**Introduction to Artificial Intelligence – C951**

**Task 1 Overview**

**Course Overview**

Introduction to Artificial Intelligence explores the foundational principles and practices of artificial intelligence (AI), machine learning, and robotics. The course prepares students to analyze relationships, build agents, and create models relevant to AI problems. The prerequisites for this course are Introduction to Probability and Statistics as well as Data Structures and Algorithms II.

**Objective Assessment Task 1 Overview**

**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 (also known as conversational agents, talkbots, chatterbots, bots, 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, providing assistance while shopping by recommending products, helping locate the best place to buy your favorite dish or order food, talking with you on a specific topic, or by helping you acquire information.

In this task, you will use the Pandorabot environment to create a conversational agent. This chatbot will be interacting with an undergraduate student who is nearing the completion of their degree plan. The student your bot will interact with may be starting to think about directing their career path in a specific direction or may be preparing for an interview. 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 will 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 construct a chatbot in the Pandorabot environment that 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. An originality report is provided when you submit your task that 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.*

***Part One***

A.  Explain the functionalities of the chatbot and how they will address the needs of the career advisor as described in the scenario.

B.  Summarize other outside works or articles describing bot implementation that represent each of the key elements of the bot you created. These other works must have been published in the past **5** years.

C.  Identify **5** or more computing job types that your created bot can recommend based on the interaction with the bot. Provide the generated chatbot code files to support the identified job types.

D.  Explain how the chatbot training cases were selected and how the AIML or other programming languages were used to enhance the functionality of the bot. Provide examples of the chatbot functionality (that represent the selected case and languages) at the end of the training process in support of your explanation.

E.  Explain how AI optimization methods were used to optimize the chatbot by providing examples that represent the optimization methods used at the end of the optimization process.

F.  Create an installation manual for the chatbot.

**Part Two** 

G.  Explain how you measured the effectiveness of the bot and how the bot will be monitored and maintained to improve the final user experience.

H.  Describe the challenges faced during the development process and summarize their resolution.

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

J.  Provide a Panopto video recording that includes a verbal summary of the capabilities of your bot and an example of human interaction with the bot where 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.*

*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.To submit your recording, upload it to the Panopto drop box titled “INTRODUCTION TO ARTIFICIAL INTELLIGENCE – NIP1 Task 1 | C951.” 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.*

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

L.  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, 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