

**GINA CODY School of Engineering and Computer Science
Department of Computer Science and Software Engineering**

**Final Report
Phase 3**

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A report submitted in partial fulfillment of the requirements of SOEN-342.

Concordia University

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Summary of Project

Projet GitHub Repository: https://github.com/AgnesCroteau/SOEN342_Best_Team_Ever

The E-Academy platform is an online tutoring service that is available to students of different ages. The problem that was addressed during this project was that students who struggled with their schoolwork weren't able to find the proper resources to help them overcome these struggles. This problem affected students from the elementary school level all the way up to the university level. Therefore, we decided to create a web-based tutoring service, which would allow students to find qualified tutors for the respective subjects that they may struggle in, as well as additional resources, such as educational videos and textbooks. 3 similar services are already on the market. These services are Succès Scolaire, Tutorax and Tutorat Pro. Our E-Academy platform provides more services than the other platforms mentioned earlier. The ability to rent textbooks, an archive section filled with material related to a specific course, a section reserved for parents to track their child's progress, a forum to ask questions outside of a scheduled time with tutors, a section for tutors to set milestones for the students and a tipping service available for the tutors are original features that the 3 competitors do not possess.

This document is presented as an extension to the vision document from phase 2.

Quality Assurance

Summary

This section will be about testing the different requirements that were described in phase 2 of the design of this project (Figure 2 Use Case Diagram). Below are defined most exception routes and ways to handle them as the policy of Best Team Ever for automated testing.

Here Are the different tests and checks that were done by the Best Team Ever:

1. Validity

During the entire development of the software the team members will follow-up with the stakeholders to assure the validity of the requirements. This will be done by presenting the stakeholder different prototypes of the web applications during the development. The functions proposed by the stakeholders are to be compared with what the system needs to do. If new requirements are found later down the road they are to be added following the CRM procedures.

2. Consistency

To ensure proper consistency Best Team Ever will need to evaluate all the new requirements via the old ones to make sure that requirements do not conflict or offer different descriptions of the same functions that are already implemented. Also members of the team will periodically review the requirements in a systematic manner to ensure that there are no errors and inconsistencies.

3. Completeness

To ensure that the document includes all the requirements and constraints we decided to draw a traceability matrix to check if indeed all the requirements are covered by the given use cases.

Traceability Matrix

| | UC1 | UC2 | UC3 | UC4 | UC5 | UC6 | UC7 | UC8 | UC9 | UC10 | UC11 | UC12 | UC13 | UC14 | UC15 | UC16 | UC17 | UC18 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| REQ1 | X | | | | | | | | | | | | | | | | | |
| REQ2 | | X | | | | | | | | | | | X | | | | | |
| REQ3 | | X | | | | | | | | | | | X | | | | | |
| REQ4 | | X | | | | | | | | | | | X | | | | | |
| REQ5 | | | X | | | | | | | | | | | | | | | |
| REQ6 | | | | X | X | | | | | | | | | | | | | X |
| REQ7 | | | | X | X | | | | | | | | | | | | | X |
| REQ8 | | | | | | X | | | | | | | | | | | | X |
| REQ9 | | | | | | X | X | | | | | | | | | | | X |
| REQ10 | | | | | | | | X | | | | | | | | | | X |
| REQ11 | | | | | | | | | X | | | | | | | | | X |
| REQ12 | | | | | | | | | | | | | | X | | | | X |
| REQ13 | | | | | | | | | X | | | | | | | | | X |
| REQ14 | | | | | | | | | X | X | | | | | | | | X |
| REQ15 | | | | | | X | | | | | | | | | | | | X |
| REQ16 | | | | | | | | | | | | | | | | | | X |
| REQ17 | | | | | | | | | | | | | | | | | | X |
| REQ18 | | | | | | | | X | | | | | | | | | | X |
| REQ19 | | | | | | | | X | | | | | | | | | | X |
| REQ20 | | | | | | | | | | X | | | | | | | | X |
| REQ21 | | | | | | | | | | | X | | | | | | | X |
| REQ22 | | | | | | | | | | X | | | | | | | | X |
| REQ23 | | | | | | | | | | | | X | | | | | | X |
| REQ24 | | | | | | | X | | | | | | | | | | | X |
| REQ25 | | | | X | X | | | | | | | | | | | | | X |
| REQ26 | | | | | X | | | | | | | | | | | | | X |
| REQ27 | | | | | | | | | | | | | | X | | | | X |
| REQ28 | | | | | | | | | | | | | | | X | | | X |
| REQ29 | | | | | | | | | | | | | | X | | | | X |
| REQ30 | | | | | X | | | | | | | | | | | | X | X |
| REQ31 | | | | | | | | X | | | | | | | | | X | X |
| REQ32 | | | | | | | | | | | | | | | | | X | X |
| REQ33 | | | | | | | | | | | | | | | | X | | X |
| REQ34 | | | | | | | | | | | | | | | | X | X | X |
| REQ35 | | | | | | | | | | | | | | | | | X | X |
| REQ36 | | | | | | | | | | | | | | | | | X | X |

