagrams that link different types of users to features in the GES.

The "Specific Requirements" section details how the different software systems beneath the GUI layer in the GES interact with each other. This section is aimed at developers to understand the flow of data and various connections between the frontend and backend.

2.   Overall Description

[CCNY ZERO is a system which allows prospective/current students, instructors, and administrators to engage with the CCNY Graduate Program in a more meaningful manner. Overall, this web application serves to refine the current experience that CCNY students experience when striving for a higher education. In respect to functionality, the accessible features for each user (visitors, students, instructors, and administrators) are delineated in the following statements:

All users will be able to see a general introduction of the Graduate Program accompanied with the highest/lowest rating courses, along with a list of students that currently possess the highest GPA.

Any visitor is allowed to apply to the institution as a student/instructor. In the case of a student, visitors with a GPA > 3.0 will most likely be accepted as long as the quota is not reached. All applications are subject to final review by the registrar's office in relation to acceptance/rejection. Given that the student is accepted into the program, these individuals will obtain their login credentials with a temporary password being sent to their provided email. In the case of the instructor, visitors can apply to be instructors and will be accepted/rejected at the discretion of the registrar, free from any justification. Consequently, the accepted instructors will be assigned to classes as well.

There are four periods that are actively managed by the registrar's office. Each period is allocated a specific time duration in accordance with the purpose of those sections. For example, the class setup period entails the creation of course sizes, course times, and assigned instructors. Similarly, within the course registration period: students can register for 2-4 courses given the two conditions are met: time slots do not overlap, and the upper limit is not reached. In consideration of the latter condition, the student retains the option to register for a course, but must be placed on a waiting list that is solely approved by the instructor. A student can retake this course if they were given an F previously. As for the Class running period: students are not able to register for any further courses (except during the special registration period). In addition, students who are in cancelled courses (courses with less than 5 students enrolled towards the end of registration period) are given the opportunity to apply to another class during the special registration period. Students retain the right to drop a course within this period. For instructors, if all their courses are cancelled they are met with a 1-semester suspension. Lastly, for the Grading period:

Students will await their grades from their instructors and instructors will be warned if grades have not been assigned.

[Semester Periods Notes: students will be warned if they are taking less than two courses. Instructors will also be warned if the quota for students has not been met and will be suspended indefinitely. Students that have failed a course twice will be terminated along with students that have a GPA lower than 2. Students that fall in the 2 to 2.25 range will be warned while students above 3.75 for more than one semester will be honored. Once a student has finished all of their courses, they can apply for graduation. If these requirements have not been met, they will receive a warning for reckless application.]
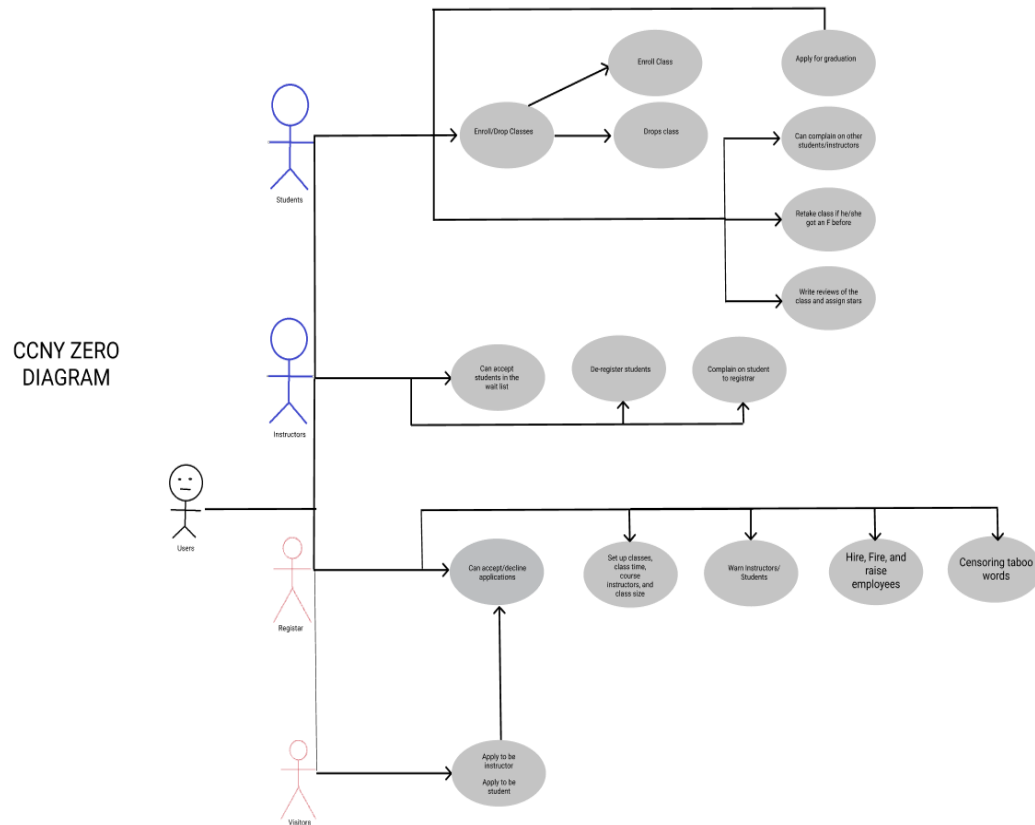
Class reviews will allow students to anonymously share their opinion on the course. If an instructor is rated poorly with a rating less than 2.0, they will be suspended. To avoid bias, students can not review a course after the grading period. Any student using taboo words will be warned. Registrars will process a complaint if a student complains about their instructor. Punishments will be handed out to those in the wrong (determined by registrar).

