=> goal:

- traverse the arena

- get to the end

- dont hit walls as much as possible

- best time to win expo

=> components:

- arduino mega 2560 R3

- breadboard mini 400

- ultrasonic HC-SR04

- ir sensors

- wheels 30-mm (d)

- battery 12v

- h-bridge

- dc motor

- wires

=> layout: [flat]

=> BACK:

- 2 wheels

- ir sensor

- battery

=> MIDDLE:

- chasis (material to be decided)

- components inside

=> FRONT:

- ultrasonic sensors

=> spin method:

- wheels move in opposite direction when turning CW/CCW

- wheels move in same direction when moving forward

=> algorithm:

=> arena is represented as intersections and paths

-> intersection:

- 4 paths (up, down, left, right, if exist)

- flags (fully explored, available paths, etc...)

- age

-> path:

- 2 intersections

- flags (explored/not, vertical/horizontal, dead ends, etc..)

- length

- width

- bias

=> at intersection:

- take the first unexplored path based on the bias variable

- move along unexplored path until new intersection is reached or dead end found

=> if dead end reached:

- find the nearest smallest age intersection with unexplored paths

- pathfind to the nearest intersection (depth-first search?)

- when intersection reached, take the next unexplored path

=> meetups:

- saturdays [01:00 - \*\*:\*\*]

- mondays [11:00 - 02:30]

=> dates:

- formative: [16/01/25]

- final: [23/01/25]

- expo: [23/01/25]