Use cases identifiers

| | | | |
|------|--------------------------------------|--|--|
| UC1 | Access general info | | |
| UC2 | sign up | | |
| UC3 | Use Faq chatbox | | |
| UC4 | Select tutorial parameter | | |
| UC5 | select educational level | | |
| UC6 | access archives | | |
| UC7 | access tutoring video | | |
| UC8 | manage time slots | | |
| UC9 | communicate via share boards, forums | | |
| UC10 | access chil progress | | |
| UC11 | communicate vial mail | | |
| UC12 | tip tutor | | |
| UC13 | fill accoun form | | |
| UC14 | share expereience bibliography | | |
| UC15 | marks best answer milestone | | |
| UC16 | authorize account type links | | |
| UC17 | managae acess and bans | | |
| UC18 | log in | | |

Requirements identifiers

| | | | | | | | | | | |
|-------|---|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | |
| REQ1 | Access General Information Sections | | | | | | | | | |
| REQ2 | Student Account Creation | | | | | | | | | |
| REQ3 | Tutor Account Creation | | | | | | | | | |
| REQ4 | Parent Account Creation | | | | | | | | | |
| REQ5 | Chatbox | | | | | | | | | |
| REQ6 | Different types of tutoring options for students | | | | | | | | | |
| REQ7 | feature for students to choose their education level | | | | | | | | | |
| REQ8 | Access Archive containing useful information | | | | | | | | | |
| REQ9 | Upload/Download videos | | | | | | | | | |
| REQ10 | Meeting with tutors | | | | | | | | | |
| REQ11 | Shared Board | | | | | | | | | |
| REQ12 | Students will be able to write a review about their experience with a certain tutor | | | | | | | | | |
| REQ13 | Outside of tutoring sessions, students can ask for homework help in a forum | | | | | | | | | |
| REQ14 | Filing reports for bad behavior | | | | | | | | | |
| REQ15 | Textbook services | | | | | | | | | |
| REQ16 | Students will be able to select their preferred language | | | | | | | | | |
| REQ17 | students can choose to take summer classes | | | | | | | | | |
| REQ18 | Students will have access to a calendar where they can see when their upcoming sessions | | | | | | | | | |
| REQ19 | Students are able to pick their availability for tutoring sessions | | | | | | | | | |
| REQ20 | Parents can view their children's progress | | | | | | | | | |
| REQ21 | Parents can communicate with their children's different tutors | | | | | | | | | |
| REQ22 | Filing a report | | | | | | | | | |
| REQ23 | Tipping tutors | | | | | | | | | |
| REQ24 | Different types of tutoring options for tutors | | | | | | | | | |
| REQ25 | Tutors on the website can always apply for higher levels for education | | | | | | | | | |
| REQ26 | Marking best answers | | | | | | | | | |
| REQ27 | Ability to report a student. | | | | | | | | | |
| REQ28 | Tutors can add milestones and goals for the student to reach | | | | | | | | | |
| REQ29 | Tutor bibliography | | | | | | | | | |
| REQ30 | tutors should be able to set their own fairs based on their experience | | | | | | | | | |
| REQ31 | Tutors should be able to select time slots for tutoring times | | | | | | | | | |
| REQ32 | Authorization of tutor accounts | | | | | | | | | |
| REQ33 | Authorization of student-parent links | | | | | | | | | |
| REQ34 | Student and Tutor Link | | | | | | | | | |
| REQ35 | Ban students, tutors and parents | | | | | | | | | |
| REQ36 | Access to any student and tutor information | | | | | | | | | |

