IT2023 ASSIGNMENT 02 (Due Date: Oct 20, 2023)

Instructions: You only have to answer all questions. Your answers can be in either Chinese or English. The following points should be noted.

- If you use a word processing software to edit your answer, please make sure that the file to be submitted is either in WORD or PDF format.

- You need to submit the answer file before the due date to the Gmail account johnsum.nchu@gmail.com.

- Email heading must be conformed to IT2023_Assignment02_studentID.

- File name must be conformed to IT2023_Assignment02_studentID.

- It is a bonus assignment. If you are too busy to complete the assignment, you can just skip it.

The assessment of this course is solely depended on your work in the course project including your written report and your oral presentation. The scores obtained from the assignments are bounce which are added up on your project score.

Question 1

Imagine that you are now standing in front of two doors, say X and Y. One of them leads you to heaven and the other leads you to hell, see Figure 1. In each door, there is a doorman. Let the doorman standing in front of the door X is A and the doorman standing in front of the door Y is B. For the doormen, it is known that one of them always lies and the other always tells the truth. Besides, the doormen only answer 'Yes' or 'No' to you.

Now, you can ask two questions. Which of the following combinations of questions will help you make the right decision on the door to heaven?
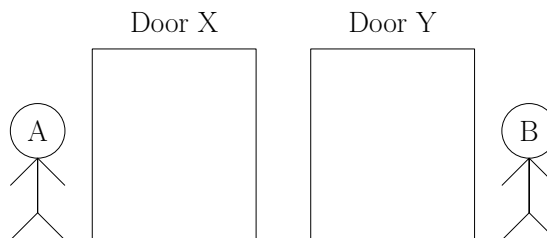

Figure 1: Two doors and two doormen.

(i) The first question is to ask Doorman A, '1 + 1 = 2'. The second question is to ask Doorman B, 'Door X is the door to heaven'.

(ii) The first question is to ask Doorman A, 'You are a liar'. The second question is to ask Doorman B, 'Door X is the door to heaven'.

(iii) The first question is to ask Doorman B, '1 + 1 = 2'. The second question is to ask Doorman A, 'Door Y is the door to heaven'.

Answer:

(a) (i) and (ii).

(b) (ii) and (iii).

(c) (i) and (iii).

(d) (i), (ii) and (iii).

(e) None of the above.

Question 2

Imagine that you are now standing in front of two doors, say X and Y. One of them leads you to heaven and the other leads you to hell, see Figure 1. In each door, there is a doorman. Let the doorman standing in front of the door X is A and the doorman standing in front of the door Y is B. For the doormen, it is known that one of them always lies and the other always tells the truth. Besides, the doormen only answer 'Yes' or 'No' to you.

Now, you can only ask one doorman one question. If you have asked the Doorman A the following question: *If I ask Doorman B, 'Door Y will lead me to heaven', Doorman B will say 'YES'..* Which of the following decision(s) you should made so that you can walk to the door to heaven?

 (i) If the Doorman A says 'YES', you walk to the Door X.

 (ii) If the Doorman A says 'YES', you walk to the Door Y.

 (iii) If the Doorman A says 'NO', you walk to the Door X.

 (iv) If the Doorman A says 'NO', you walk to the Door Y.

Answer:

 (a) (i) only.

 (b) (ii) only.

 (c) (iii) only.

 (d) (iv) only.

 (e) (i) or (iv) only.

 (f) (ii) or (iii) only.

Question 3

ChatGPT and Google Bard are chatbots for generating a sequence of text in response to a user question. What you need to do is to access either one of them and check if it has any bias? [Hint: Carefully design some questions and then ask them to the chatbot. Based on the responses, check if any response has bias.]

In your answer, you need to put on the question asked together with the response generated by the chatbot.

Question 4

With reference to the document *Introduction to Intelligent Technology (20230923 version)* Figure 6 the budget request process, which step(s) can be automated and in which step(s) intelligent technology can be applied?