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C951 Introduction to Artificial Intelligence

October 16, 2023

Task 1

1. **Explain the functionalities of the chatbot and how they will meet the needs described in the scenario.**

The functionalities of the chatbot are to ascertain which of 5 computer science careers are best suited for users who use the chatbot. It will provide descriptions and information about each of the 5 types of careers, using a chatbot created with pandorabots. The chatbot will ask users questions and base the resulting career choice for the user on their responses / inputs. The pandorabot response will be tailored based on the user’s interests.

B.  **Identify five computing job types that your chatbot can recommend based on student interaction with the chatbot.**

1. Mobile App Developer
2. Web Developer
3. UI/UX Designer
4. Business Intelligence Analyst
5. Information Security Analyst

C.  **Provide the generated chatbot code files to support the five identified job types from part B.**

Attached / linked.

D.  **Explain how the chatbot training cases were selected and how you used artificial intelligence markup language (AIML) to enhance the functionality of the chatbot. Provide examples of the chatbot’s functionality that represent the selected cases at the end of the training process in support of your explanation.**

The chatbot asks two questions and recommends a career path based on the combination of responses. The first question is “Out of these topics, which would you consider to be most interesting?”, with 3 choices: Engineering, Design, and Security.

The second question is “What is your preferred programming language?”, with 5 choices: Javascript, Python, Swift, Kotlin, No Preference.

Based on these two answers, the chatbot recommends 1 of 5 responses. For example, if the user selects Engineering and Swift, they will be recommended to be a Mobile App Developer, as these are two interests of iOS developers.

Example recommendation as a result of these choices:

<category>

<pattern>MOBILEDEV</pattern>

<template>

Your recommended career path: <b>Mobile App Developer</b>

<br></br>

<br></br>

Mobile app developers specialize in creating applications for mobile devices, contributing to the expanding world of mobile technology. They utilize various programming languages and platforms to develop innovative and user-friendly mobile applications. This choice is recommended based on your interest in Engineering and your preferred programming language.

According to Glassdoor, the national average salary for a Mobile App Developer is $103,805 in the United States.

<br></br>

Source: <a href="https://www.glassdoor.com/Salaries/mobile-app-developer-salary-SRCH\_KO0,20.htm">Glassdoor</a>

</template>

</category>

The pattern is used not only in this combination, but in others as well, such as Engineering and Kotlin (Android developer).

**E.  Create an installation manual for the chatbot that includes the web link to access the live chatbot in the Pandorabot platform.**

1. Through a browser, log into pandorabots.com.

2. Go to https://home.pandorabots.com/dash/bot-directory

3. In the search bar, type: “jyd-c951-2023”

6. In the chatbot message window, type “hello” to start the chatbot

F.  **Assess the strengths and weaknesses of the chatbot development environment and explain how they supported or impeded the construction of the chatbot.**

Weaknesses:

* Coming from an objective oriented programming background, working with AIML and pandorabots had limitations in terms of effectively managing data. Not having a straightforward and easy way to store data values that users have inputted and save them as various data types was a big limitation on how pandorabots can be created.
* Because pandorabots is not based with LLM technologies, you have to pattern match regular text in order to understand user’s input. I had to use a specific starting message prompt (“hello”) to easily start the chatbot flow

Strengths:

* Using AIML’s postbacks allowed me to create a chatbot that uses multiple user inputs to guide them towards a specific page/response. I was able to know exactly what the user chose (what buttons they selected) and provide an appropriate response based on the user’s choice flow.
* Pandorabots also allows easy testing of the chatbot implementation and no compilation was necessary. I was able to see instantly if my implementation was performing as expected.
* HTML is supported in AIML so I was able to nicely format the final responses that inform the user what career would be appropriate for them.

**G.  Explain how the chatbot will be monitored and maintained to improve the final user experience.**

The chatbot will be monitored for user input. The data input will be collected as data to see if there are any choices that are not being selected at all. We can improve our selections and available career recommendation set based on this historical data.

We will also monitor for any user reported issues or bugs and fix those as needed, which will improve the user experience.

We can provide a help link that would allow users to send user feedback with regards to anything they would want to be improved in the application, such as more recommendations or more details in the final recommendations.

**H.  Provide a Panopto video recording that includes a verbal summary of the capabilities of your chatbot and an example of human interaction with the chatbot in which it provides meaningful career advice.**

Attached / Linked.

**I.  Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.**

<https://www.glassdoor.com/Salaries/ux-designer-salary-SRCH_KO0,11.htm>

<https://www.glassdoor.com/Salaries/web-developer-salary-SRCH_KO0,13.htm>

<https://www.glassdoor.com/Salaries/mobile-app-developer-salary-SRCH_KO0,20.htm>

<https://www.glassdoor.com/Salaries/backend-developer-salary-SRCH_KO0,17.htm>

https://www.glassdoor.com/Salaries/information-security-analyst-salary-SRCH\_KO0,28.htm