



**SOEN342: Software Requirements and Specifications  
section I**

***Phase II***

**Vision Document  
*Sturd E-Academy*  
Group A**

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# **1. Introduction**

A vision document is one of the first artifacts created in the requirements engineering process. Its fundamental objective is to promote a shared understanding of the project's objectives. The vision document outlines the problem to be solved by addressing stakeholder requirements. In accordance with these specifications, solutions to these problems are offered as product features.

The scope of our software solution aims to provide an effective academic and professional support for students/parents. Sturd E-Academy offers a multitude of products and services on one platform to make online learning accessible and convenient for everyone. To prevent the original objectives from being compromised during the software development process, the vision document will act as a shared reference throughout the project's lifecycle.

## 2. Positioning

In this section, the problem statement as well as product position statement will be discussed.

### 2.1. Problem Statement

The problem of	The current system-as is lacks the functionality to review the material covered during the 1-on-1 tutoring session.
Affects	Students and parents who want to review the content after the meeting are affected by this issue.
The impact of which is	<ul style="list-style-type: none"><li>- During the meeting, the student missed or later forgot an important detail that is crucial to the understanding of a concept.</li><li>- During the meeting, the student found that the pace was too fast or slow which hindered their ability to learn.</li><li>- Students and parents must pay for another session to revisit the same course content.</li></ul>
A successful solution would be	<ul style="list-style-type: none"><li>- Recording the one-on-one sessions. Parents and students will be provided with the flexibility to view or review content at their own pace.</li><li>- Discussion Board. Parents and students can receive easy-to-understand solutions/answers to their questions on the subject that has been covered.</li></ul>

The problem of	The current system-as is lacks the ability to keep tutors motivated to teach and makes them feel unappreciated.
Affects	Parents, tutors, and students who want to engage in quality tutoring sessions and be encouraged to perform.
The impact of which is	<ul style="list-style-type: none"> <li>- The tutor is criticized when a parent fails to see any progress in their child's development.</li> <li>- The tutor is blamed when a student struggles to understand the material.</li> <li>- Tutors think that they are assisting the problem but aren't approaching it effectively.</li> <li>- Parents and students fear that they are wasting money on an incompetent tutor.</li> </ul>
A successful solution would be	<ul style="list-style-type: none"> <li>- A review system. Students and parents will have the opportunity to leave feedback for tutors. Tutors will also share the ability to leave feedback for students that will be visible to parents.</li> <li>- Top rated tutors. Parents and students will be able to view the ratings of tutors before purchasing a lesson. The algorithm will prioritize satisfaction and will bring top rated tutors more views.</li> </ul>

## 2.2. Product Position Statement

For	Tutors, Parents and Students.
Who	<ul style="list-style-type: none"><li>- Tutors <b>who</b> enjoy teaching and are seeking experience.</li><li>- Parents <b>who</b> are looking for affordable tutoring services for their kids.</li><li>- Students <b>who</b> require academic support.</li></ul>
Sturd E-Academy	An online learning platform that offers a wide range of subjects and services on one platform.
That	<ul style="list-style-type: none"><li>- Provides learning opportunities with 1-on-1 or group tutoring.</li><li>- All sessions can be recorded and accessed for the purpose of reviewing.</li><li>- Tutors can create classrooms, share pertinent content, and offer various products/services.</li></ul>
Unlike	Unlike modern e-academy website services like Super Prof, our solution gives users access to the most widely used textbooks and the option to record the one-on-one sessions with the tutors.
Our product	<ul style="list-style-type: none"><li>- Records 1-on-1 conversation so that parents and students can review what was discussed with the tutor.</li><li>- Students will be able to learn at their own pace and return to the meeting if something was forgotten or missed.</li><li>- Parents and students can receive easy-to-understand solutions/answers to their questions on subjects that have been covered.</li></ul>

