CHATBOT

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A. The JM_C951_Career_Chatbot is designed to assist students with a computer science degree explore potential careers based on their skills and interests. The chatbot's functionality is based on guiding users through a series of questions related to different

specializations in computer science. The user will be able to find more info on their chosen path based on their preferences.

Functionalities include:

- The chatbot starts by greeting the user and asking if they are ready to explore career options. The tone is designed to be conversational, and the user can begin the process by typing the word “BEGIN”.
- The chatbot walks the user through selecting one of five career paths (Video Game Designer, Web Developer, Cybersecurity Specialist, Software Engineer, and Data Engineer). For each career, the chatbot will present a question related to the basic tasks of each job and provide a link to further information.
- At each question on the user’s interest, they can select the option given, continue to the next option using the “See More Career Paths” button, or return to the beginning of the chatbot by using the “Start Over” button.

These functions align with the scenario by providing an engaging and interactive experience for students to explore careers in computer science.

B. The chatbot will identify the following computer science job types based on user interaction:

- Video Game Designer (“Do you have a passion for video games and building digital worlds?”)
- Web Developer (“Are you interested in the process of creating professional and streamlined websites, perhaps?”)
- Cybersecurity Specialist (“Do you want to be responsible for securing networks and programs against threats?”)
- Software Engineer (“Do you want to build complex software that can serve a variety of tasks or solutions?”)

- Data Engineer (“Do you want to study data and use it to build relational databases?”)

C. Chatbot files are included as a zip file in the Task 1 submission.

D. The training cases were selected based on common career paths and the interests that are related to those careers. The goal was to guide students toward the most relevant career choice based on their answers to each question. Here are some examples of the training cases:

- Case 1: A student might have entered the computer science field after being inspired by video games. The chatbot would ask “Do you have a passion for video games and building digital worlds?”. If they select the button labeled “Sounds great! Please show me more info!”, they will be directed to a website with more details on that specific career.
- Case 2: While studying for a computer science degree, a student may have developed an interest in how web pages are designed and built. The student will continue through the questions until the chatbot asks “Are you interested in the process of creating professional and streamlined websites, perhaps?”. The student will select the “Sounds great! Please show me more info!” for this option instead and be taken to a website with information on web development.

AIML was used to build the specific questions and responses within the chatbot. Each job category corresponds to a specific question, which was created using AIML patterns and templates. Buttons are used in the AIML syntax for clear navigation between career paths.

For instance, in the two training cases listed above, I implemented the following code sections:

- Case 1:

  <!--VIDEO GAME DESIGNER-->

<category>

<pattern>CAREER ADVISOR</pattern>

<template>Do you have a passion for video games and building digital worlds?

<button>

<text>Sounds great! Please show me more info!</text>

<url>https://en.wikipedia.org/wiki/Video_game_design</url>

</button>

<button>

<text>See More Career Paths</text>

<postback>WEB DEVELOPER</postback>

</button>

<button>

<text>Start over</text>

<postback>BEGIN</postback>

</button>

</template>

</category>

This section of code will present the student with the question “Do you have a passion for video games and building digital worlds?” if that is their interest, they can select a button to provide more information on that career. Otherwise, they can select to move on to the next question or start the questionnaire from the beginning.

- Case 2:

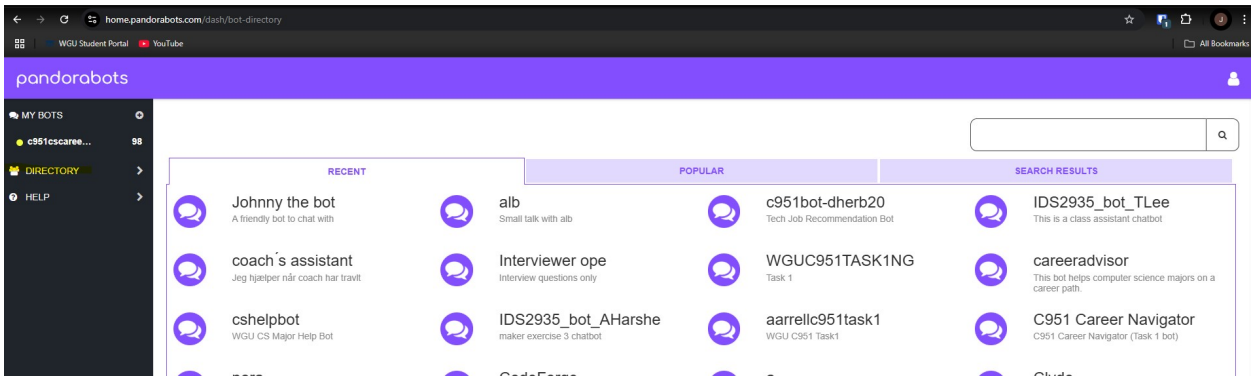
<!--WEB DEVELOPER-->

```
<category>
   <pattern>WEB DEVELOPER</pattern>
   <template>Are you interested in the process of creating
professional and streamlined websites, perhaps?
      <button>
         <text>Sounds great! Please show me more info!</text>
         <url>https://en.wikipedia.org/wiki/Web_developer</url>
      </button>
      <button>
         <text>See More Career Paths</text>
         <postback>CYBERSECURITY
SPECIALIST</postback>
      </button>
      <button>
         <text>Start over</text>
         <postback>BEGIN</postback>
      </button>
   </template>
</category>
```

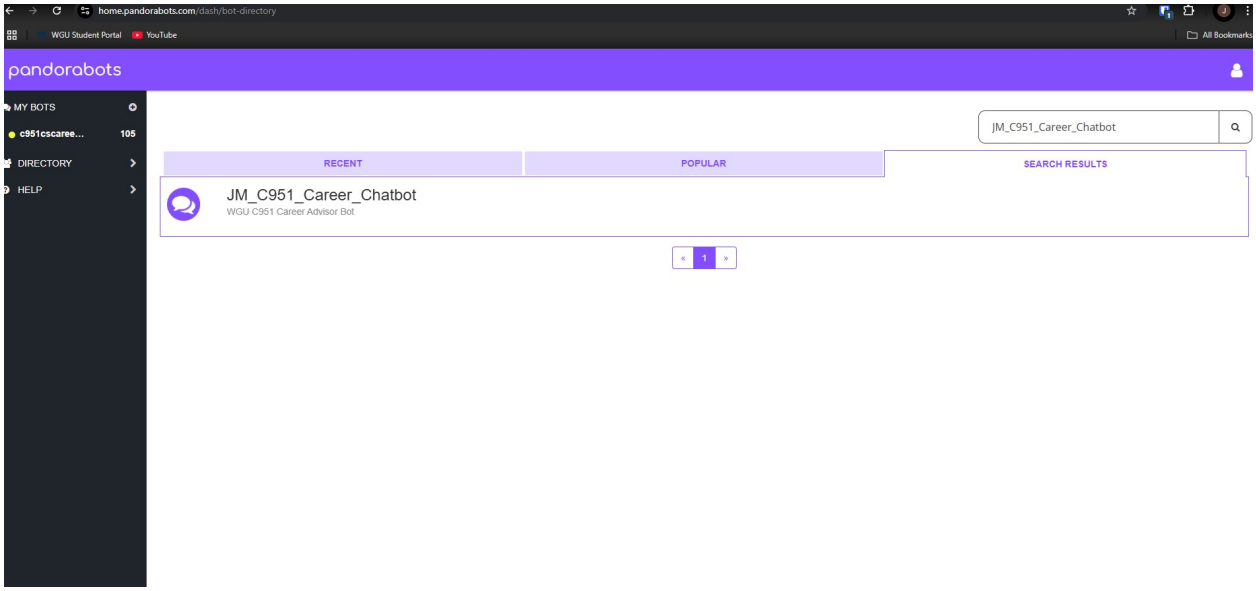
This section of code will present the student with the question “Are you interested in the process of creating professional and streamlined websites, perhaps?” and if that is their interest, they can select a button to provide more information on that career. Otherwise, they can select to move on to the next question or start the questionnaire from the beginning.

