
Software Requirements Specification

for

Learning Center Application

Version: 1.6

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Team: Learning Center 152

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Table of Contents

1. Introduction	1
1.1 Purpose	1
1.2 Document Conventions	1
1.3 Intended Audience and Reading Suggestions	1
1.4 Product Scope	1
1.5 Abbreviations	1
1.6 References	2
2. Overall Description	2
2.1 Product Perspective	2
2.2 Product Functions	3
2.3 User Classes and Characteristics	3
2.4 Operating Environment	4
2.5 Design and Implementation Constraints	4
2.6 User Documentation	4
2.7 Assumptions and Dependencies	4
3. External Interface Requirements	5
3.1 User Interfaces	5
3.2 Hardware Interfaces	5
3.3 Software Interfaces	5
3.4 Communications Interfaces	6
4. System Features	6
4.1 Supplemental Instruction	6
4.2 Academic Success Coaching (ASC)	6
4.3 Tutoring	7
5. Other Nonfunctional Requirements	8
5.1 Performance Requirements	8
5.2 Safety Requirements	8
5.3 Security Requirements	8
5.4 Software Quality Attributes	8
5.5 Business Rules	8
• Appendix A: Analysis Models	9
Product Perspective: (See next page)	9
Product Functions:	10
UML For Users:	11
User Interface (Home Screen):	12

User Interface (Tutor → Subject Selection):	13
User interface (Supplemental instruction subjects):	14
● Appendix B: To Be Determined	14

Revision History

Name	Date	Reason For Changes	Version
Romeo Vanegas	07MAR23	Initial Draft	1.0
Romeo Vanegas	27APR23	Updated for final deliverables	1.5
Romeo Vanegas	04MAY23	Final revision for submission	1.6

1. Introduction

1.1 Purpose

“Learning Center App” is a sub application for the Fresno State official app. The purpose of this document is to present a detailed description of the mobile application called the “Learning Center” (also known as the: Learning Center App), establish the base functionality and the benefits that current students will gain from its use. This document was created for all entities involved as to understand the objectives, goals, and the potential positive impact this application will have for the Fresno State Learning Center and those who use its services.

1.2 Document Conventions

The focus of this document are the high priority requirements that will be implemented in the final deliverables.

1.3 Intended Audience and Reading Suggestions

The intended audience for this document are all entities associated with this project such as: Development team, project sponsors, and beneficiaries (i.e. FS Learning Center).

1.4 Product Scope

The **Learning Center** application will be designed to facilitate access to all of its services (Academic Success Coaching, Tutoring and Supplemental Instruction) in a mobile friendly application using an intuitive and accessible interface. The goal of this application is to facilitate access to these services to as many students as possible, expanding its current use from only a Desktop/Laptop website.

1.5 Abbreviations

- **ASC** - Academic Success Coaching
- **API** - Application Programming Interface
- **App** - Application
- **App Store** - Apple inc’s Software application market place
- **FSM** - Fresno State Mobile (Application)
- **HTML** - HyperText Markup Language
- **JSON** - Java Script Object Notation
- **LC** - Learning Center
- **Play Store** - Alphabet’s (Google) Software application market place
- **SI** - Supplemental Instruction

