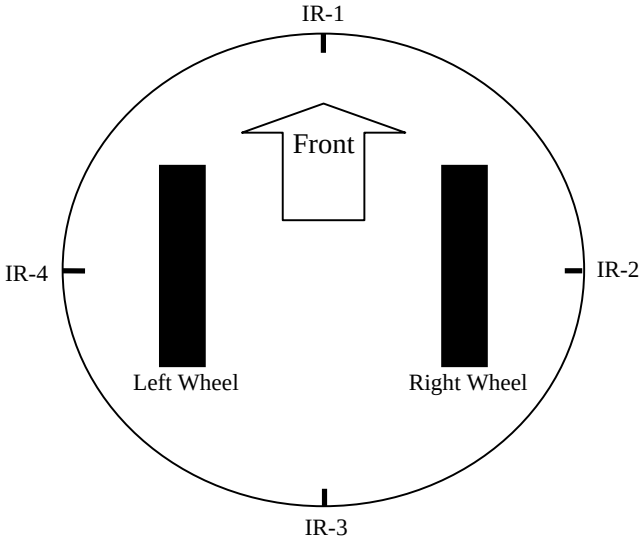
Fuzzy Control Exercise

Let's design a fuzzy control for a very simple robot.

- The robot has only 4 infrared sensors locating around the robot. Each sensor reads the distance to the nearest object in its direction. The possible value is 0 … 255.
- The robot has two wheels. We can set speed of each wheel from -100 … 0 … 100. Positive values mean moving forward, and negative values mean moving backward.



Membership Functions

IR-1

IR-2

IR-3

IR-4

Rules

Inference

What will be happen to your robot if the robot's sensors have values …..

(IR-1, IR-2, IR-3, IR-4) = (25, 50, 200, 180)

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(IR-1, IR-2, IR-3, IR-4) = (200, 10, 20, 80)

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(IR-1, IR-2, IR-3, IR-4) = (180, 10, 150, 10)

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(IR-1, IR-2, IR-3, IR-4) = (5, 5, 120, 5)

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