## 3. Stakeholder Descriptions

### 3.1. Stakeholder Summary

Name	Description	Responsibilities
Owners	A business owner is a person who has financial and operational authority over a company.	They are responsible for coming up with strategies to maintain the company profitable and competitive, as well as formulating and overseeing the company's business strategy and marketing initiatives. For a business owner, conducting research and planning are crucial abilities.
Employees	Direct stakeholders in the business are the employees. They have direct client contact, generate income for their own support, and contribute to flow of the company.	Employees may perform managerial, administrative, or executive tasks. They often anticipate advantages including rewards, professional development, and job satisfaction.
Investors	Investors can be owners or a third party. All investors are entitled to timely and accurate information, such as financial statements. The ability to support or oppose important decisions like mergers and acquisitions may also be granted to investors.	An investor offers more than financial means to undertake initiatives; they can provide ideas, suggestions, inspiration, and aid in enhancing and promoting your company's image.
Customers	Customers are the people who purchase goods from businesses. Customers anticipate receiving the highest quality products from companies at a reasonable cost.	Without clients, a company cannot exist. Customers purchase goods from businesses, and as a result, they are curious in how well those businesses are doing. Businesses must connect with customers and fulfil their demands.

Human Resources	Department that handles the hiring process, and all other human resource needs a company may have.	Human Resources is responsible for discovering, hiring, and training new employees, and for addressing administrative concerns inside the organization. They handle internal modifications and maintain the general workspace flow.
Customer Service Division	This stakeholder is in charge of responding to primary users' issues or conflicts.	Customer service oversees upkeep and responding to the most common user queries or complaints about the product. They are in charge of resolving a wide range of problems, such as payment, user disputes, account issues, general product inquiries, etc. This division is essential to maintaining a good quality product because they are the main points of contact with customers.
Marketing Division	The division with a stake in drawing in and keeping users.	It acts as the public face of your firm by organizing and creating the materials that reflect it. Reaching out to potential clients, consumers, investors, and/or the public is the responsibility of the marketing department, which must also develop a unified brand image that favorably portrays the business.

## 3.2. User Summary

Name	Description	Responsibilities
<i>Student</i>	Students range from any age and come on the platform to learn a subject taught by a tutor.	<ul style="list-style-type: none"><li>- Create Accounts</li><li>- Sign up to courses</li><li>- Opens share board to see tasks that must be completed and courses of the day</li></ul>
<i>Tutor</i>	Variety of individuals who have experience in teaching different subjects ranging from math to history and everything in between.	<ul style="list-style-type: none"><li>- Preparing educational course and sends material to student</li><li>- Supervise student and make sure they are following</li><li>- Personalize teaching for each student needs</li><li>- Grading assessments and posting feedback on each student's grade board</li></ul>
<i>Parent</i>	Individuals who seek to track their children's progress in a certain class or in learning overall.	<ul style="list-style-type: none"><li>- Check in with tutors to see child progress with private tutor-parent messaging</li><li>- Set aside time on shared board schedule to revise with child</li><li>- Make sure child attends on time with notifications</li><li>- Assess child's progress based on tutor feedback and communicate with tutor to talk about results</li></ul>



<i>Admin</i>	Administrators have control over everything happening on the website ensuring everything goes on smoothly.	<ul style="list-style-type: none"> <li>- Managing all users including, all students, tutors, parent accounts and guests.</li> <li>- Maintain order and make sure user experience is smooth</li> <li>- Coordinates work</li> </ul>
<i>Guest</i>	Guests have no account and are simply visitors on the website who may be interested in signing up for a student/tutor account.	<ul style="list-style-type: none"> <li>- Creates Student or Tutor account</li> <li>- Can sign up to newsletter to learn more about the service</li> <li>- Can sign up</li> </ul>

### 3.3. User Environment

The following five types of users will be interacting with the application:

- Guests
- Students
- Parents
- Tutors
- Administrators

Visitors will have access to a website where they can create an account and fill out the necessary information to request membership in the application as a tutor, parent, or student. The users will be provided with the option to enter payment information when signing up or after registering for their first course. Account creation for tutors has extra information requirements such as language spoken, work experience, and type of courses to be taught (science, art, etc..).

The account creation process should roughly 5 minutes.

