Introduction

Problem

Background

College courses with a high level of difficulty can present a challenge to Teaching Assistants (TAs), which results in a lack of TAs willing to help teach the course. This can result in increased load on TAs and professors, cancelled recitations, and lower quality feedback for students.

Definition

Virtual TA will alleviate the pressure placed on TAs and professors by providing students with supplementary help. It will address students’ questions immediately, providing a response that is supported by course materials and helps the student discover the answer to their question.

Customer

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The software is marketed toward professors at public/private colleges and universities that use Discord as a means for communication with students.

Expectations

Professors expect supplementary materials to aid students in the learning process, not to do it for them. Professors can assume that the Virtual TA will not provide students with solutions to assignments.

End User

Undergraduate college students are the primary end user of the software.

Requirements

User Stories

As a professor, I want to provide students with instant help so that their learning process is not hindered.

As a student, I want an immediate response to questions so that I don’t have to wait for a TA or professor to respond.

As a student, I want to be directed to course materials in response to questions so that I can understand the content.

As a student, I want to let the professor know if the bot wasn’t helpful so that I can receive additional help.

Functional

FR#1 Respond: The bot should respond to posts/questions made in the forum channel of a class Discord server.

FR#2 Cite Sources: The bot should direct the student to the materials that contains the answer to their question.

FR#3 Raise Issue: The bot should accept feedback from the student asking the question and alert the professor if the bot’s response is not sufficient for the student.

Non-functional

NFR#1 Reaction Time: The bot should respond to questions posted in forum channels within 1 minute of being posted.

NFR#2 Ease of Use: Users should be able to set up the bot and run it via CLI after reading the instruction page.

Scenarios

UML Diagram

Deployment Diagram\*