E. Installation Manual:

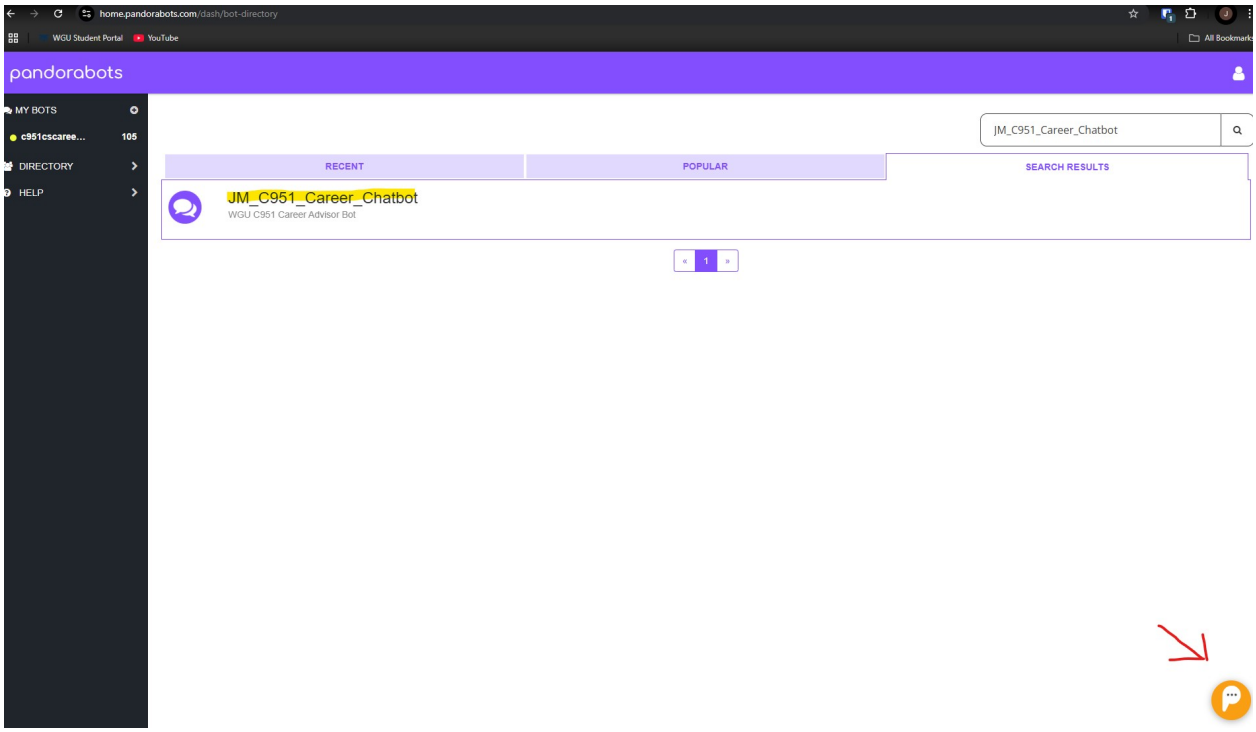
1. Log in to Pandaorabots.com at the following link: Pandorabots.com
2. Navigate to the dashboard and select the “Bot Directory” tab.