1.6 References

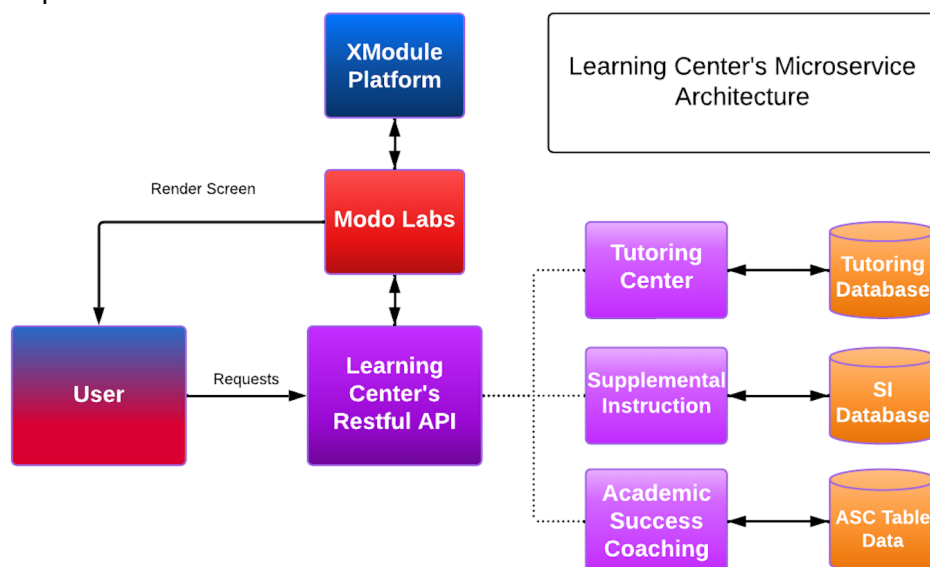
- **Modo Labs**
 - Modo Labs provides an interactive user interface that will facilitate how an application's design will look on mobile and desktop.
 - <https://modolabs.com>
- **XModules**
 - XModules is an extension of Modo Labs that allows creators to access more dynamic styling and coding choices. XModules will connect to Modo Labs to render given code in a JSON format.
 - [https://modolabs.com/type/blog-post/introducing-xmodule-for-modo-campus/#:~:text=XModule™%20allows%20you%20to,existing%20screens%20with%20XComponent™](https://modolabs.com/type/blog-post/introducing-xmodule-for-modo-campus/#:~:text=XModule%20allows%20you%20to,existing%20screens%20with%20XComponent%20TM)
- **Fresno State Learning Center**
 - <https://studentaffairs.fresnostate.edu/lrc/index.html>

2. Overall Description

2.1 Product Perspective

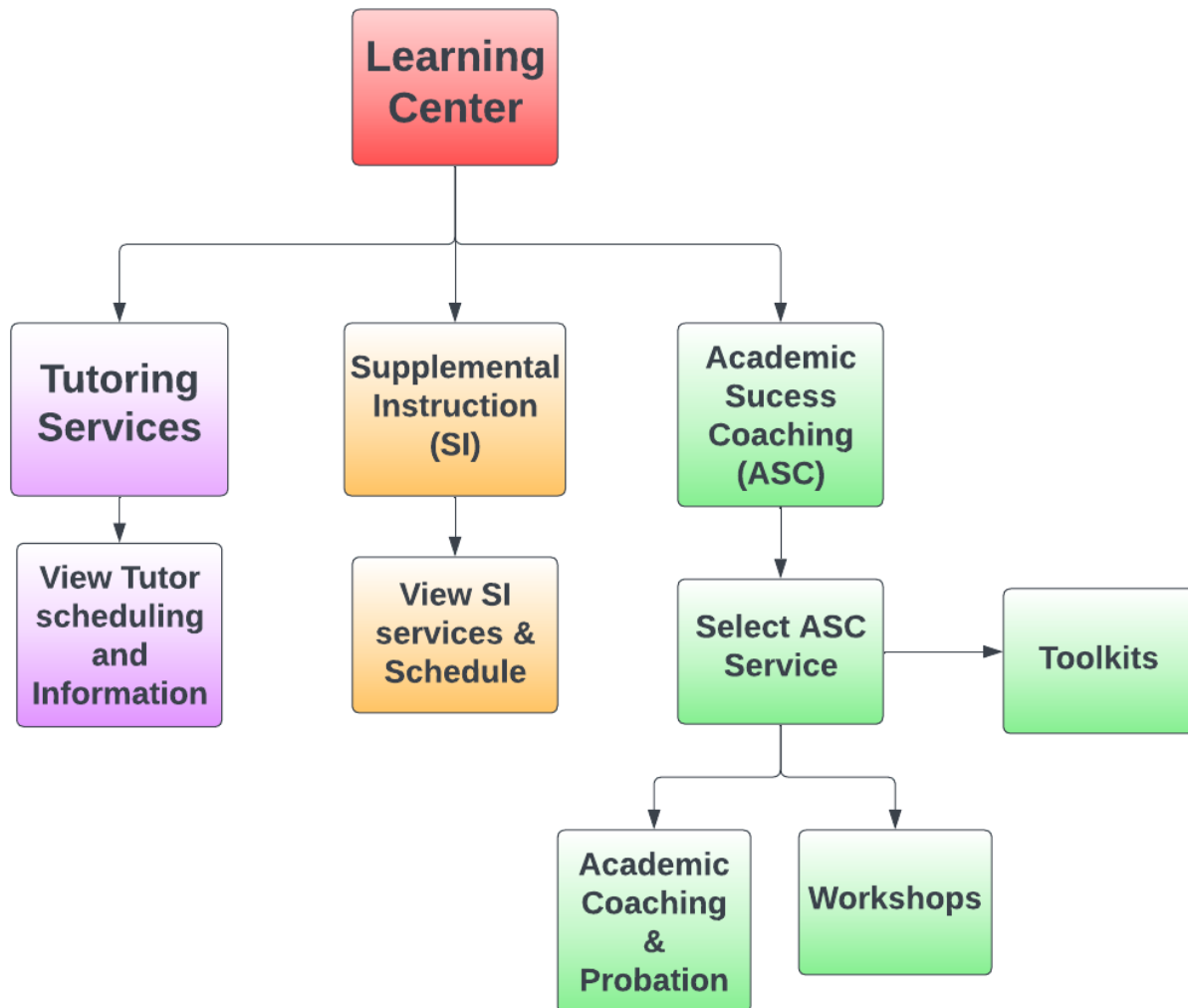
The Learning Center mobile application is a mobile version of the existing desktop website that will be optimized for mobile devices. It will comprise of the following: Supplemental Instruction (SI), Tutoring and Academic Success Coaching (ASC).

