NIP2 — NIP2 TASK 1: CHATBOT

INTRODUCTION TO ARTIFICIAL INTELLIGENCE — C951
PRFA — NIP2

COMPETENCIES

4036.2.1 : Reasoning, Knowledge Representation, Uncertainty, and Intelligence
The graduate analyzes the relationships and rules pertaining to intelligence within systems.

4036.2.2 : Search Strategies for Optimization
The graduate distinguishes among search strategies to fit specific data-oriented problems.

4036.2.3 : Agents
The graduate implements basic intelligent agent technology in order to automate services.

INTRODUCTION

This course has introduced you to a variety of artificial intelligence (AI) concepts, including chatbots. Chatbots are also known as conversational agents, talkbots, chatterbots, bots, instant message (IM) bots, interactive agents, or artificial conversational entities. Chatbots converse with humans using auditory or textual methods. These chatbots are often designed to convincingly simulate how a human would behave as a conversational partner. Chatbots alleviate the call volume of call centers by providing support to customers, provide assistance to shoppers by recommending products, help locate the best place to buy your favorite dish or order food, talk with you about a specific topic, or help you acquire information.

In this task, you will use the Pandorabot environment to create a conversational agent for the given scenario. Your chatbot will interact with students who are about to graduate. You will document the development of the chatbot and investigate the best calibration approaches and AI optimization methods that support the chatbot in having the required functionalities in the most efficient way.

SCENARIO

You are a career advisor working for a university that offers many degrees, including a degree in computer science. You know that there is a vast range of computing jobs and that students who are about to graduate are generally aware of their disciplinary preferences and personal strengths. The enrollment of computer science students at your university has been increasing and you can no longer meet with each of them individually to give career guidance. During a meeting of career advisors, your manager suggests that you develop a chatbot that may reduce your workload and interact with students to help them identify jobs in computing fields for which they are qualified.

You have been asked to identify five job types that require an undergraduate degree in computer science and to construct a chatbot in the Pandorabot environment. The chatbot will interact with individual students, help them identify their strengths and preferences, and help them decide which career options to consider.

REQUIREMENTS

Your submission must be your original work. No more than a combined total of 30% of the submission and no more than a 10% match to any one individual source can be directly quoted or closely paraphrased from sources, even if cited correctly. The similarity report that is provided when you submit your task can be used as a guide.

You must use the rubric to direct the creation of your submission because it provides detailed criteria that will be used to evaluate your work. Each requirement below may be evaluated by more than one rubric aspect. The rubric aspect titles may contain hyperlinks to relevant portions of the course.

*Tasks may **not** be submitted as cloud links, such as links to Google Docs, Google Slides, OneDrive, etc., unless specified in the task requirements. All other submissions must be file types that are uploaded and submitted as attachments (e.g., .docx, .pdf, .ppt).*

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

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

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

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.

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

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

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

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.

Note: For instructions on how to access and use Panopto, use the "Panopto How-To Videos" web link provided below. To access Panopto's website, navigate to the web link titled "Panopto Access", and then choose to log in using the "WGU" option. If prompted, log in using your WGU student portal credentials, and then it will forward you to Panopto's website.

To submit your recording, upload it to the Panopto drop box titled "Intro to Artificial Intelligence NIP2 | C951 (student creators) [assignments]." Once the recording has been uploaded and processed in

Panopto's system, retrieve the URL of the recording from Panopto and copy and paste it into the Links option. Upload the remaining task requirements using the Attachments option.

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

J. Demonstrate professional communication in the content and presentation of your submission.

File Restrictions

File name may contain only letters, numbers, spaces, and these symbols: ! - _ . * ' ( )
File size limit: 200 MB
File types allowed: doc, docx, rtf, xls, xlsx, ppt, pptx, odt, pdf, csv, txt, qt, mov, mpg, avi, mp3, wav, mp4, wma, flv, asf, mpeg, wmv, m4v, svg, tif, tiff, jpeg, jpg, gif, png, zip, rar, tar, 7z

RUBRIC

A:EXPLANATION OF CHATBOT FUNCTIONALITIES

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission explaining the chatbot's functionalities is not provided.	The submission explains the functionalities of the chatbot but not how the chatbot meets the needs from the scenario. Or the submission is inaccurate or incomplete.	The submission accurately and completely explains *both* the functionalities of the chatbot and how the chatbot meets the needs from the scenario.

