
Intuitive Study App

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****APPENDED ADDED AS OF 4/16/25**

INQUISITIVE STUDY SITE (ISS)



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Be aware, ****[Highlighted text]** indicates the addendums performed on 4/16/25. We ultimately chose to make these additions to the document for the reader to see the differences between this proposal and the final product. All content that is not highlighted is true to the original document, and has not been edited in any way.

Introduction :

This project's goal is to create a free website-based platform that users can easily access to study subjects from their class in a manner that is tailored to their preferences. Users will be able to work with sets of problems that they need to study, the website will also suggest other problem sets that the user may find useful in their studies of a certain subject.

Motivation :

There are many study tools available on the world wide web. However, many of them are blocked by what's commonly referred to as a "pay wall," which is simply a block put in the way of users until the host of the website/resource is paid for the user's access and usage. Our goal is to create a free and easily accessible platform that allows users to study any subject (mathematics, sciences, literature) they need, without adding another bill to pay.

Objectives :

I. Desktop Website Application

A website that is hosted on a server that anyone with an internet connection may access. It will act as a study tool, allowing users to create and utilize any study set they would like.

II. Frontend and Backend

The frontend of our website will act as a friendly user interface for those accessing the website. The backend of the website will send study sets to the server for storage, and can send study sets out to users for their use.

III. Machine Learning

The study sets that the users would utilize would be identified with certain tags. An algorithm based in the backend of the website would then recommend other study sets based on the tag selected (i.e, "Biology" or "Math").

** We were unable to add in a recommendation system due to time constraints. We do, however, have the tag system implemented in the form of filters during a search.

Implementation Techniques :

I. Web Development Languages

HTML, CSS, and/or JavaScript for the frontend, and Python for backend work

** Ultimately, we used Node.JS and MySQL for the backend database management.

II. Server Hosting

Self-Hosted on remote hardware || Potential hosting from; Heroku, Netlify

May need to mess with DNS, ports, etc. with set-up.

** After a great deal of research, we chose AWS for a variety of reason; cost, flexibility, reliability...

III. Databases

i. SQL (Structured Query Language) will be used as our primary database for data creation, manipulation, searching, and storage. This will be used for user information, such as usernames and passwords.

ii. MongoDB will be used as a secondary database for data creation, manipulation, searching, and storage. This will be for user input, i.e, the data sets anyone uses for study material.

** We never implemented the MongoDB since we were able to use the same database for everything in the project. As of now, all data is encrypted and stored in separate tables in the database.

Potential Users :

The potential users for this application could be students or faculty of any school in any circumstance, since this application is meant to act as a free alternative to online tools and resources that may already exist.

Features and Deliverables :

I. Remote Data Storage

Allow users to create, store, and freely utilize any study set based on data the user has entered.

II. Database Analysis and Management

Based on the user's search input, if the requested data is not found or available for use then either an error will be reported to the user, or the website will recommend other study sets with the provided tag. The application will also be able to remove study sets from the database.

III. Data Encryption

Encrypt and decrypt any online user's connection to the website for the sake of the user's security when signing into their account.

**** User's account details are also encrypted, on top of their https:// connection to the ISS.**