- **SI:** consists of courses that will have additional or “supplemental” instruction in collaboration with an existing course. Courses that appear under SI will only be shown/available to students that are currently enrolled in a course that offers SI.
- **Tutoring:** services shown to the user for courses that a student is currently enrolled in. Tutoring services facilitate a student's success.
- **ASC:** An umbrella of services that are available through the university including but not limited to: Academic probation and/or coaching, Toolkit resources, and Academic Success Workshops.



2.2 Product Functions

- Access the “Tutoring Center” Tab
 - View Tutoring Services and Appointments
 - View who are the tutors and their schedules
- Access the “Supplemental Instruction” Tab
 - View information regarding **SI** services and how to access them.
 - View subjects and SI leaders
- Access the “Academic Success Coaching” Tab
 - View Academic Success Coaching Workshops
 - Toolkits - personal resources for students
 - Schedule an appointment with an Academic Coach



2.3 User Classes and Characteristics

Typical users:

- Students

- Undergraduate (Freshman to Senior).
 - Has ability to schedule or enlist for services.
 - Students will be pre-authorized via a 3rd party method.
 - Only services a student is eligible for will be available.
- Tutors/Staff/Faculty
 - Will provide services in SI, ASC or Tutoring.
 - Will be able to update availability status.

2.4 Operating Environment

The **LC** application will have interoperability with Apple IOS and Google's Android operating systems via a Modo Labs powered **Fresno State Mobile (FSM)** application. All that is required to operate its features will be a stable internet connection: either through Cellular or WiFi and a current version of the **FSM** application. The **LC** application is a sub-application to the **FSM** application. The **FSM** application is available through the Apple "**App Store**" and the Google "**Play Store**."

2.5 Design and Implementation Constraints

The **Learning Center** Application uses a Modo Labs platform. Primary constraints are platform related. The application will be limited to a subset of **HTML** tags using a **JSON** programming interface and dynamic page loading via external **API** calls. The features and functions that are available to developers are described in the Modo Labs documentation.

2.6 User Documentation

User documentation can be available once the product is beyond the prototype phase.