4. Realism

Before taking any requirement from a stakeholder the team has to ensure that the requirement is possible to complete within the given time frame as well as verify if it can be done by the team using the knowledge of the different members as well as the existing technology and the budget. Having team meetings with proper requirement checks will greatly help the team making sure that they do not take on tasks that are impossible to complete.

5. Verifiability

Verifiability will be confirmed in two different ways, firstly the team will use requirement reviews to ensure proper formal specification via a logical language such as Z and second the team will use test-case generation to make sure that the requirements are properly testable.

A Set of Test-Cases that could be done via the help of the traceability matrix to confirm the completeness of the requirements:

| ID | Type of Req | Test Case | Expected Result |
|-------|---------------------|---------------------------------------|---|
| REQ2 | Guest Requirement | Student Account Creation | The guest now has access to all the student features on the website |
| REQ3 | Guest Requirement | Tutor Account Creation | The guest will now receive a confirmation when an admin finally has evaluated their application |
| REQ7 | Student Requirement | Student Chooses their education level | This student will now be assigned an education level (university,college, etc.) which will grant them access to the proper tutors |
| REQ8 | Student Requirement | Archive containing useful information | A student now has access to information posted by their tutor |
| REQ22 | Parent Requirement | Filing a report | A report has now been submitted to an admin of the E-academy containing the information sent by the parent |
| REQ23 | Parent Requirement | Tipping Tutors | The tutor will receive a tip on his e-academy account which he can later |

| | | | |
|-------|---------------------------|--|---|
| | | | transfer to his bank |
| REQ24 | Tutor Requirement | Different types of tutoring options for tutors | The tutor is now able to provide their service in whichever way they are most comfortable (Online/In person or Group/Solo tutoring) |
| REQ25 | Tutor Requirement | Different education levels | The tutor will receive a confirmation from an admin when his credentials are confirmed and he can tutor higher levels of education |
| REQ32 | Administrator Requirement | Authorization of tutor accounts | The guest which has sent the form will now be considered a tutor within the system |
| REQ33 | Administrator Requirement | Authorization of student-parent links | The parents which sent the form will now have access to his children's information on the website |

Change Management

| Element | Description |
|-----------------------------|---|
| CR# | CR001 |
| Title | Change the accessibility of the website |
| Description | Rather than charging students a monthly fee to have tutors, give the resources for free |
| Types of CR | Enhancement |
| Artifacts impacted | This change would impact the positioning, the product overview, the use case diagram, and the risk and feasibility. |
| Importance of the CR | The importance of this change request is low. |

| Element | Description |
|-----------------------------|---|
| CR# | CR002 |
| Title | Change the main communication mean between students and tutors |
| Description | The current system-to-be relies on an email platform for students to communicate with tutors and vice-versa. The change is to implement a communication mean in the website itself. |
| Types of CR | Enhancement |
| Artifacts impacted | This change would impact the product features, the use case diagram, and the risk and feasibility. |
| Importance of the CR | The importance of this change request is medium. |

