Fuzzy Logic

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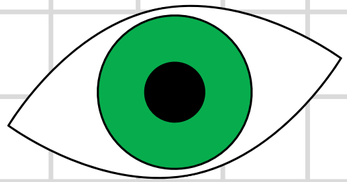
START

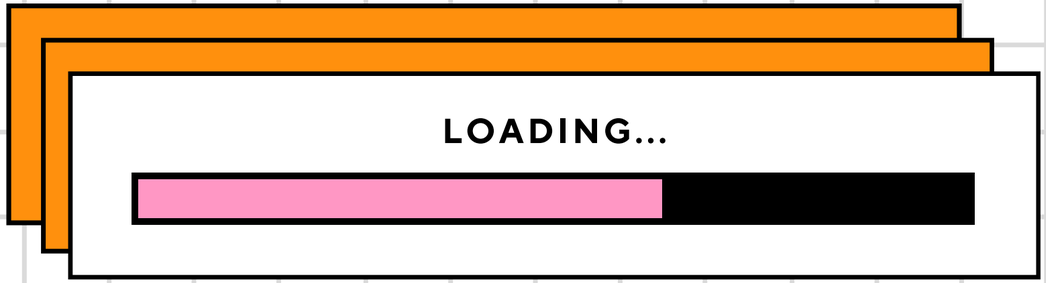
Introduction



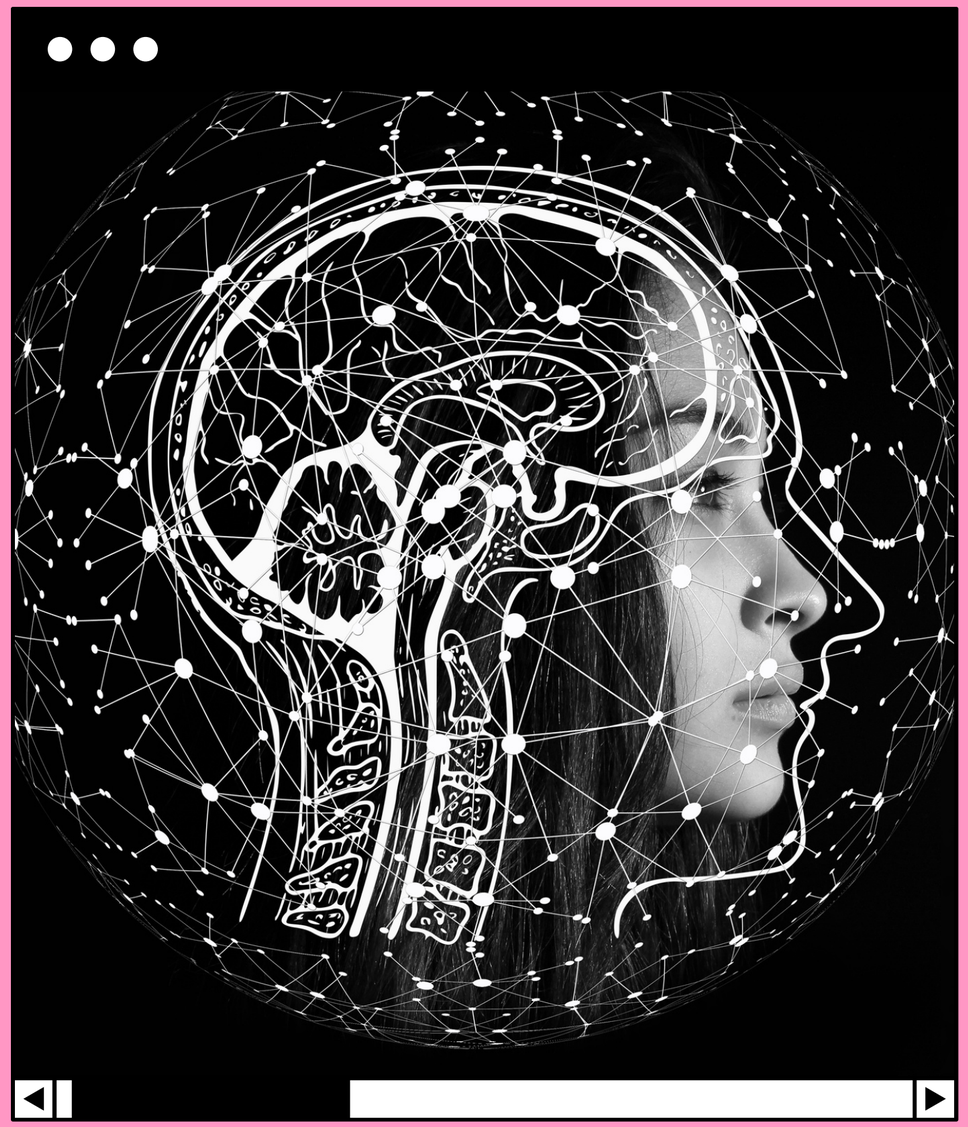
Architecture

Overview

Why Fuzzy Logic ?



Application



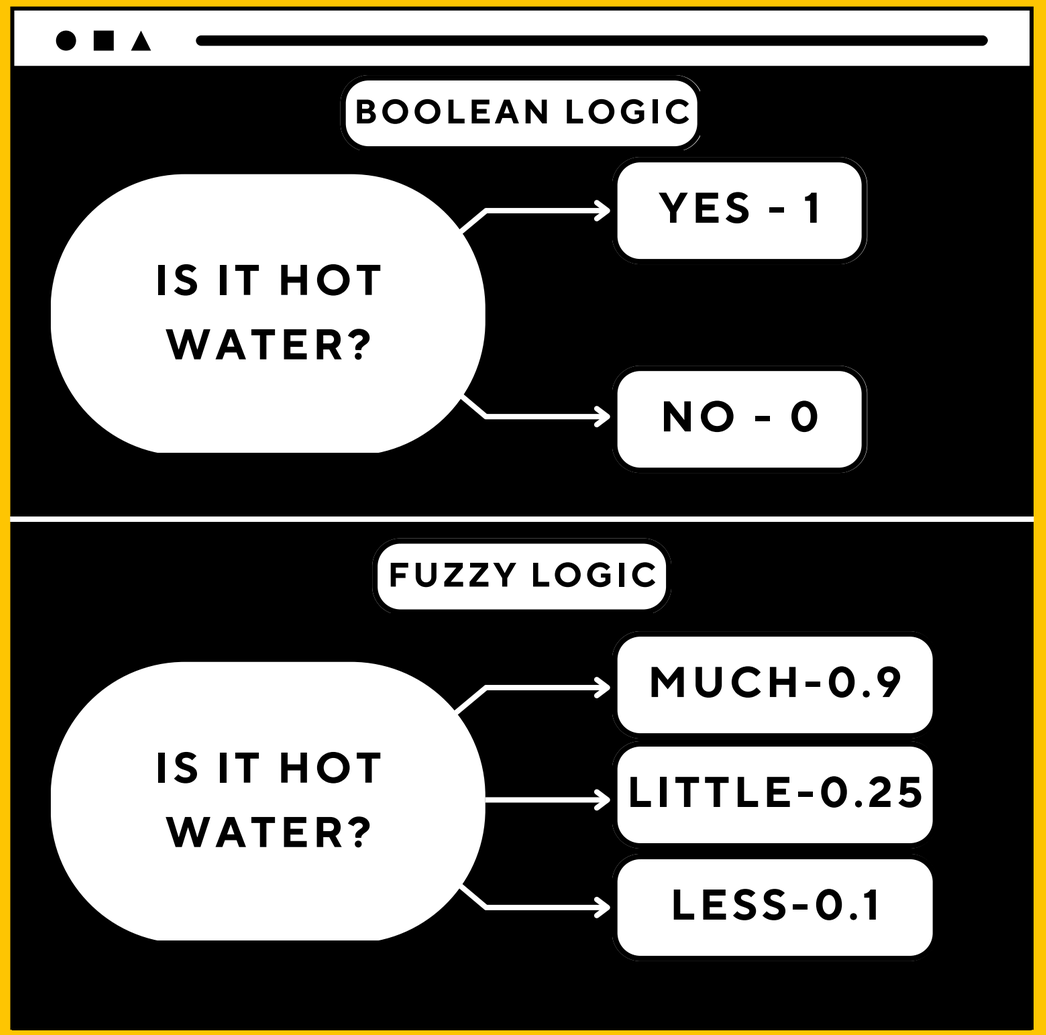
Introduction

- Fuzzy Logic (FL) is a method of reasoning that resembles human reasoning.
- This approach is similar to how humans perform decision making.
- It involves all intermediate possibilities between YES and NO.
- This concept is flexible and we can easily understand and implement it.

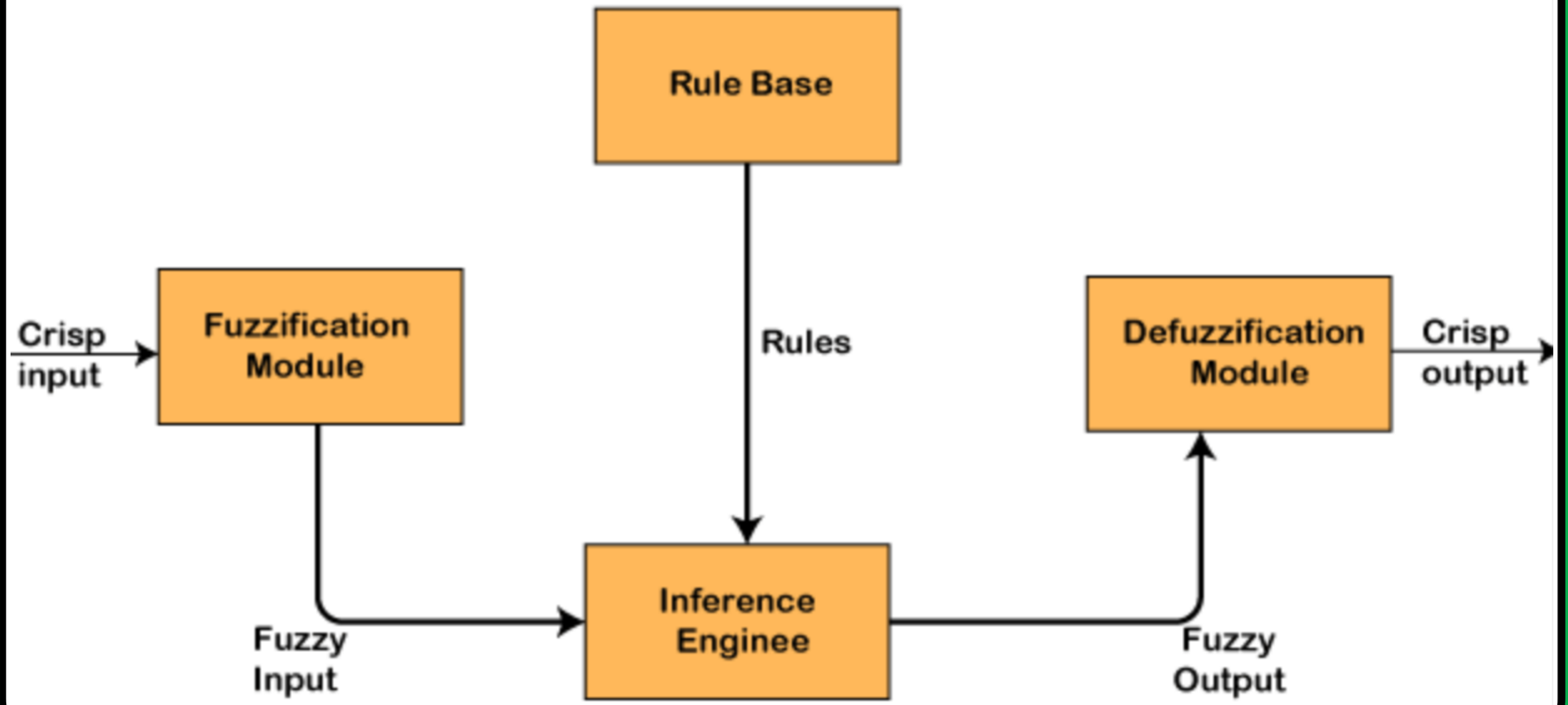
Example

- In Boolean Logic, only two possibilities exits (0,1).
  where, 1 denotes the absolute truth value
  0 denotes the absolute false value

- But in Fuzzy Logic, multiple possibilities exits.
  (lies in between 0 and 1)



Architecture



Components

1. Rule Base
2. Fuzzification
3. Inference Engine
4. Defuzzification

	Pros	Cons
1	can work with any type of inputs	maynot be appropriate for some problems
2	easy and understandable	dependent on human expertise and knowledge
3	little memory is required	**intractable** with increase in no. of rules
4	less hardware requirements	doesnot have a formal mathematical proof

intractable : difficult to manage

Applications

- air pollution monitoring
- decision-making support systems in the large company business.
- in chemical industry for controlling the pH, drying, chemical distillation process
- in natural language processing to handle ambiguity and uncertainty in language
- weather forecasting
- automotive system for speed control, traffic control, gps

Reference

https://www.geeksforgeeks.org/fuzzy-logic-introduction/

https://www.javatpoint.com/fuzzy-logic

https://www.investopedia.com/terms/f/fuzzy-logic.asp

Thank You !

Have a great day.