

Discord Bot Integration for Replit Teams for Education



Team 15

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Project Overview

Problems:

- Students often have many questions when it comes to programming
- Questions can be repetitive
- Questions come at many times throughout the day

Solution:

- Create a Discord bot that answers student questions
 - No teacher needed
 - Questions are answered immediately
 - Convenient for everyone



Broader Context

- Public health, safety, and welfare impact
- Global, cultural, and social impact
- Environmental impact
- Economic impact

User Needs

Students in Programming Classes

Students in programming classes need an efficient method to answer questions on homework assignments because a quick feedback loop improves student learning.

Teaching Staff

Teaching staff need to reduce repetitive student questions because answering the same question over and over is not an efficient use of time.

Prior Work/Solutions

StudyBot

A Discord bot which aims to enhance the learning experience of students on Discord by providing materials that may be useful while studying.

Pymon

A Discord bot which can answer student questions based on a predefined set of responses.

Technical Complexity

- Components/Subsystems:
 - Ability to have automated replies to student questions
 - Ability to organize and micromanage conversations
 - Ability to create and edit threads in Discord
 - Ability to simplify complicated error messages for easy understanding
 - Ability to run code and test cases within Replit
- Problem scope

Design Decisions

- Ticketing System
- Use of Threads
- Docker
- Programming Language - Python
- Py-Cord



PyCord

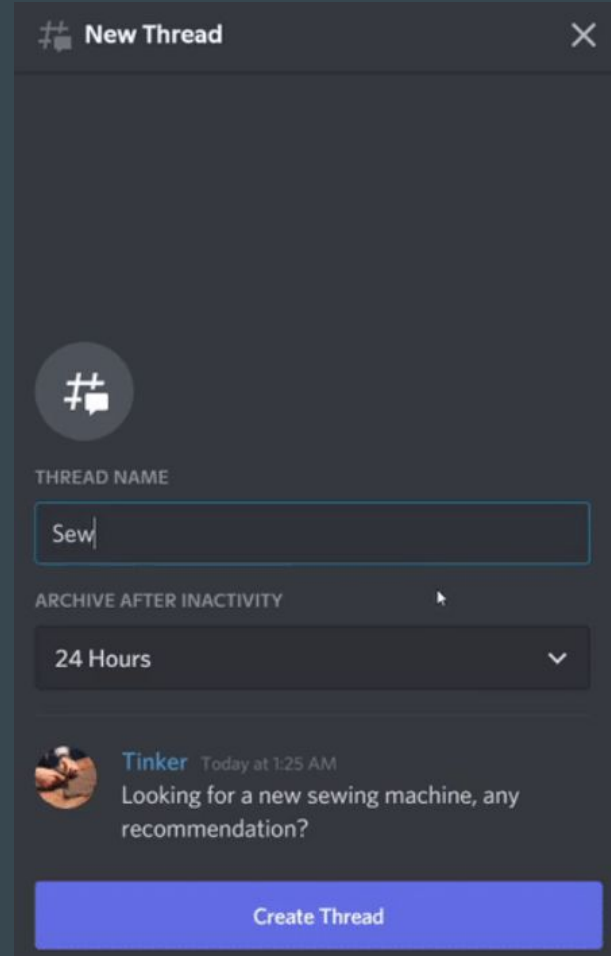
The library for building Discord bots in Python.

Ideation/Decision Making

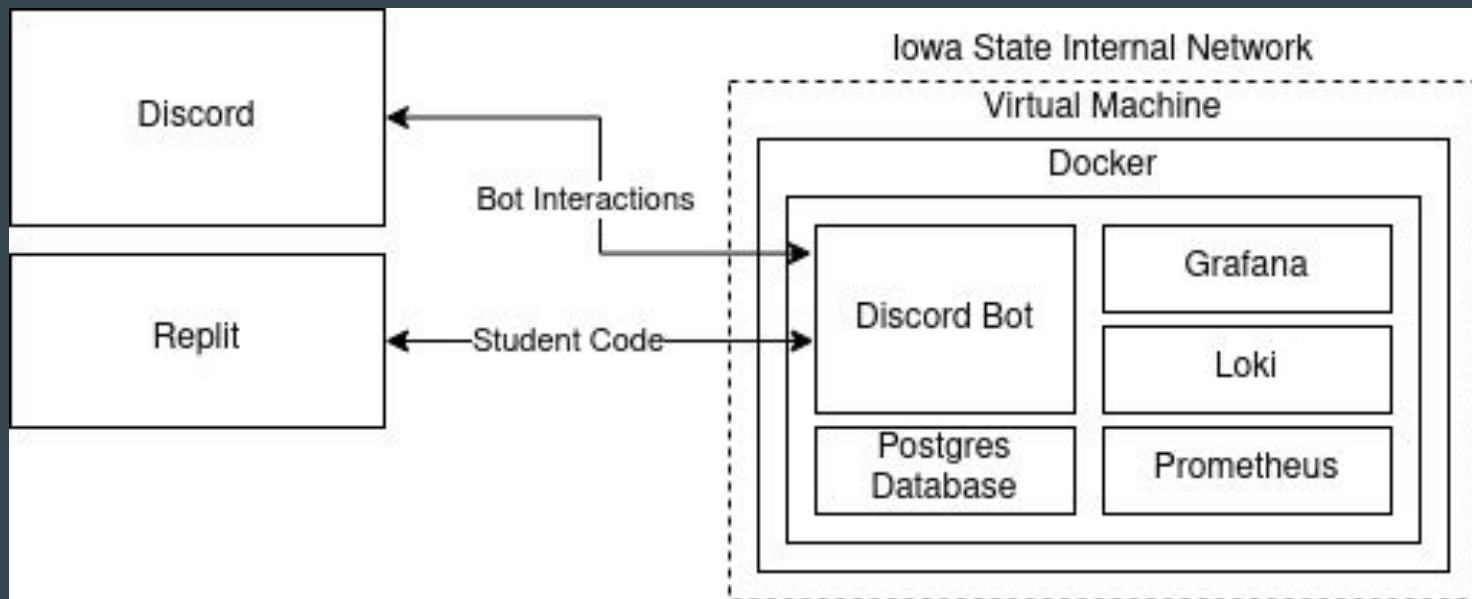
	Will be used in the project as well						Will be used, but not to too much extent	
Message sending, role management, and voice connections	Discord.Py	Very applicable and easy to implement				Easy to implement, but not always useful	Bot Templates	There is not a template out there perfectly suited for our needs
	Python wrapper for the Discord API						Developers' shared templates or starter code	
			Discord.Py	Will be heavily used throughout the project	Bot Templates			
			Allowed for easy to use slash commands and button views	Py-Cord	Highly scalable with fast performance			
			Direct API Interaction	A Python wrapper for the Discord API	Discord Bot Maker			
	Will more than likely not be used in the project						Will not be used for this project	
Clunky and very time consuming	Direct API Interaction	The more difficult path of creating a Discord bot.				Does not require any programming knowledge	Discord Bot Maker	Defeats the purpose of coding the bot to our liking
	Interact with the Discord API using HTTP requests and websockets						A drag-and-drop interface for creating Discord bots	