| Element | Description |
|-----------------------------|--|
| CR# | CR003 |
| Title | Change the main language of the platform. |
| Description | The main language of communication between students and tutors is English. We may want to change it to French. |
| Types of CR | New |
| Artifacts impacted | This change would impact the stakeholders. |
| Importance of the CR | The importance of this change request is low. |

| Element | Description |
|-----------------------------|--|
| CR# | CR004 |
| Title | Implementation or change of a new technology |
| Description | Changing the technology stack, changing the database used, or adding a new technology. |
| Types of CR | New |
| Artifacts impacted | This change would impact the product features, and the risk and feasibility. |
| Importance of the CR | The importance of this change request is low. |

| Element | Description |
|--------------------|---|
| CR# | CR005 |
| Title | Mobile app |
| Description | Develop a mobile app for the platform which will have all similar features at the website |

| | |
|-----------------------------|--|
| Types of CR | New |
| Artifacts impacted | This change would impact the stakeholders, the product overview, and the risk and feasibility. |
| Importance of the CR | The importance of this change request is low. |

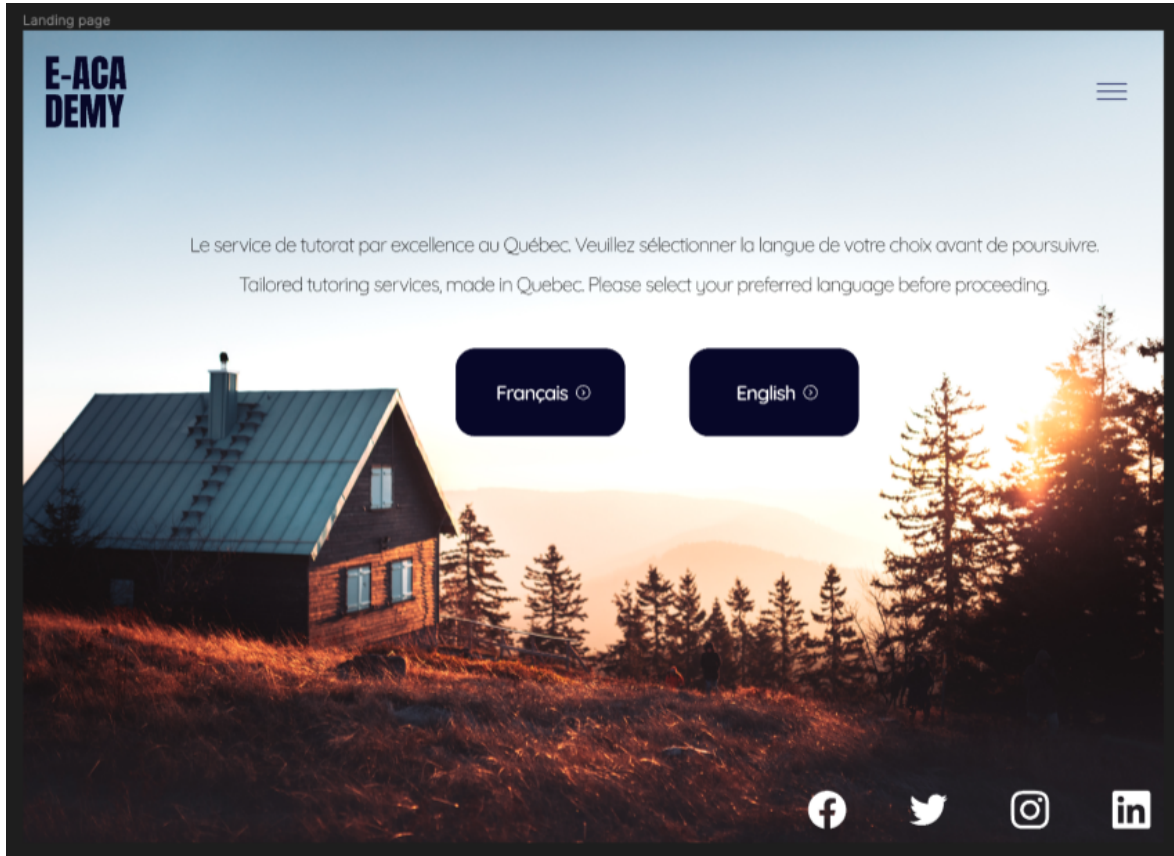
Techniques used for making the changes easy to implement:

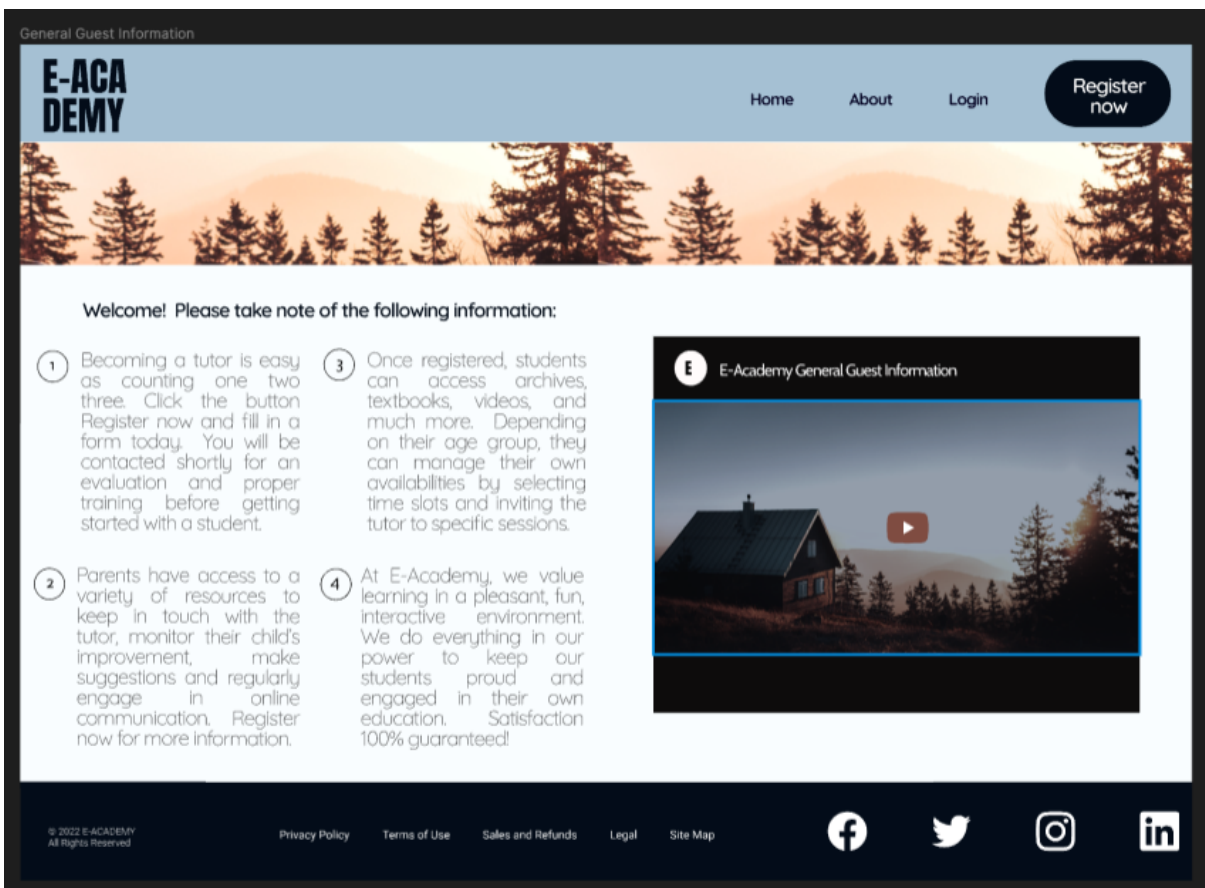
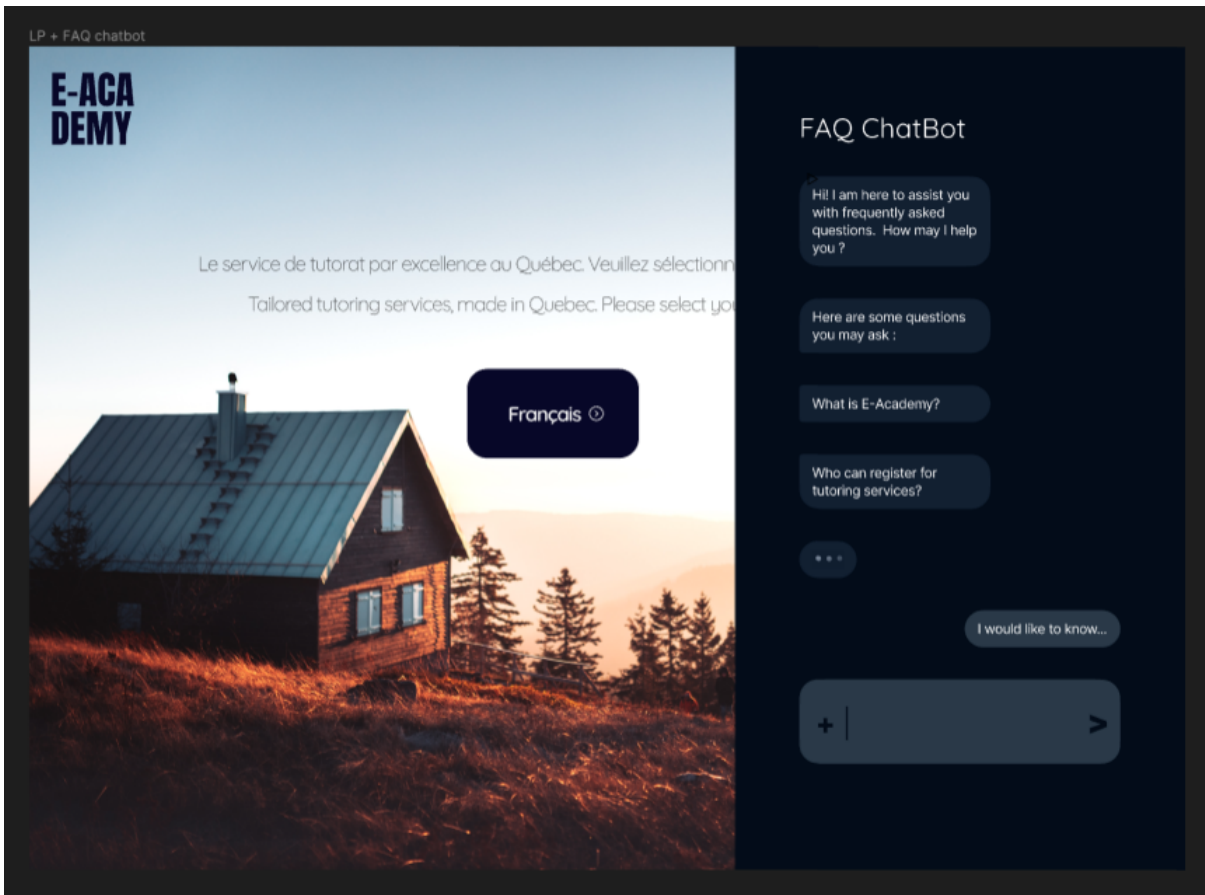
In order to make the changes easy to implement, we use various types of techniques such as flow charting, project planning and data collection to represent, adopt and control the changes required. Flowcharts are graphical depictions of an algorithm that improves the program's readability. It is a basic step for adding new features or designing a new process. Project planning is another technique used for making the changes easy to implement because we follow a series of sequential processes. In order, the series of sequential processes are: creating a change request, reviewing and assessing a change request, planning the change, testing the change, creating a change proposal, implementing changes, reviewing change performance and closing the process. Data collection would help us familiarize with the background of the changes and have a better understanding of their domain. Furthermore, to document all these changes and techniques, we use a version management system, such as GitHub. It allows the process of keeping track of different versions of software components and the systems in which these components are used, and it ensures that changes made by different developers do not interfere with each other. Also, we used an issue tracking system like Bugzilla, which allows anyone to report a bug or make a suggestion for a system change, and they keep track of how the development team has responded to the issues. These systems do not impose a process on the users and so can be used in many different settings. More complex systems are built around a process model of the change management process. They automate the entire process of handling change requests from the initial customer proposal to final change approval and change submission to the development team.