Through the course list page, students will be able to view courses, register for the specific course they need, and choose their tutor. This page includes a search bar and course suggestions. After payment processing students will be able to:

- View all the course content through the course page link that will be added to their profile in a My Courses tab.
- Chat with the tutor to ask questions with a chat button located on the tutor's profile.
- Write reviews on the tutor's profiles by going to the tutor's profile and clicking add a review.

Parents will have the same user interface as a student. Parents can view their child's profile to view the courses they are registered to and the progress they are making. Comments left by the tutor teaching the course will be visible on the student profiles and will be visible to parents.

Tutors are going to have profiles with ratings from students and parents. They will have an approve/decline list page in which they will find all the students' and parents' requests to register for the course(s) provided by them. They will also have a page for each course to schedule appointments. This page will provide features to add/change/cancel appointment times with all the participants in the course.

The student, parent, and tutor will have access to report an account to the administrators and write their issue/incident with that account owner. The administrator will have the option to suspend the account after analyzing the report.

Administrators will be monitoring the flow of the website and the accounts including:

- Approving/declining accounts upon creation by other users

- Viewing reports and banning accounts or dismissing the report
- Delete accounts of tutors/students/parents

Each activity time is variable based on the user and service offered by the tutor. For example, one tutor might offer a course in 1 year while another provides the same course in 6 months, depending on if it's a group or 1-on-1 tutoring session.

The website will be available and compatible with the browsers Chrome, Firefox, and Safari. It will be accessible on all platforms operating on Windows, Linux, Android, and iOS. All features mentioned above will be available on computers, tablets, and mobile phones. To maximize the user experience, it's recommended to use a computer or a laptop with a webcam to join meetings and participate in the Q&A sessions.

## 3.4 Key Stakeholder or User Needs

The following are the main issues with current solutions as perceived by stakeholders or users:

**1- the extremely challenging decision-making process involved in selecting the ideal tutor for students and parents via a platform. Moreover, teachers are unable to provide feedback that enables students and parents to understand what must be prioritized to get better results.**

*Reasons for this problem:* the inability as student or a parent to assess, rate, or review tutors. similarly, the inability tutors to rate their sessions with the student to give constructive criticism is a problem that's critical for customers' judgment and decision making.

*How is it solved now:* Many online resources provide a broad overview of the subjects covered and the tutors that are available for each subject or class. Additionally, some websites may use certain details (such as age or grade) to inform the tutor of the student's expected academic level.

*Presented solution to the stakeholder or user:* the development of a feature that will let both students and tutors give feedback, review, and rate each other's performance. In this approach, parents can monitor whether their children are paying attention during lessons, and both children and parents can provide feedback to the tutor to make sure the classes are meeting their needs for academic success.

**2- Tutors may not be competent to teach certain subjects or their expertise may not be sufficient for the class they are providing.**

*Reasons for this problem:* The anonymity and the easy of entry as well as the lack of HR departments for a lot of platforms may allow a lot of issues when it comes to quality control.

*How is it solved now:* platforms allow teachers to share their certification and qualification on their profiles or have a simple satisfactory rating system that allows students and users to choose the most credible tutor.

*Presented solution to the stakeholder or user:* The development of a review system for teachers to use before they begin teaching on the platform. In addition to giving the teachers an entrance exam for the class they are teaching; this system will scan the supplied documents and certification to check for certification. After that procedure is finished, it moves on to evaluation, which is automated with human supervision. Then the teacher will either receive a letter of acceptance or rejection.

**3- The use of third-party platforms by tutors to post their materials and establish pages about the subjects they specialize in may cause them and students' troubles.**

*Reasons for this problem:* The tutor may have to upload his or her material to multiple platforms. Since not all platforms have the same compatibilities and user policies, it may take a lot of effort for the teacher and student to understand and begin working on their education, and it adds the one delay layer of understanding other platforms to get the information needed.

*How is it solved now:* Some platforms may recommend some services (like google drive, Dropbox) and integrate them into their websites

*Presented solution to the stakeholder or user:* On the Sturdy e-academy platform, tutors will be able to have their own page where they can upload papers for all their student to see. In addition, it will also allow them to organize their materials and present it the way they desire.

**4- the website might not be sustainable financially to operate for a long time only on running ads.**

*Reasons for this problem:* The cost of maintaining the website running, paying for staff, renting data servers and business up cost might not be covered for with only running adds on the website especially with the existence of ad blockers.

*How is it solved now:* Other platforms may charge the student with subscription to use the platforms in the first place. Or they may be funded by governments.

*Presented solution to the stakeholder or user:* Our platform will have a donation tap, as well as a simple charge fee on the tutor to use some pro features like uploading documents over a certain size or access to analyzing data etc.

**5- the absence of interactive components that support instruction**

*Reasons for this problem:*

A means of communication between the parties and a program that allows for a temporary video connection are the absolute necessities for conducting an online tutoring session. Having only these fundamental features leaves a lot to be desired because teachers are expected to give everything else, such as study materials, visual aids, and practice exams. Certain issues, such as the inability to directly write on sheets, also need to be addressed.

*How is it solved now:* Some platforms add some games or quizzes to give a more interactive experience.

*Presented solution to the stakeholder or user:* Our platform will be providing Interactive features to encourage learning in a more hands-on way include a digital whiteboard, pre-provided digital study materials, online quizzes, and activities with nice animations for some popular courses.

Need	Priority	Concerns	Current Solution	Proposed Solutions
A tool to help students and parents decide a tutor, and a tutor to get feedback on the student	High	the inability as student or a parent to assess, rate, or review tutors. similarly, the inability tutors to rate their sessions with the student to give constructive criticism is a problem that's critical for customers' judgment and decision making	Many online resources provide a broad overview of the subjects covered and the tutors that are available for each subject or class. Additionally, some websites may use certain details (such as age or grade) to inform the tutor of the student's expected academic level.	the development of a feature that will let both students and tutors give feedback, review, and rate each other's performance. In this approach, parents can monitor whether their children are paying attention during lessons, and both children and parents can provide feedback to the tutor to make sure the classes are meeting their needs for academic success.
Tutors' quality control	Moderate	The anonymity and the easy of entry as well as the lack of HR departments for a lot of platforms may allow a lot of issues when it comes to quality control.	platforms allow teachers to share their certification and qualification on their profiles or have a simple satisfactory rating system that allows students and users to choose the most credible tutor.	The development of a review system for teachers to use before they begin teaching on the platform. In addition to giving the teachers an entrance exam for the class they are teaching; this system will scan the supplied documents and certification to check for certification. After that procedure is finished, it moves on to evaluation, which is automated with human supervision. Then the teacher will either receive a letter of acceptance or rejection.
Having studying material scattered on multiple platforms	High	The tutor may have to upload his or her material to multiple platforms. Since not all platforms have the same compatibilities and user policies, it may take a lot of effort for the teacher and student to understand and begin working on their education, and it adds the one delay layer of figuring out other platforms to get the information needed.	Some platforms may recommend some services (like google drive, Dropbox) and integrate them into their websites	On the Sturdy e-academy platform, tutors will be able to have their own page where they can upload papers for all their student to see. it will also allow them to organize their materials and present it the way they desire.

financial stability long term	Moderate	The cost of maintaining the website running, paying for staff, renting data servers and business up cost might not be covered for with only running adds on the website especially with the existence of ad blockers	Other platforms may charge the student with subscription to use the platforms in the first place. Or they may be funded by governments.	Our platform will have a donation tap, as well as a simple charge fee on the tutor to use some pro features like uploading documents over a certain size or access to analyzing data etc.
the absence of interactive components	Low	A means of communication between the parties and a program that allows for a temporary video connection are the absolute necessities for conducting an online tutoring session. Having only these fundamental features leaves a lot to be desired because teachers are expected to give everything else, such as study materials, visual aids, and practice exams. Certain issues, such as the inability to directly write on sheets, also need to be addressed.	Some platforms try to add some games or quizzes to their platform.	Our platform will be providing Interactive features to encourage learning in a more hands-on way include a digital whiteboard, pre-provided digital study materials, online quizzes, and activities with nice animations for some popular courses

## 4. Product Overview

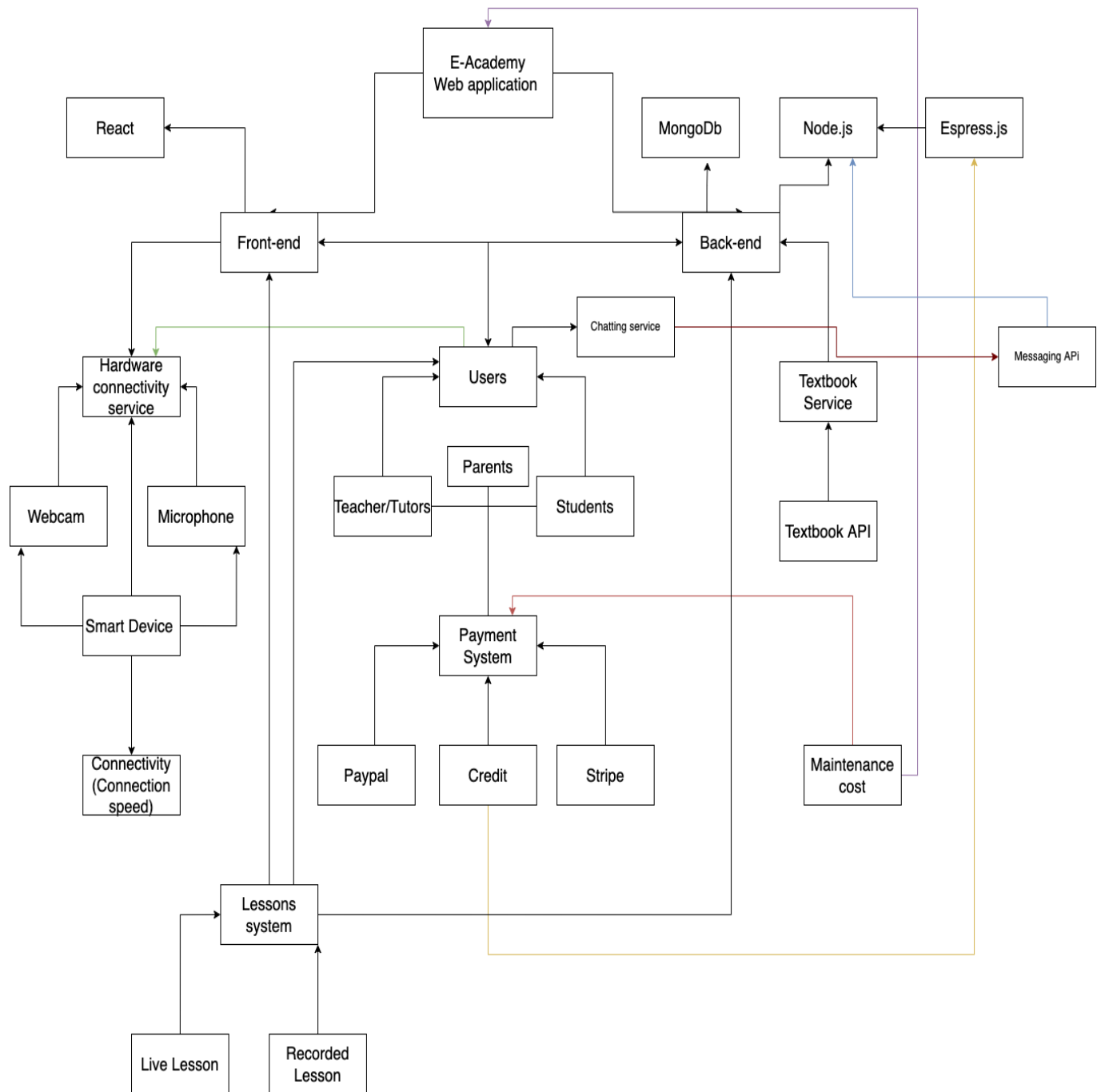
### 4.1. Product Perspective

Sturd E-Academy is an independent product that is primarily a platform for teachers and students to access tutors online. However, Sturd E-Academy is not completely self-contained as it uses third party software such as MongoDB to hold the database that includes all user's private information as well as the reviews and messages that parents and students can leave for the tutors.

Students and parents can register as users on the website and can leave reviews for the tutors. Parents also have the possibility to assign themselves to a student as their parent which gives them access to chatting with the tutor. As a tutor, there's the option of posting their profile, sending feedback, there's a lesson system as well as posting all the subjects that they can help with. All these functionalities are embedded within the system using React.js for the front end of the website and MongoDB and Express.js for the backend. This is done so that the user is not redirected off the website. Also, features such as the textbook services and the chat option for users are functions that are available through API systems. This is embedded in the system through Express.js.

Other systems such as payments are done through credit cards or PayPal. PayPal is an online payment system that makes paying for things online safe and secure. Sturd E-Academy plans to share the interface with PayPal and stripe to make such transactions possible. Additionally, credit card payments are also an option for the customer, and they will be implemented using an API through Express.js.





## 4.2. Assumptions and Dependencies.

Assumptions	Dependencies
All users possess a smart device advanced enough to access the platform	Tablets, laptops, and smartphones are functional enough to access the web application. (Capable of running code smoothly, supportability, etc.)
Users will have access to all types of lessons with a vast variety, at any time.	A fair number of tutors are using the platform to comply with users' needs.
High enough budget for the platform's maintenance cost.	Enough users are subscribed (paying the subscription cost)
Live lessons are running smoothly, without lag, and at a tolerable resolution	Users and tutors are connected to the internet with a minimum download/upload speed that responds seamlessly enough to the lesson stream.
Tutors will have a required setup to record or stream a lesson real-world viewable lesson	Possession of a webcam (camera) and microphone is required for all tutors.
All running systems such as payment, database, and server will always be available	Systems are hosted/running on well-established servers for bugging and crash avoidance
A variety of Textbooks and solutions will be retrieved from an API giving access to premium users	API is available for incoming requests
All payments (Sent by users/ received by tutors) will be processed in an immediate period	Payment systems such as PayPal, stripe or credit card are running with no inconvenience

## 5. Product Features

### 5.1. Core Features

- Browse Tutors (all users): Helps users see who gives classes and check for specific tutors depending on the needs.
- Browse Courses (all users): Helps users see what classes are being given depending on the needs.
- Search (all users): Helps use words to narrow research to some users/courses.
- Create Account: Allows the separation of Tutor/Parent/Student tutors and storing profile data on the database.
- Create a child Account (parent): Allows a parent to create several child accounts he can manage and request lessons for.
- Create Course (tutor): Allows the tutor to showcase his/her skills and allow others to contact them through the course.
- Request a lesson (+ payment) (parent/student): Allows the user to request a lesson from a particular course with a particular tutor. Payment is made as a final step in the feature.
- Accept/Refuse a lesson (tutor): Allows the tutor to accept and refuse lessons depending on his abilities and availability. In case a payment is already made, the requesting user gets refunded.
- Booking a lesson (parent/student): Allows parents who receive a lesson request after a conversation to accept or refuse a lesson/time. Payment is made as a final step in the feature.
- Cancel an accepted lesson (all users): Helps user who scheduled a time and who need to cancel a lesson for any reason. In case a payment is already made, the requesting user gets refunded.
- Booking confirmation (tutor): after a lesson gets booked the tutor giving that course can confirm his/her availability to provide that lesson.
- Auto-mark lesson as complete (system): If a lesson does not get marked as complete after 3 days, the system marks it.
- Send lesson feedback (tutor): After a lesson, the tutor can send a feedback/report of the lesson so that the user can see his/her progress.
- Load a profile (all users): Allows to see profile details (courses, name, image etc.)
- Load a course (all users): Allows to see course details (tutor, skills, level etc.)
- Load a conversation (all users): Allows to load a conversation between any 2 users
- Load lesson feedback (parent/student): Allows to check for the feedback given by a tutor in a previous lesson
- Send a message (all users): Important a process to keep conversations between two people.
- Edit Account (all users): Allows to update any information on the profile in case of mistake or change.
- Edit Course (tutor): Allows to update any information on a course in case of mistake or change.
- Review the tutor (student/parent): After a lesson, gives the ability to rate the tutor and give him/her a review.
- Edit Review (student/parent): Allows to update a rating in case of mistake or change.
- Delete Account (all users): Ability to simply stop an account. Cannot be done in case of a pending lesson or pending money transfer.