Proposed Design

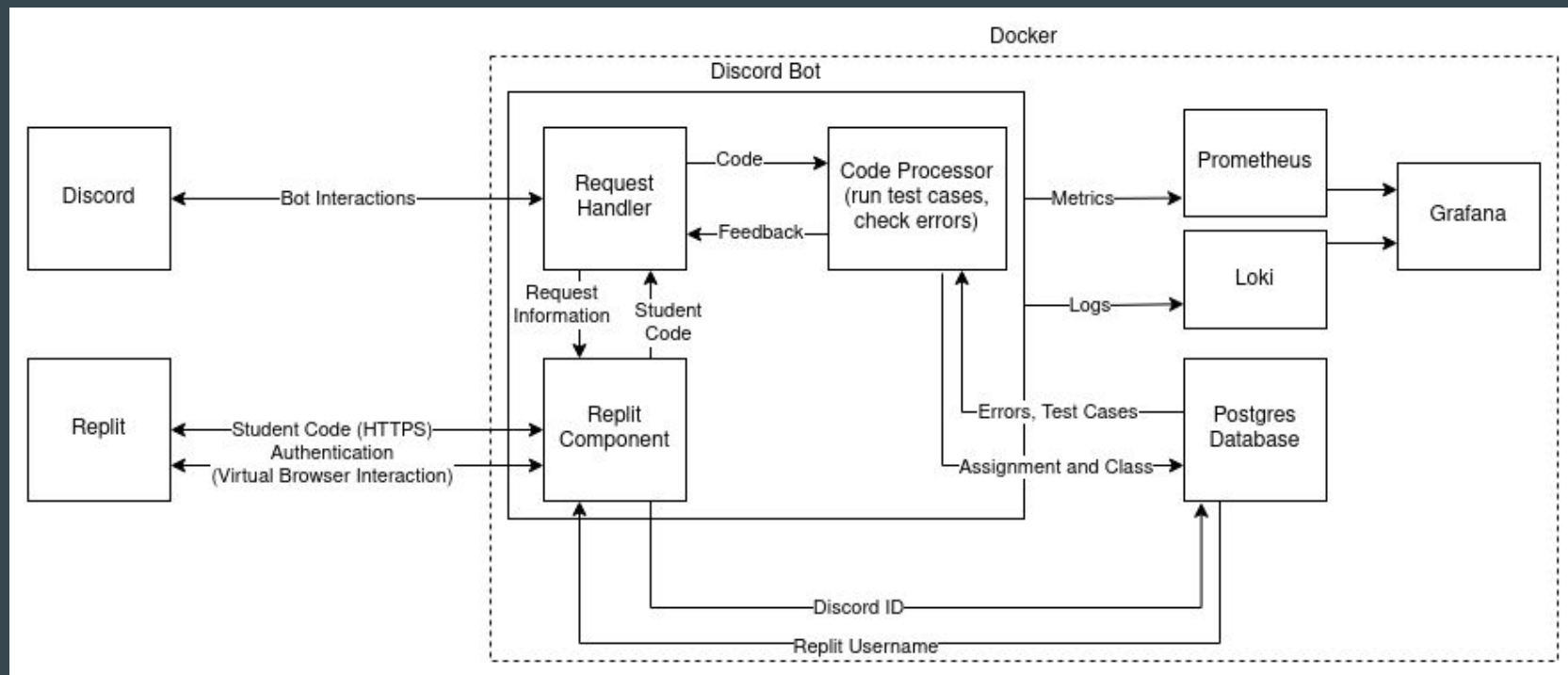
- Student interaction with the Discord bot
- User reaction buttons
- Use of Discord threads
- Ticketing system
- Accessing Replit



High Level System Design



Component Level Design



Functionality

- The bot tries to help in any way possible
- Open a ticket for the professor
- Debugging code
- User interactions all take place through Discord

Areas of Concern and Development

- Usefulness of the bot in answering student questions without professor help.
- Usefulness of the bot in helping with programming issues.
- Interacting with Replit.
- Engaging and easy user experience.

Questions?