Introduction to Systems Analysis, CSC 375

Requirements Document

Project Title	Online Practice Test Platform
Team Members (Names)	Chenan Zhou, Brendan Schmidt, Chris Murayire, Tyler Termehr, Wenzhe Shi, Yan Zhang, and Yifei Yuan
Group #	13

Type of Requirements	**Requirements**		
Business Requirements	1	Requirement:	The platform should provide an online testing system.
		User Story:	As a student, I want to be able to take practice tests online to assess my understanding of the topics covered in class.
		Requirement:	The platform should provide an easy way for students to find mock tests for specific classes. The platform should also make it easy for professors to create these mock tests.
	2	User Story:	It's easier to find study groups for some classes, especially if you already know people in that class, but for other classes it can be hard or time consuming to find a study group.
		Requirement:	The platform should provide a way for users to easily create study groups that others can easily find and join. This also means that a user should easily find a study group for specific classes to join.
	3	User Story:	There are other ways of finding a private tutor, but they are so inefficient that most of the time it is better off spending that time going to office hours, if possible, and figuring things out.
		Requirement:	The platform should provide students with a way to find tutoring sessions and other users to create tutorials.
Business Rules	1	Account	Students and teachers need to provide their IDs (student ID, government ID, etc.) when they are registering the account
		Face ID	Students and teachers are also required to turn on their cameras when registering
	2	Test:	Only registered students can take tests. Practice tests can be taken multiple times, but scored assessments are limited to one attempt unless otherwise specified.

User Requirements	1	Requirement:	Students should be able to choose from various topics or subjects for practice tests.
		User Story:	Before submitting assignments or when preparing for exams it can be helpful to have practice tests that are graded immediately.
	2	User Story:	It would be really nice to get immediate feedback on the practice test to know what I need to work more on.
		Requirement:	Students should be able to review their answers and receive explanations for correct solutions.
Functional Requirements	1	User Story:	It would be nice to have a way to quickly and easily find practice tests from different subjects without having to go back and forward between the main practice test page or something like that.
		Requirement	The system should list available tests based on subjects or topics. It should offer multiple ways to view practice. That is, being able to open a practice test in a new tab or expand and compress a particular practice test for viewing purposes. It should also offer a timed testing environment replicating exam conditions.
	2	User story	Once a practice test is completed, it would be kind of useless to find out what I need to work on more. So it would be really nice to get immediate feedback once a test is completed
		Requirement:	The system should automatically grade objective questions and display the results.
Non-Functional Requirements	1	Requirement:	**Usability**: The testing interface should be clear, with easily readable fonts and intuitive navigation.
	2	Requirement:	**Performance:** The system should quickly load questions and efficiently save responses, ensuring no student data is lost.
	3	Requirement:	**Security**: Students' answers and scores should remain confidential. Only the concerned student and authorized instructors should have access.

Use Case 1

Name	Take the Online Practice Test
Participating Actors	Students Online Testing System
Goals	To allow students to evaluate their understanding and get ready for examinations by taking online mock tests.
Triggers	An upcoming exam or the student's wish to undertake a mock test.
Pre-Condition	Students are registered in a subject or course where online practice tests are available.
Post-Condition	The completed practice test is graded and saved.
Basic Flow	1. Log into the platform:

	2. The student accesses the academic communication platform using their unique login credentials. Navigate to the Testing Section: 3. The student clicks on the "Online Testing" section, revealing a list of available practice tests categorized by subject or course. 4. The student browses through the available tests and chooses a specific one they wish to undertake. The details of the test (number of questions, duration, format) are displayed for the student's review. 5. Start the test. 6. Upon confirmation, the test begins. 7. A timer is initiated if the test is time-bound. 8. Questions are presented one at a time or all at once based on the test format. 9. The student answers the questions using the interface, which may include multiple-choice questions, fill-in-the-blanks, short answers, etc. Complete and submit: 10. Once all questions are answered or the timer runs out, the student has the option to review their answers before submitting. 11. Save and exit.
Alternate Flows	**Technical Difficulties:** If there's a technical issue while taking the test, the system saves the student's progress, allowing them to resume where they left off once the issue is resolved.
Exceptions	**Connection Lost:** If the student's internet connection is lost during the test, the system saves the student's current progress. Upon restoring the connection, the student can resume where they left off. Platform Downtime: In the event of platform maintenance or unexpected downtime, the student is alerted and given an opportunity to save progress (if possible). Information is provided about when the platform is expected to be operational again. Browser/Platform Crash:

	If the student's browser or the testing platform crashes, the system attempts to auto-save the student's last known progress. Upon restarting and logging back in, the student can resume the test. Time Overrun: If a timed test exceeds the allocated time before submission, the system automatically submits whatever has been answered up to that point. The student is notified that the time limit was exceeded.
Qualities	**Responsiveness**: The system should quickly load questions and save answers without noticeable delays, ensuring a seamless testing experience. Intuitive UI: The user interface should be clear and intuitive, minimizing the cognitive load on the student and allowing them to focus entirely on the test. **Reliability**: The system must be reliable, ensuring that tests are graded accurately, and the student's progress is always saved, even in cases of unexpected disruptions. **Security**: The testing platform should maintain high standards of data security, ensuring that student data and test results are protected from unauthorized access.

Use Case 2

Name	Realtime grading
Participating Actors	Students Online Testing System
Goals	To allow students to get immediate feedback on their practice test.
Triggers	Upon completing a mock test.
Pre-Condition	Students are registered in a subject or course where online practice tests are available.
Post-Condition	Students get an option to redo the practice test.

Basic Flow	1. The student accesses the academic communication platform using their unique login credentials. 2. The student clicks on the "Grading" section, revealing a list of completed practice tests categorized by subject or course. Then the student browses through the past tests and chooses a specific test to view their feedback. 3. Questions are presented one at a time or all at once based on the test format. Each question shows whether the student got it correct and if not displays the correct answer and any extra information, such as chapters, to review. 4. Once the student is done reviewing their feedback they get an option to redo the practice test with different but similar questions or to exit the feedback for that particular test
Alternate Flows	**Technical Difficulties:** If certain questions require manual grading by instructors, the student might receive a partial score initially, with a note that the final score will be updated after manual grading.
Exceptions	**Connection Lost:** If a student believes a question was marked incorrectly, they can leave a note asking the examiner to check if the question was indeed marked incorrectly.
Qualities	**Responsiveness**: The system should quickly load questions and feedback without noticeable delays, ensuring a seamless reviewing experience. Intuitive UI: The user interface should be clear and intuitive, minimizing the cognitive load on the student and allowing them to focus entirely on their feedback. **Security**: The testing platform should maintain high standards of data security, ensuring that student data and test results are protected from unauthorized access. **Feedback Quality**: Feedback provided to the student after the test should be detailed and informative, helping the student understand mistakes and improve.

Use Case 3

Name	Create a Study Group
Participating Actors	Students Group creation system
Goals	Create a study group online for students taking the same class
Triggers	The student wants to create a study group for a specific class
Pre-Condition	A student goes to the University of Victoria and is currently taking one or more classes
Post-Condition	The group will be created in the system The user will receive a group ID The user will see how many people are currently in the group
Basic Flow	1. The user logs into the platform 2. The student accesses the academic communication platform using their unique login credentials. 3. The student navigates to the study group creation part of the app 4. The student searches for the class they wish to make the study group for 5. A student makes a study group 6. Students are prompted to indicate how many members the group will have 7. Students are prompted on how often the study group should meet/the best meeting times for that student 8. Once all aspects of the group creation have been entered, the student will hit the Create Group button 9. The system will display that the group has been created 10. Display a table of current group members as well as a timetable of the best meeting times for each member 11. The system assigns groups a group ID 12. The system will alert students if any other active study groups for the same class already exist 13. The system will notify the creator of the group when a new student has registered in the group 14. The user logs out and exits the system
Alternate Flows	**Technical Difficulties:** If technical issues happen during the group-making process, the system will protect the user ID and information and maintain the correct groups, allowing them to resume where they left off once the issue is resolved.