- Delete Course (admin/tutor): Ability to stop giving a certain course and removing it from the system.
- Delete Review (admin/student/parent): Ability to remove a review for any reason.
- Report Account (all users): In case of conflict, a report can be created against any user. In case of a lesson-related report, a refund can be processed in case of an accepted report by the user
- Review Report (admin): Accepts or refuses a conflict. Gives the ability to ban accounts and issue refunds.

## 5.2. Other Product Requirements

Requirement	Explanation	Benefit	Quality Requirement	Priority
Hardware	Data must be backed and saved to different physical secure locations.	Maintains the user's money and data safe.	Secured Location. 5 different servers 6h Backups	Very High
Platform	A multilingual platform is very important for users to have.	Bigger user reach	3 Languages: English French Spanish minimum	Medium
Message Performance	Messages must be sent and received in real time	Important for communication between peers and settling appointments	Max time between sent message and received one: 1 sec	High
Page Load Performance	Pages must load fast	Makes the client retention very long	Page must load in less than 1 sec	High
Payment Processing Performance	Payments must be processed in real time and failures must be handled	Allows users to have trust in the platform	Payments must be processed in less than 2 minutes.	Very High
Availability	All services must always stay active (frontend and backend)	Increases user confidence	A maximum downtime of 1h is authorized	High
Documentation	Online manuals and FAQ need to be authored	Help the users know how to use the system and who to contact in case of issue	All documents must be all written	High

## 6. Risk and Feasibility

### Feasibility:

- **Technical feasibility:** The team is ready to carry out such a project. Most features in this project have already been done in the past by the members (ex. login system, admin access, seller/customer accounts, etc.). On the other hand, some elements like the messaging system will need to be researched but there is a lot of information about that online. The team is also familiar with manipulating databases and front-end/back-end communications. For the Front-End, some of the members have already used React, with some having 2 years+ of experience with this technology and others having used Angular (a similar framework). As for the back-end server, some members are already familiar with Express.js which we will also be using.
- **Organizational feasibility:** The organization of the team will be simple. There are 9 developers on the team each working on tasks handed to them through an Azure DevOps board. The tasks are given by the lead developer (himself one of the 9 developers). Daily scrums of around 5-10 minutes are going to be set in place every morning to discuss the progress of each team member and that's where new tasks are going to be assigned. Some will be working on the front-end of the platform and others on the back end. The team leader will be monitoring the progress on both sides and will adjust the teams accordingly. As for the stakeholders, the major parties are going to be the parents, the students as well as the tutors themselves. This means that when working on the platform, we must make it as simple as possible for all those groups of people since we want them to be using our service and not a competitor's.
- **Financial feasibility:** In terms of economics, the app itself is going to be cost-free since we are students working on it for a school project. If the platform was to be implemented, then it would obviously bring in money assuming there is traffic on the website. Traffic would come from marketing which itself would have a cost attached to it. The income would be generated through a % of the sales and through a service promotion program which allows tutors that rank lower to be featured on top of a page for a small premium.
- **Timeline feasibility:** Keeping in mind that the product is going to be developed in an agile method, it is important to note that the timeline is subject to change depending on the users' feedback. The first release should contain the core features that allows the platform to autorun and it should take around 6-7 weeks to develop. After that, we will start receiving bugs and fixes to do on the website. This is where we can start having weekly updates to patch those bugs and add some of the additional features that were discussed.