2.7 Assumptions and Dependencies

Assumptions:

- No errors in the code
- Fast accessible data
- Search friendly system
- Accessible from anywhere with a stable internet connection (cellular or WiFi)
- All information on this website is available to designated users

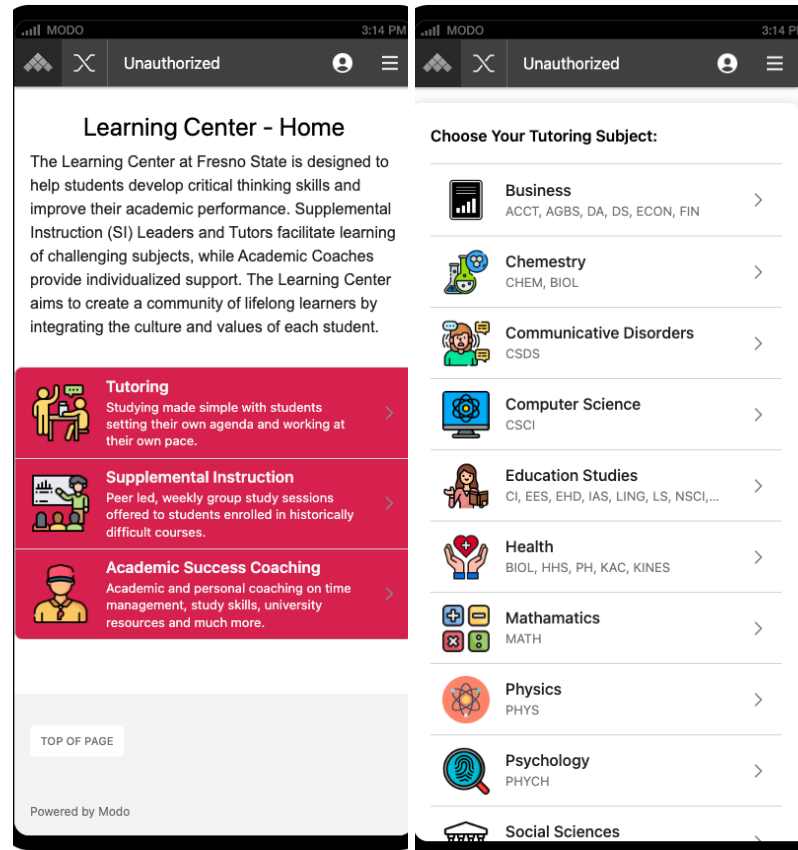
Dependencies:

- Modo Labs
- XModules
- Fresno State Mobile application
- Backend infrastructure (AWS) is running and accessible.
 - Docker
 - Node.js
 - MongoDB

3. External Interface Requirements

3.1 User Interfaces

Shown below is the Learning Center Home Screen. This screen is what all students will first interface. Home > Tutoring example. The interface is touch friendly and intuitive



3.2 Hardware Interfaces

Supported Devices: Apple iPhone and most (Google) Android based devices that have access to the “App Store” or “Play Store” respectively and are able to install a current version of the **Fresno State Mobile Application**.

3.3 Software Interfaces

The app will be supported by a relational database that will allow for data storage. The user will interact with this database by the events that are triggered by the end user. Whether that will be in the forums of queries, requests for information or store changes for the current user.

3.4 Communications Interfaces

The application will require an always on internet connection via cellular or WiFi. Information is updated in real time such as appointments, tutor status and media.

4. System Features

System features are best described using a “**Use Case**” paradigm, as features will depend on which use case is selected. There are 3 most common use cases:

4.1 Supplemental Instruction

Use Case	User selects Supplemental Instruction
Description	Allows users to view SI availability.
Actors	Registered Users
Precondition	Users are logged in via Fresno State’s OAUTH system
Post condition	Users are able to view SI offerings for applicable courses.
Functional requirements (steps):	<p>Users will view 4 categories of information.</p> <ol style="list-style-type: none"> 1. SI course registration initiative 2. FAQ for Students 3. FAQ for Faculty 4. Awards and Recognition <p>Users will be able to browse/select questions or categories of interest.</p>