B:COMPUTING JOB TYPES

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission identifying 5 computing job types recommended by the chatbot is not provided.	The submission identifies 5 computing job types recommended by the chatbot, but the 1 or more of the jobs are not based on student interaction with the chatbot.	The submission identifies 5 computing job types that are recommended based on student interaction with the chatbot.

C:CHATBOT CODE FILES

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission providing generated chatbot code files to support the identified job types from part B is not provided.	The submission provides generated chatbot code files to support the identified job types	The submission provides generated chatbot code files that are accurate and support *all* 5 identified job types from part B.

	from part B, but 1 or more of the 5 job types are missing, or the code files contain 1 or more inaccuracies.	

D:CHATBOT TRAINING CASES

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission explaining how the chatbot training cases were selected is not provided.	The submission explains how the chatbot training cases were selected, but it does not explain how AIML was used to enhance the bot's functionality. Or the submission does not provide examples of the chatbot's functionality, or the examples do not represent the selected cases at the end of the training process, or the examples do not support the explanation.	The submission explains how the chatbot training cases were selected and how AIML was used to enhance the bot's functionality. The submission includes examples of the chatbot's functionality that represent the selected cases at the end of the training process and support the explanation.

E:INSTALLATION MANUAL

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission with an installation manual for the chatbot is not provided.	The submission provides the created installation manual, but the web link to access the live chatbot in the Panodorabot platform is not included.	The submission provides the created installation manual for the chatbot and includes a web link to access the live chatbot in the Panodorabot platform.

F:CHATBOT ENVIRONMENT

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission assessing the strengths and weaknesses of the chatbot development environment is not provided.	The submission assesses the strengths and weaknesses of the chatbot development environment, but there is no explanation of how the strengths or weaknesses supported or impeded chatbot construction. Or	The submission assesses the strengths and weaknesses of the chatbot development environment and how the strengths and weaknesses supported or impeded chatbot construction. The explanation is accurate and logical.

	the explanation is inaccurate or illogical.	

G:MONITORING AND MAINTAINING

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission explaining how the chatbot will be monitored and maintained is not provided.	The submission explains how the chatbot will be monitored and maintained, but it does not explain how monitoring or maintaining the chatbot will improve the final user experience. Or the explanation is inaccurate or illogical.	The submission accurately and logically explains how the chatbot will be monitored and maintained and how *both* will improve the final user experience.

H:PANOPTO RECORDING

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A Panopto video recording is not submitted.	The Panopto video recording submitted is missing a verbal summary of the capabilities of the bot or an example of human interaction with the chatbot in which the chatbot provides meaningful career advice.	The Panopto video recording submitted includes *both* a verbal summary of the capabilities of the chatbot and an example of human interaction with the chatbot in which the chatbot provides meaningful career advice.

I:SOURCES

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
The submission does not include both in-text citations and a reference list for sources that are quoted, paraphrased, or summarized.	The submission includes in-text citations for sources that are quoted, paraphrased, or summarized and a reference list; however, the citations or reference list is incomplete or inaccurate.	The submission includes in-text citations for sources that are properly quoted, paraphrased, or summarized and a reference list that accurately identifies the author, date, title, and source location as available.

J:PROFESSIONAL COMMUNICATION

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
Content is unstructured, is disjointed, or contains pervasive	Content is poorly organized, is difficult to follow, or contains er-	Content reflects attention to detail, is organized, and focuses on

errors in mechanics, usage, or grammar. Vocabulary or tone is unprofessional or distracts from the topic.	rors in mechanics, usage, or grammar that cause confusion. Terminology is misused or ineffective.	the main ideas as prescribed in the task or chosen by the candidate. Terminology is pertinent, is used correctly, and effectively conveys the intended meaning. Mechanics, usage, and grammar promote accurate interpretation and understanding.

WEB LINKS

About Pandorabots

AIML Basics

AIML Fundamentals

AIML Libraries

AIML References

Pandorabot Playground

Pandorabot Tutorial

Panopto Access
Sign in using the "WGU" option. If prompted, log in with your WGU student portal credentials, which should forward you to Panopto's website. If you have any problems accessing Panopto, please contact Assessment Services at assessmentservices@wgu.edu. It may take up to two business days to receive your WGU Panopto recording permissions once you have begun the course.

Panopto How-To Videos

Panopto Drop Box for C951