Students and instructors have their own respective pages. Students can see their records and basic information and instructors will be able to see their students academic history along with course information.

2.1   Use-Case Model Survey

There are four different types of users: Visitors, Instructors, Students, and the Registrar's/Admin. The use case model for the employees is displayed below. This includes the Registrar, Instructors and Students.

2.2   Assumptions and Dependencies

Assumptions:

1. Must be a student to sign up for a class
2. Classes need to have space in order for students to enroll
3. Users are required to have an internet connection to view and sign up for classes

Dependencies:

4. GES hosted on Github Pages
5. Google Firebase Database
6. React JS Dependencies

3. Specific Requirements

This section contains a detailed overview of user permission with case diagrams.

3.1 Use-Case Reports

[Outside Visitors Use Case]

Use Case: Apply to be a student/instructor.

Description: Visitors can apply to be a student/instructor. Decisions will be decided by the Registrars.

[Registered Students Use Case]

Use-Case: Enroll/Drop Classes

Description: Users can enroll and drop classes during the class registration and class running period.

Use-Case: Apply for Graduation

Description: Students can request to apply for graduation once they meet the fulfilled 8 class quota.

Use-Case: Can complain on other students/instructor

Description: Students can complain about other students in their current classes and complain about their current instructor.

Use-Case: Retake Class if he/she got an F before

Description: Students can retake the courses that they failed during their graduate career.

Use-Case: Write Reviews of the class and assign stars

Description: Students can give anonymous reviews of their current class and assign stars (1 to 5) for it. Only the Registrar knows the identity of the student and students cannot rate the class after they receive their grade.

[Instructors Use Case]

Use Case: Can Accept students in the waitlist

Description: The instructors have the ability to accept students that are waiting to be accepted to the course.

Use Case: De-register students

Description: The instructors have the ability to kick students out.

Use Case: Complain on students to registrar

Description:The instructors have the ability to make complaints about students.

[Registrars Use Case]

Use Case: Accept/Decline applications

Description: The registrar needs to step in to accept or reject student applications.

Use Case: Set up classes, class time, course, instructors and class size

Description: Registrars will set up classes, create class times, decide the courses and instructors along with the size of the class.

Use Case: Warn Instructors/Students

Description: Depending on if students have a low GPA or taking below 2 courses, students will be warned about their current semester choices. Warning will also go out to instructors with low ratings. Warnings will be given out to students that use taboo words.

Use Case: Hire, Fire(suspend) and Raise Employees

Description: If a course has not met its quota for enrollment, instructors will be suspended.

Use Case: Censoring Taboo Words

Description: Any hate speech will be censored.

3.2 Supplementary Requirements

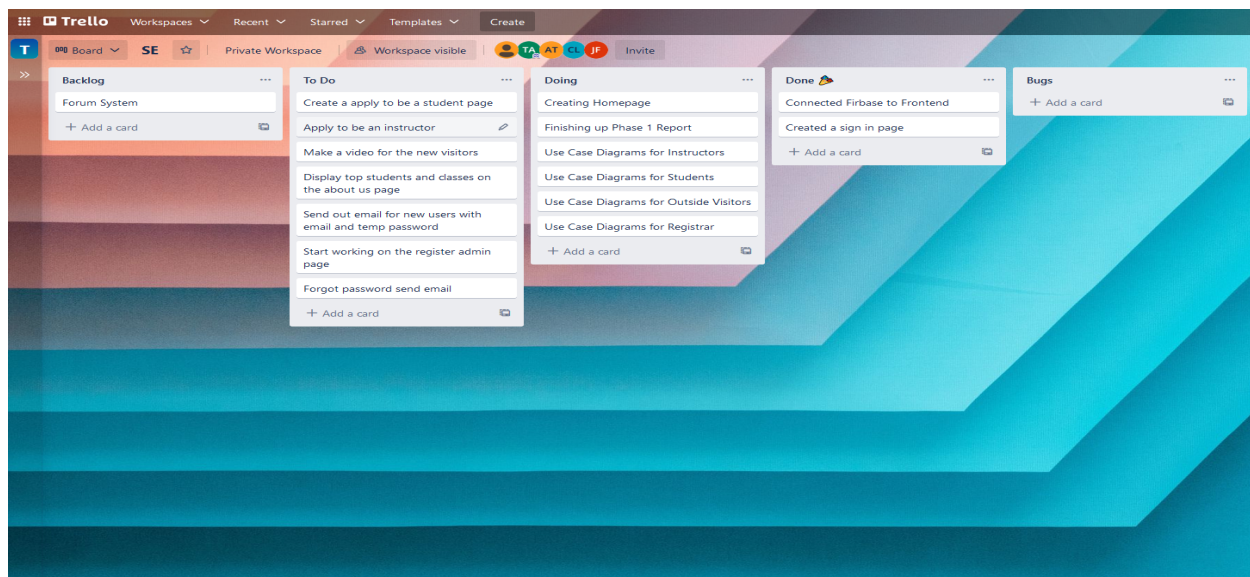Frontend Technologies: ReactJS, HTML, CSS

Backend Technologies: NodeJS

Database: Firebase

Hosting: Heroku, GitHub Pages

4. Supporting Information

Our Trello To-Do list is set up as follows:

GUI of the login page: