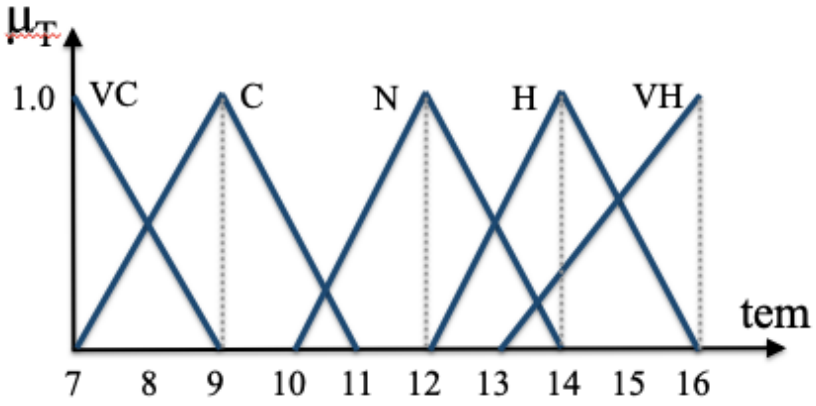
COM2536 Fuzzy Logic – Project

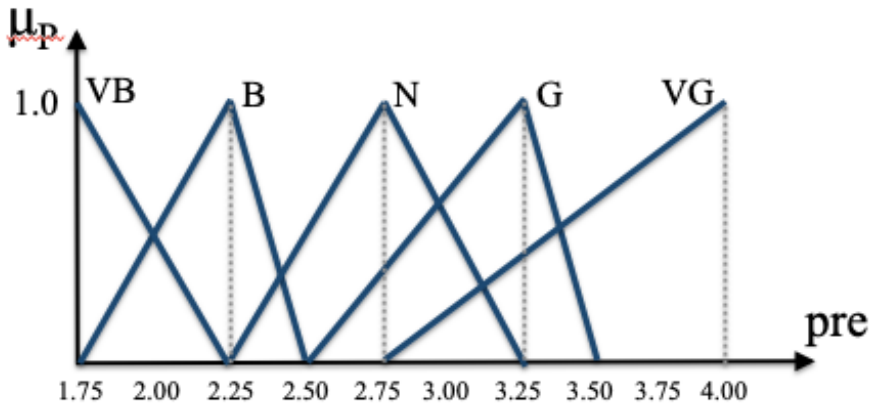
In this project, you are required to develop a fuzzy logic system that determines the percentage of carbon dioxide in a specific Fizzy drink (seven-up) depending on the given temperature and pressure values.

The paremeters in the system will be utilized through the membership functions given as follows:

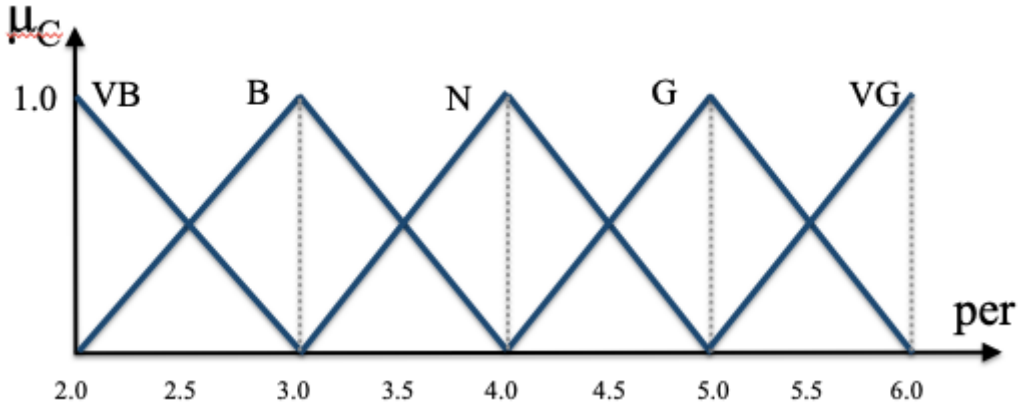
1. Temperature:



2. Pressure:



3. Percentage of Carbon Dioxide:



The rules will be given with the following matrix:

Rule Matrix	Verycold	Cold	Normal	Hot	Veryhot
Verybad	Normal	Bad	Bad	Bad	Verybad
Bad	Normal	Good	Normal	Bad	Bad
Normal	Good	Good	Normal	Normal	Normal
Good	Verygood	Good	Good	Normal	Normal
Verygood	Verygood	Verygood	Verygood	Good	Good

Project Requirements:

1. You are only required to prepare a report for this project. The report must consist of **at least 8 pages**. It composes of 4 sections:

- Abstract (at least half page),
- Introduction (at least 3 pages), that explains the foundations of the fuzzy logic system and its stages,
- Construction (at least 3 pages), that explains how the stages of the fuzzy logic system have been applied when developing your program,
- Implementation (at most one page), that includes the outputs generated by your program for at least three different input sets.

2. Your program must use the **Mamdani inference** method and the **center of area defuzzification** method to generate the results.

3. You can develop the program in any of the programming languages.

4. Due date for the project is: **May 15 till 11.59 pm.** You must **submit your report together with the source codes** (must be in .pdf file) before the deadline.