Exceptions	**Request to not make groups:** In the event that the university or an instructor has requested that students not use the app, the course, when searched in the group tab, will notify the student that group creation for the course is not allowed. **Cancelling group creation:** In the event that the student creating the group changes their mind, they are able to hit the cancel group button. The student is notified that their work will not be saved, and they will be required to restart all they have done up to this point. **Platform downtime/application crash:** If the student is in the process of creating a group while maintenance is about to go underway, they will receive a notification before the site goes down. The progress of their group creation will also be saved. The same will happen if the application crashes; the group information the student was working on will still be saved for the next login.
Qualities	**Reliability:** The system must be reliable by making it easy to look up other users and form groups with them in order to complete their planning for the completion of schoolwork. **Responsiveness:** The system should be quick and responsive, making it easy to form groups based on classes. The system should have little to no delay to ensure a seamless experience. **Security:** The group-making platform should maintain high standards of data security, as users' personal information, such as student IDs, schedules, and names, will be posted in these groups. Our platform will protect our users' data. **Intuitive UI:** The user interface should be clear and intuitive, minimizing the cognitive load on the student and allowing them to focus entirely on group-making and completing assignments.

Use Case 4

Name	Book a tutor
Participating Actors	Students Tutor booking system
Goals	Book a tutor to help with understanding the course material
Triggers	The student needs help with a course and wants help from a tutor
Pre-Condition	A student goes to the University of Victoria and is currently taking one or more classes
Post-Condition	The student gets confirmation of the booking time
Basic Flow	1. The student logs into the platform 2. The student accesses the academic communication platform using their unique login credentials. 3. The student clicks on the “Tutor services” section, specifying if they want a free tutoring session or a paid session 4. The student selects the free session 5. A student searches for the specific course they want a tutor for 6. After selecting the course, a calendar will appear showing open time slots 7. The student selects a time slot 8. The student clicks the “book” button 9. The system records the booking and provides the student with a confirmation 10. Students can either exit the system or book another tutor session
Alternate Flows	**Technical Difficulties:** If technical issues happen during the group-making process, the system will protect the user ID and information and maintain the correct groups, allowing them to resume where they left off once the issue is resolved. 3. The user selects the paid session 1. The student provides credit card information 2. The system validates the credit card information 3. The system provides the student with a summary of the tutoring session booking 4. The student proceeds with the session booking 5. The system records the session booking order and gives the student an identifier related to their booking session order
Exceptions	**Time Slot Conflicts:**

	Time conflicts could arise and lead to the issue of booking a time slot. This could either be an issue of no available time slots or an issue of the student's schedule being a problem. **Canceling the tutor session:** In the event that the student wishes to cancel the tutoring session, they are able to cancel the session with the “cancel tutoring session” button. **Platform downtime/application crash:** If the student is in the process of creating a group while maintenance is about to go underway, they will receive a notification before the site goes down.
Qualities	**Reliability:** The system must be reliable by making it easy to search for available time slots for booking sessions. **Responsiveness:** The system should be quick and responsive, making it easy to book a tutoring session. The system should have little to no delay to ensure a seamless experience. **Security:** The tutor booking platform should maintain high standards of data security, as users' personal information, such as student IDs, schedules, and credit card information names, will be stored in the system. Our platform will protect our users' data. **Intuitive UI:** The user interface should be clear and intuitive, minimizing the cognitive load on the student and allowing them to focus entirely on booking a tutoring session without having to question how they will progress through the steps.