FUZZY LOGIC

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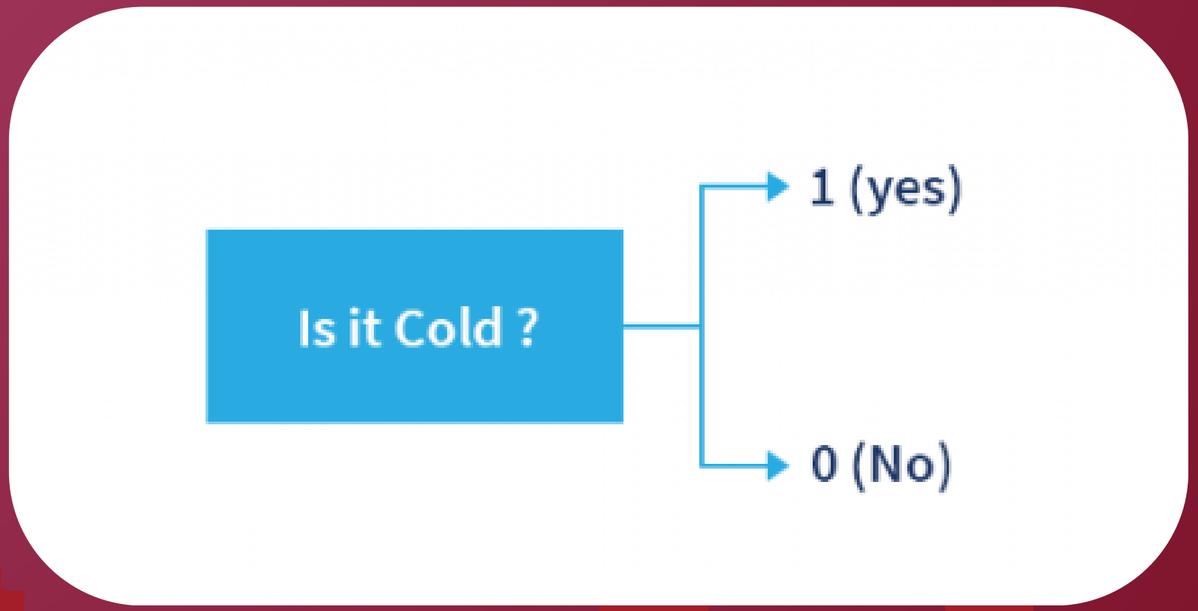
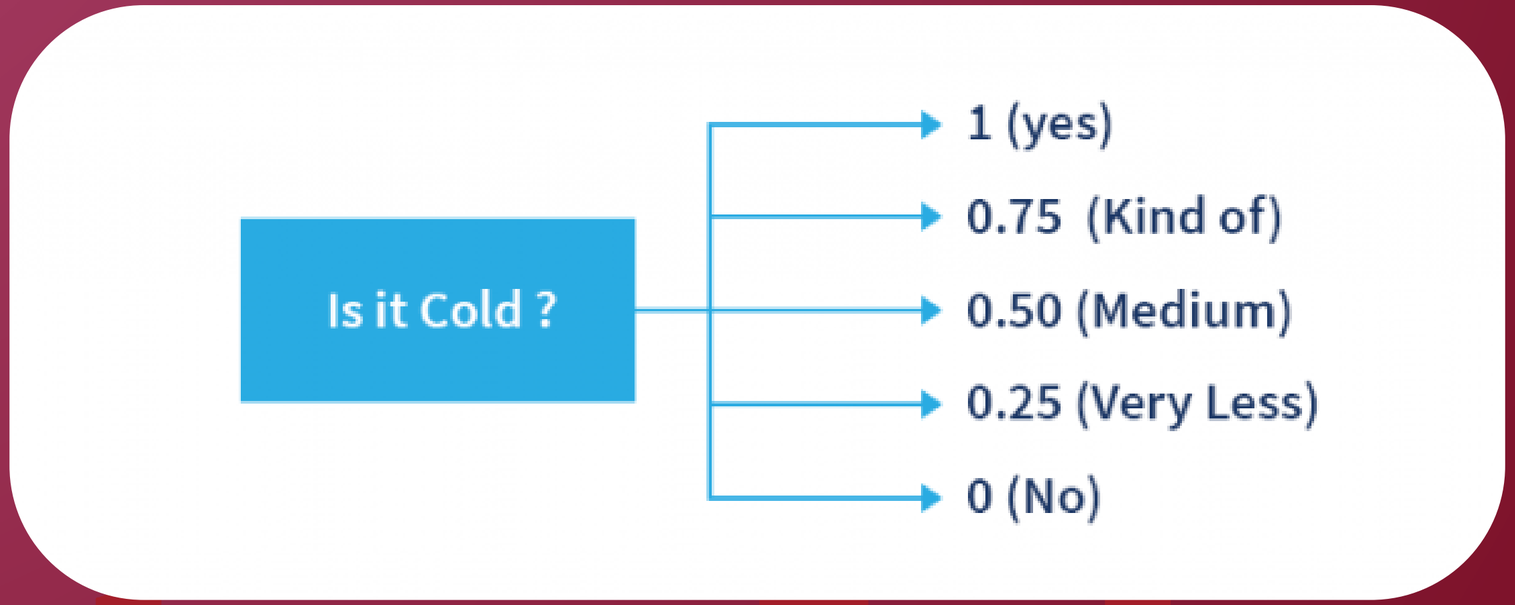
Boolean system logic

- Which representes the system through Crisp value.
- crisp values - 1 True or 0 False.



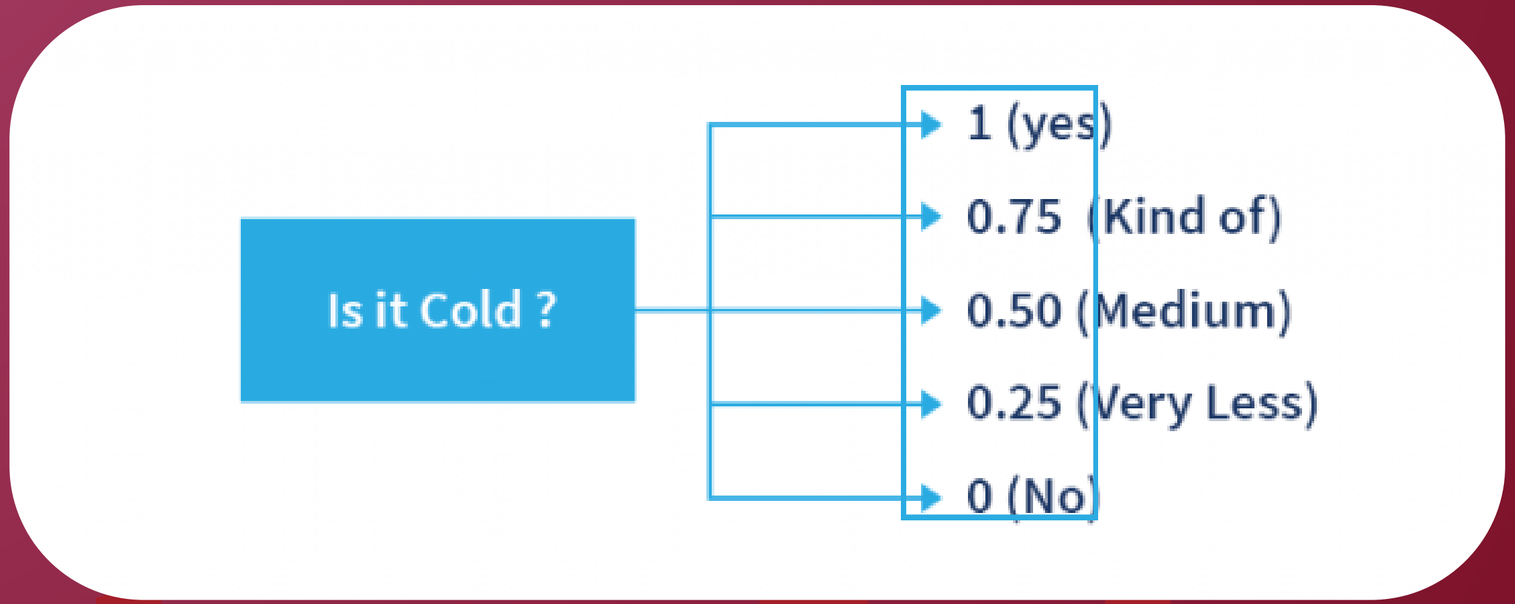
Fizzy logic

- Provides value for unpredictable situation.
- Membership values : range[0 to 1].



Member ship function

- function which represents the characteristics of fuzziness
- Membership values : range[0 to 1].



Classical set

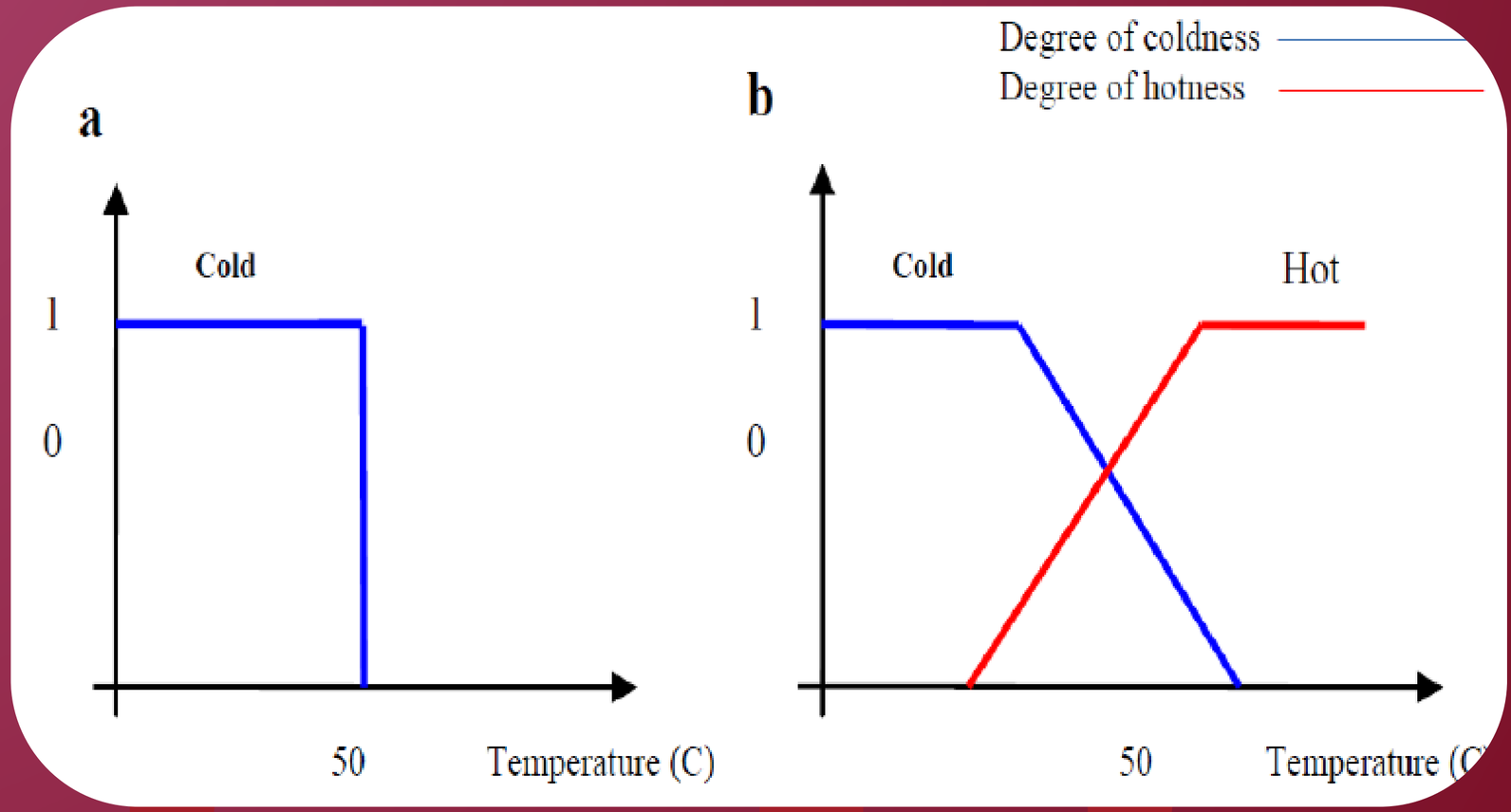
- Collection of distinct objects. It has crisp values.
- Either 0 or 1.
- Each individual entity in a set is called a member of the set
- classical set defined in such a way that it has two groups : member and non-member.
- Thus there is no partial members.

$$\mu A(x) = \begin{cases} 1 \text{ if } x \in A \\ 0 \text{ if } x \notin A \end{cases}$$

Fuzzy sets

- Fuzzy sets can be considered as an extension of classical set.
- fuzzy sets allow partial membership.
- which means we can have decimal values ranging from 0 to 1.

Classical set graph vs Fuzzy sets graph



Fuzzy logic graph types