**Risk:**

- **Domain specific:**
  - Some functionalities might be lacking at first since we are in agile development, and this could make clients go away.
  - Marketing doesn't work overnight and so it could take some time to have clients and so tutors may not find too many jobs there.
  - Funds are needed to pay the admins that will be monitoring the platform.
- **Process specific:**
  - Needing more developers since the set timeline is kind of short.
  - We need to secure the backend because some sensitive data can be leaked and that would cause lots of problems.
  - Having a bad design and needing to switch it all over again.

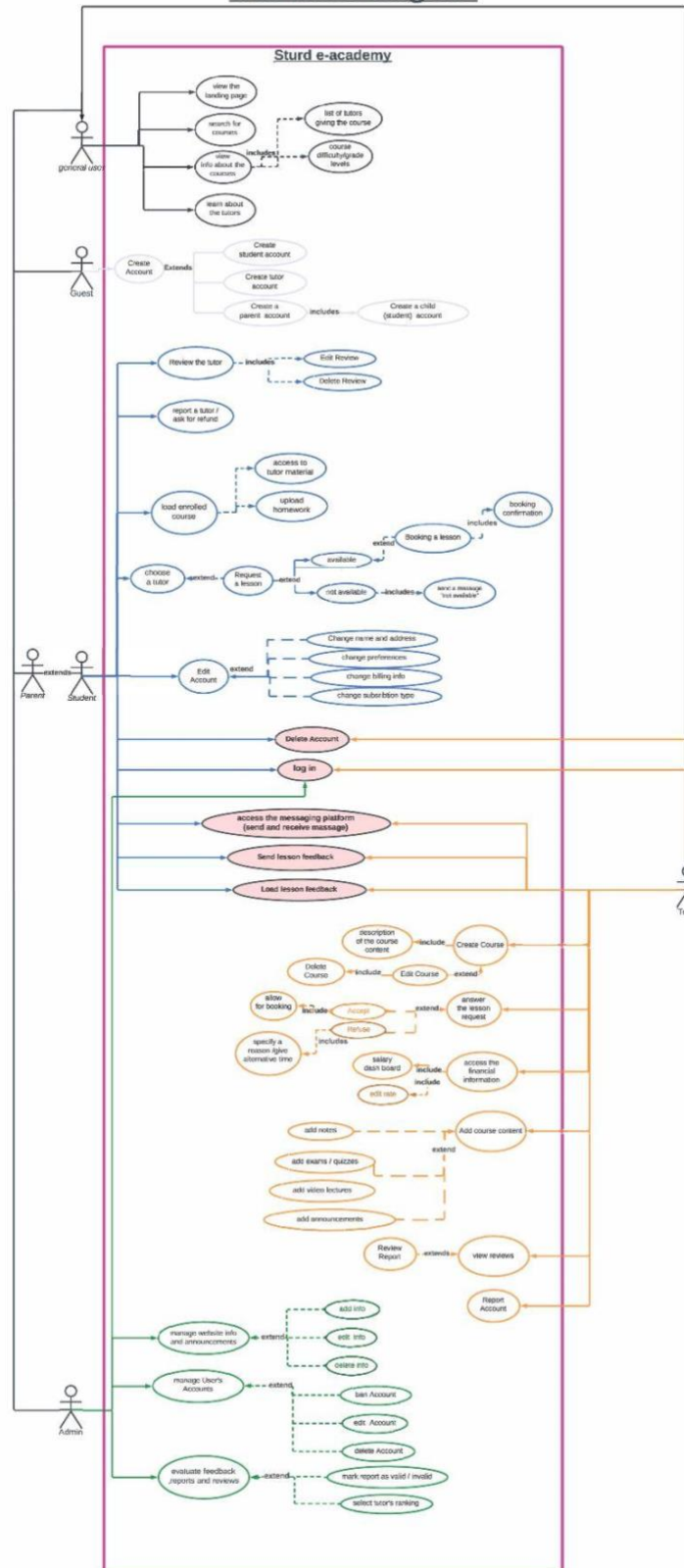
# 7. Use Case Diagram



SOEN342  
Phase II - Group A  
Department of Computer Science and Software Engineering

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## Use Case Diagram





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# Use Case Diagram