4.2 Academic Success Coaching (ASC)

Use Case	User selects ASC
Description	Refers user to view services offered by ASC
Actors	Registered Users
Precondition	Users are logged in via Fresno State’s OAUTH

	system
Post condition	Users are able to view and/or register for ASC services.
Functional requirements (steps):	<p>Users are presented with the 4 services that the learning center provides.</p> <ol style="list-style-type: none"> 1. Academic Coaching 2. Academic Success Workshops 3. Toolkits 4. Probation <p>Users will be able to browse or select the service of interest.</p>

4.3 Tutoring

Use Case	User selects Tutoring
Description	Refers user to list of subjects (courses)
Actors	Registered Users
Precondition	Users are logged in via Fresno State's OAUTH system
Post condition	Users are able to view available subjects for tutoring.
Functional requirements (steps):	<p>Students will be presented with a list of available subjects.</p> <ol style="list-style-type: none"> 1. Student will select a subject 2. Select an available tutor 3. View and verify time/availability

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The system must be interactive, and the delays should be minimal. There will be a relational database that will hold tables for the three different microservices (One microservice for each LC service) that will be provided. Through the use of Modo Labs and XModules, the rendering of pages will be performed within seconds.

5.2 Safety Requirements

LC is not responsible for any possible damage, loss, or harm caused by clicking on any additional links that are provided by California State University, Fresno. Be aware and carefully examine each link to ensure your safety.

LC is also not responsible for any incorrectly filled request forms sent to LC. Be sure to complete all forms appropriately to ensure the proper requests are made.

5.3 Security Requirements


LC is not responsible for any possible malware or viruses caused by clicking on any additional links. Be aware and carefully examine each link to ensure your safety.

5.4 Software Quality Attributes

- Accessibility: This application will be accessible to all users.
- Dynamic: LC will update its database according to the Learning Center provided by California State University, Fresno
- Availability: LC will be hosted on AWS's Cloud Services. This will allow LC to be available at all times, to all users.
- Correctness: The data provided will be processed as accurately as possible, based on the Learning Center of California State University, Fresno.
- Maintainability: A simple User Interface design will allow for more dynamic and simpler maintenance.
- Reliability: Any data provided will not corrupt a user's device or cause harm to any users.
- Reusability: The data will be accessible at all times and by all users.
- Usability: A simple US/UX design will allow users to enjoy using LC.