Designs

The following GUI frames were made with Figma used as a design tool. Their main inspiration originates from the concept of a virtual “Deep Springs College”. It was meant to offer a relaxing e-learning environment to all aspiring students. Please refer to the labels on the top left corner of each snapshot below:

(More on : <https://www.figma.com/file/tQk8o38ov7pKAiOvYl9KxN/E-ACADEMY-SOEN342?node-id=3%3A1498&t=oxein3T8fiBTzhDp-1>)







Dashboard

E-ACADEMY


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Bob Lablaw
Student




My Courses




Course Registration




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Student

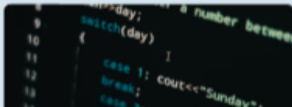
Recently Accessed



Advanced Calculus

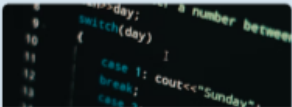


System Hardware




C++ Programming


Course Overview



C++ Programming







Advanced Calculus



System Hardware

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Bob Loblaw
Student

We hear you, What's Up?

Name *

This is about... A student A tutor

Topic *

Advanced Calculus

Message *

Include any relevant details, and names for us to better assess the situation.

0 / 225

File complaint

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Bob Loblaw
Student

4.9 /5

Yi Nuan

Rate Tutor Yi Nuan

Tip Tutor Yi Nuan

★★★★★

Very kind tutor, throws in some jokes here and there. I can definitely say that I feel more prepared than ever for my university classes.

★★★★☆

AMAZING tutor She makes everything so easy! Must take omg... I thought I was going to fail my classes this semester but I aced it thanks to her

★★★☆☆

I dont understand these reviews... I feel like I didn't learn anything

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Bob Loblaw
Student

Rate Yi Nuan

☆☆☆☆☆

Comments

What did you like/dislike about Yi Nuan?