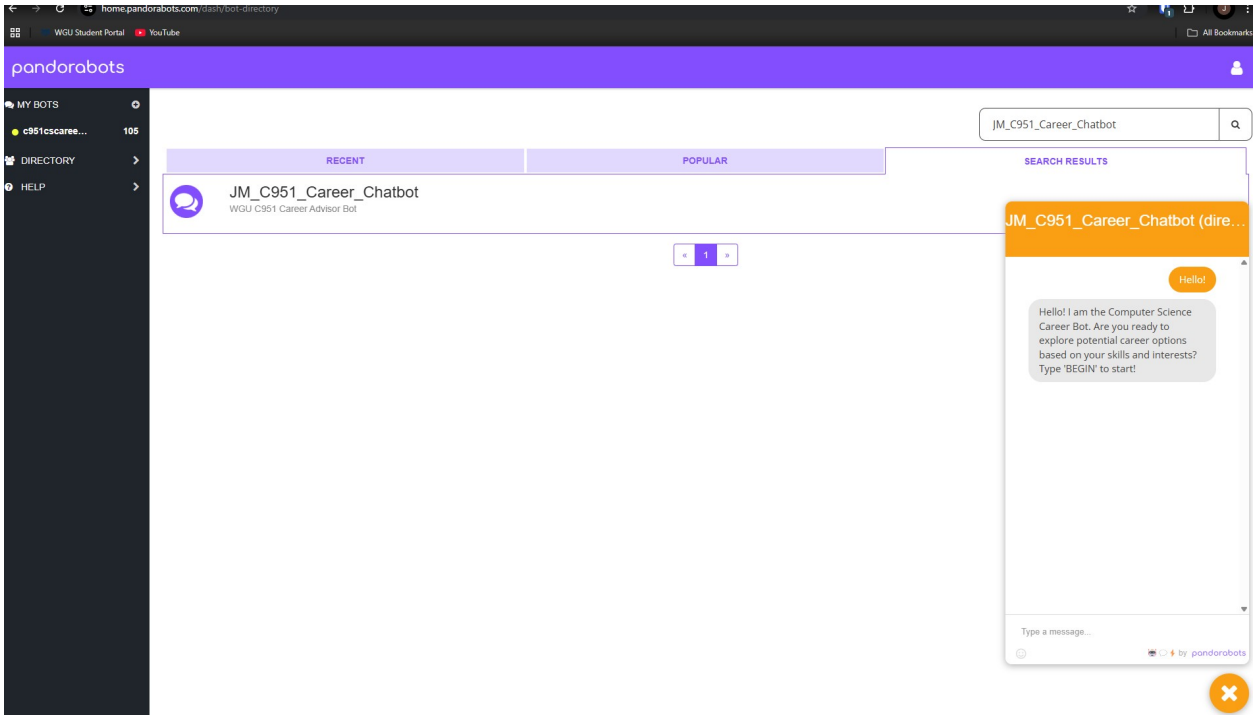
3. Search for the JM_C951_Career_Chatbot chatbot.



4. Click on the name of the chatbot and press the speech bubble button in the lower right corner to begin the interaction.



5. Type any greeting (e.g., “Hello!” or “Hi”), and the chatbot will greet you and instruct you to type the word “BEGIN” to start the questionnaire.



F. Strengths:

1. Scalability: Using the AIML syntax provides a quick and easy method to add more categories or job types as needed, whether they are within the computer science fields or beyond.
2. User-Friendly Interface: Pandorabots provides a smooth user experience and is easy to navigate for both the user and developer. This allows for quick creating, testing, and deploying of the chatbot.

Weaknesses:

1. No greeting options for the free tier: Because the free tier does not allow the chatbot to start with an immediate greeting, I was required to use a workaround to start the questionnaire. This was handled in such a way that no matter what the user types, the bot will greet them but could cause confusion if this were deployed on a larger scale.
2. Limited customization options: Pandorabots works incredibly well for simple deployments, but it does not support more advanced options (like complex logic or database access). This would make deployment difficult with any external code interactions outside of the AIML files.

G. Monitoring:

- Analytics: I would recommend using analytics tools (Pandorabots provides built-in tools, though third-party options exist) to track user engagement, common questions, and dropout points in the conversation flow.
- User Feedback: Regularly reviewing user interactions and feedback to identify areas where the chatbot's responses could be improved would be another viable monitoring option.

Maintenance:

- Regular Updates: The chatbot could be modified frequently to add new, emerging job types within the computer science industry.
- Bug Fixes: Any issues relating to user navigation or conversation flow would need to be addressed based on user feedback or error reports.

I. No sources were quoted, paraphrased, or summarized in the submission.