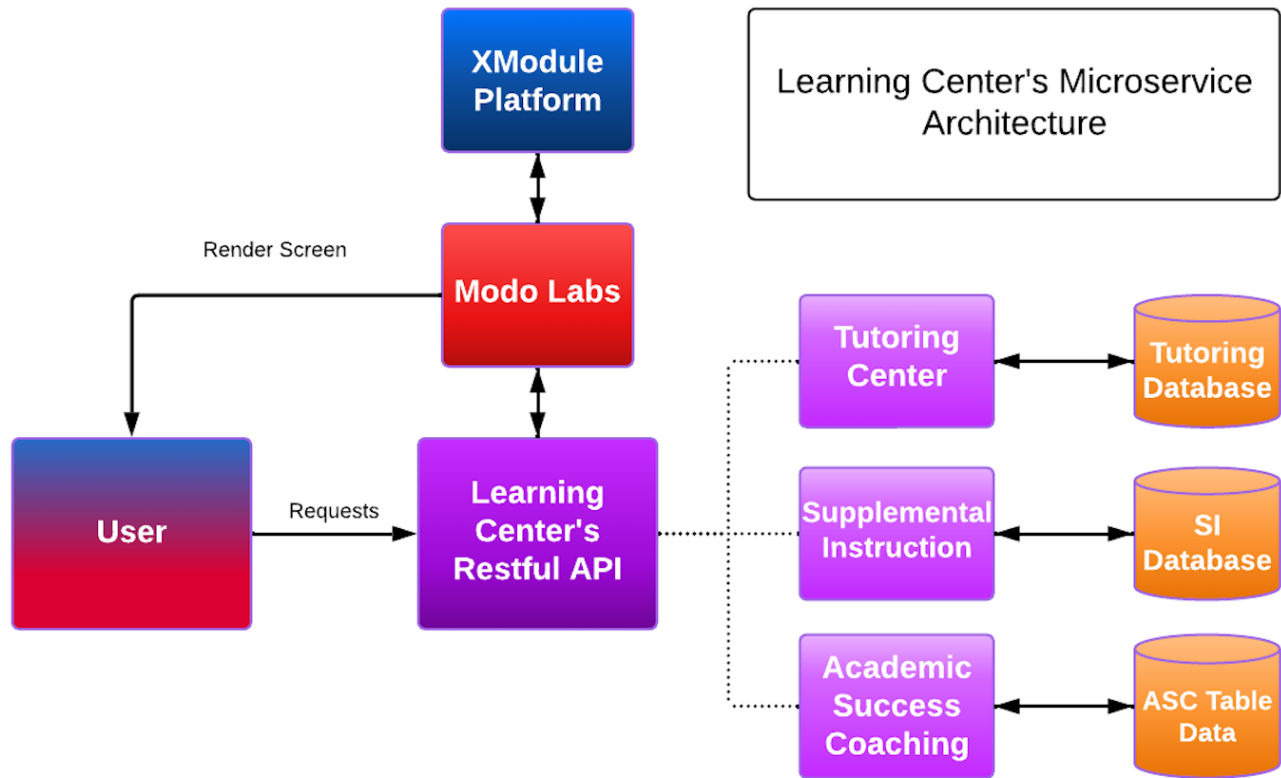
5.5 Business Rules

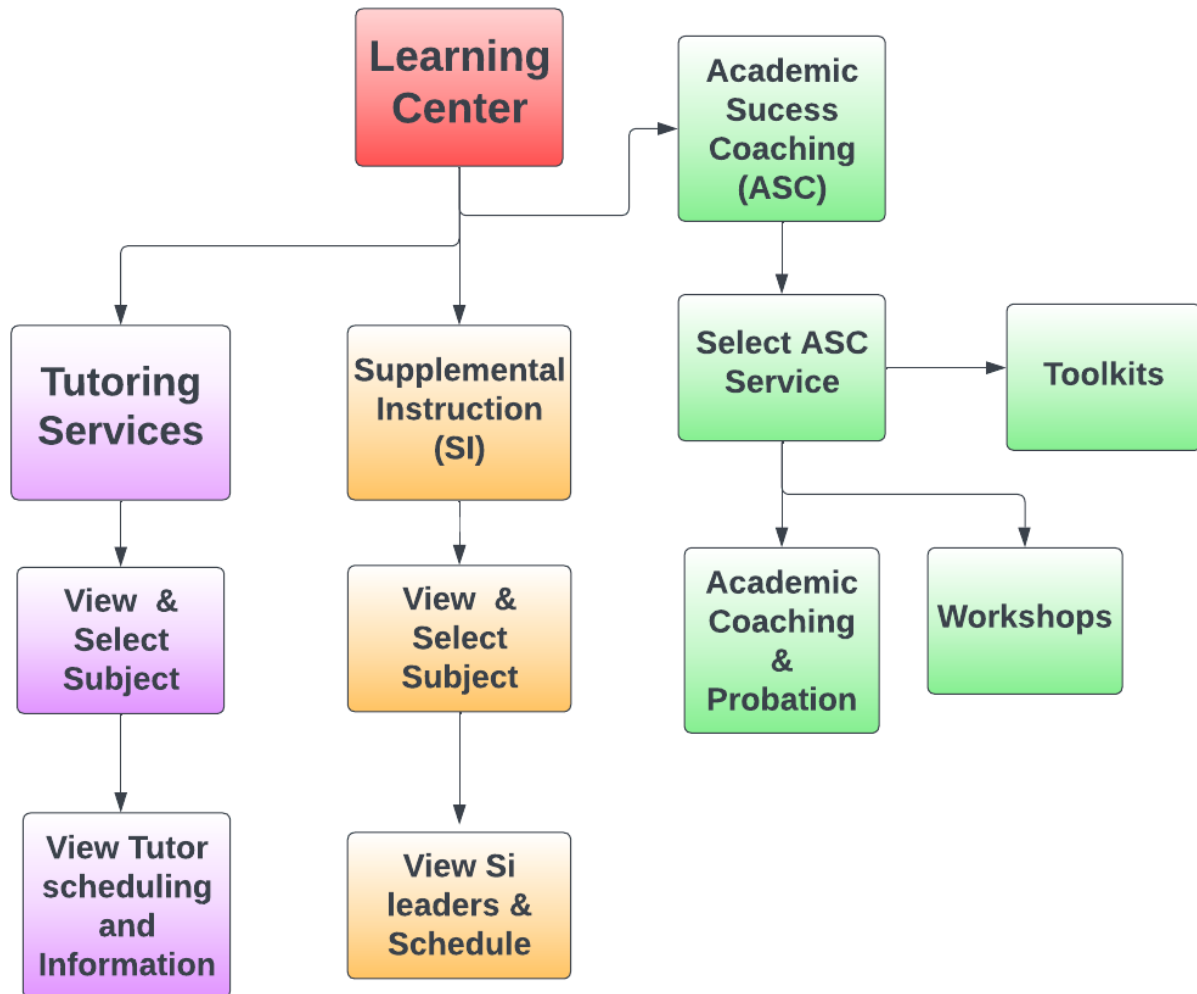
All business rules and regulations are documented here.