0 / 500

Submit review

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Bob Loblaw
Student

Tip Yi Nuan

Tip

\$1+

Payment Information

Name On Card

enter name

Card Number

enter card number

Exp Date

MM/YY

CW

CVV

Confirm Payment

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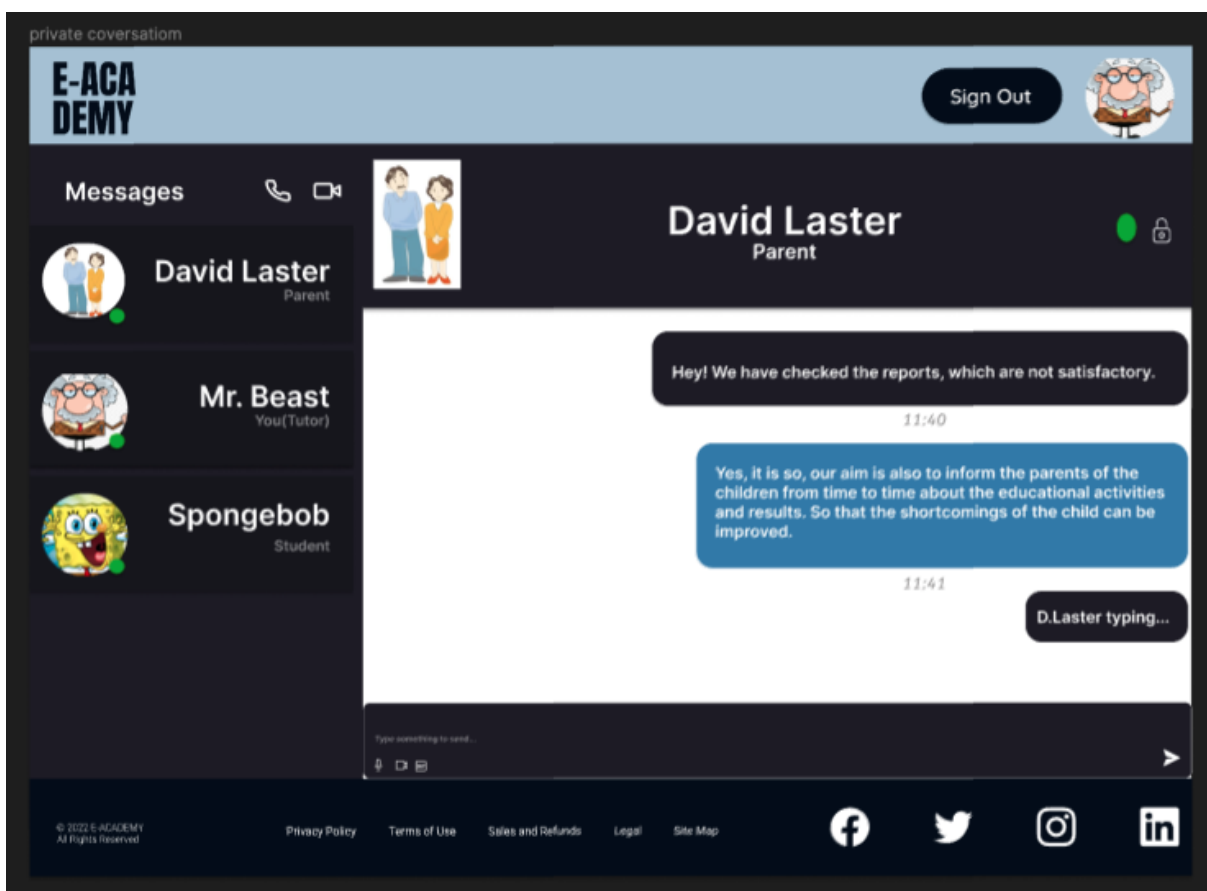
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Contact/Email us

E-ACADEMY

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Name: John Carter

Email: Email address

Phone Number: (123) 456-7890

Role: Guest/Tutor/student

Title: Subject

Additional feedback: If you have any questions, please type it in here...

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Mathematics is the basis of reason.
Mathematics

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Marc St. Parent

STATS

Grades

ACTIVITY

55 Quizzes

#2 Leaderboard

83% Accuracy

86% Recall

WEAKEST TOPICS

Thermodynamics 28% Correct

Electricity 35% Correct

Web Programming 40% Correct

STRONGEST TOPICS

Interpersonal Communication 95% Correct

Cyber Security 90% Correct

Algorithm (Java) 87% Correct

Leave feedback for tutor

Feedback

“While your work is good, I feel you are becoming complacent – keep looking for ways to improve. For example, it would be good to see you concentrating harder on providing critique of the ideas explored in the class.....
John

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PHYSICS TITLE

Michael J. Jipping

\$74,95 - \$121,00

★★★★★ (40)

PHYSICS TITLE

Alcamy

\$94,95 - \$121,00

★★★★★ (40)

MATH TITLE

James Joseph Sylvester

\$84,95 - \$121,00

★★★★★ (30)

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