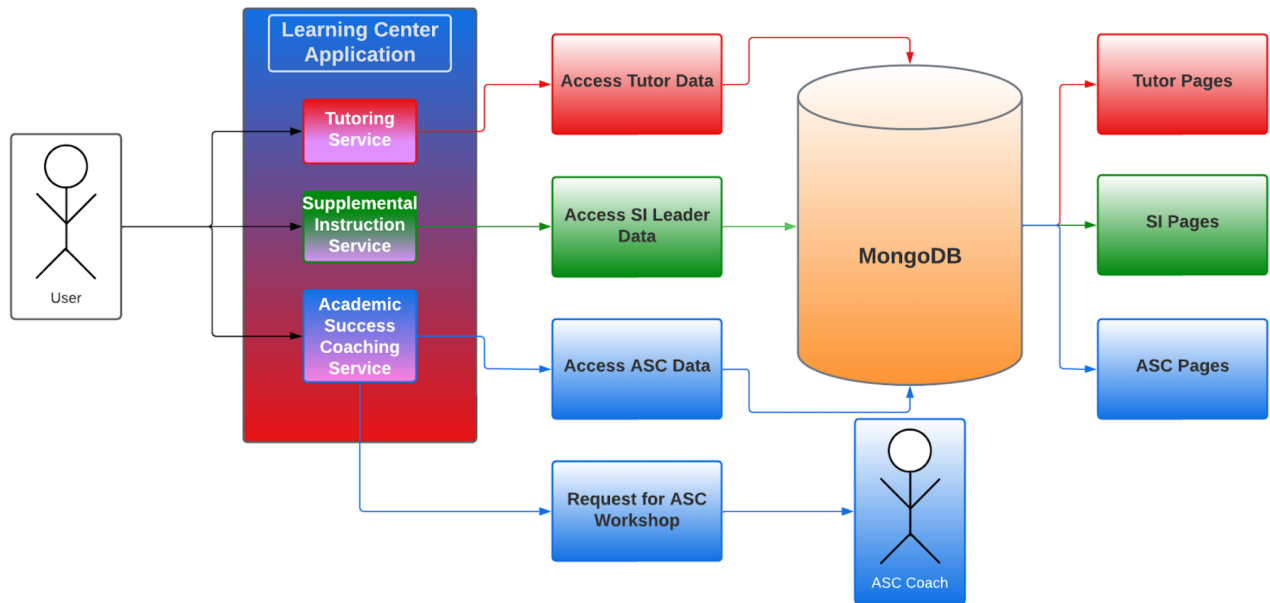
-  Learning Center Application Proposal.pdf

● Appendix A: Analysis Models

Product Perspective: (See next page)

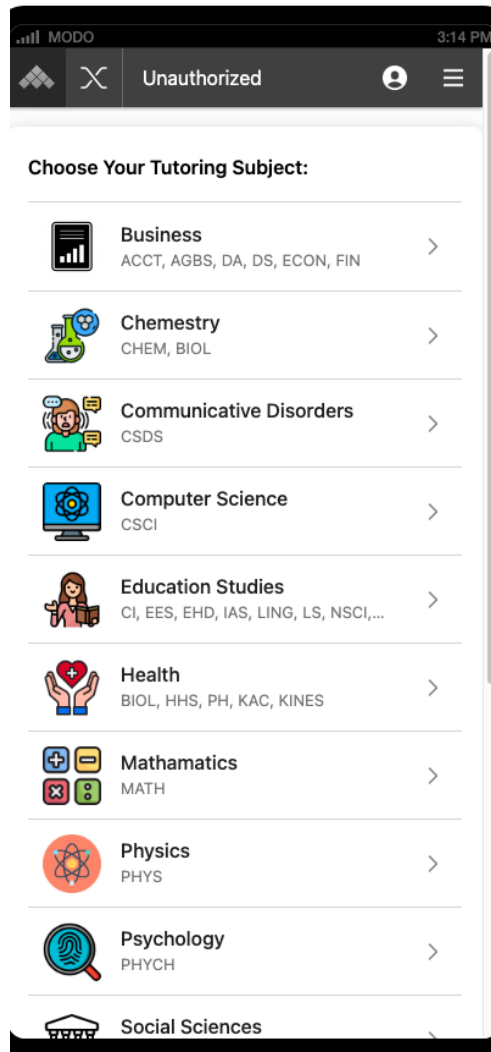


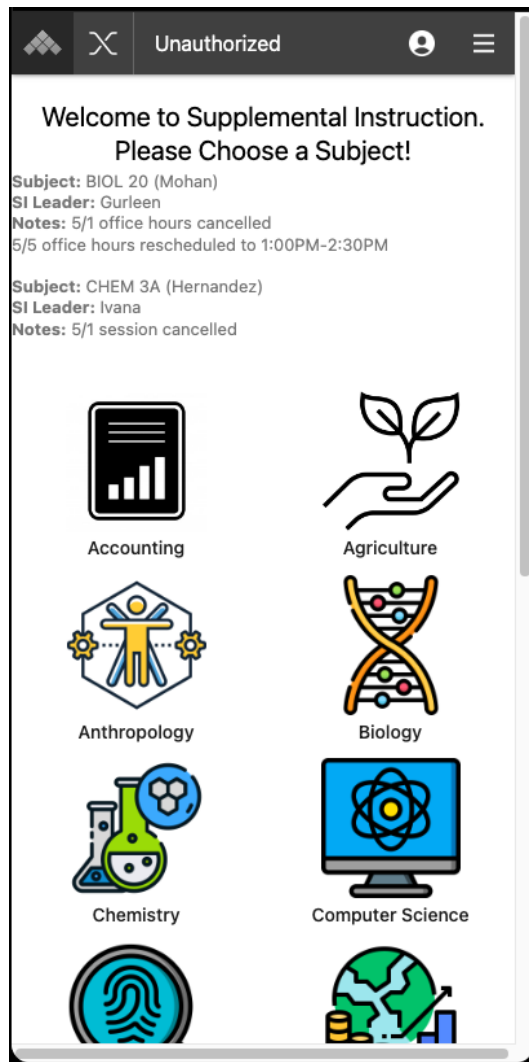
Product Functions:

UML For Users:

User Interface (Home Screen):



User Interface (Tutor → Subject Selection):

User interface (Supplemental instruction → Subjects):

- **Appendix B: To Be Determined**
- Section 2.6: User Documentation