

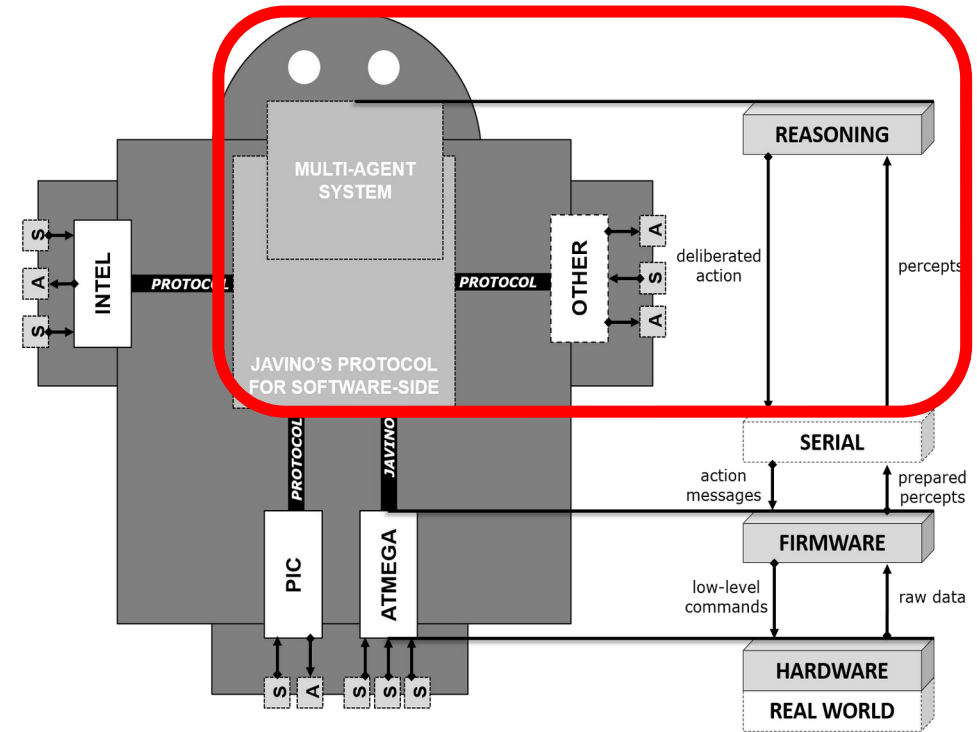
Introduction to Distributed and Embedded Multi-agent Systems

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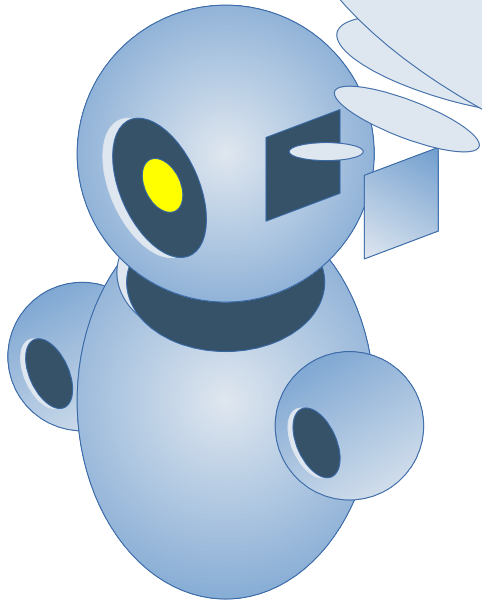
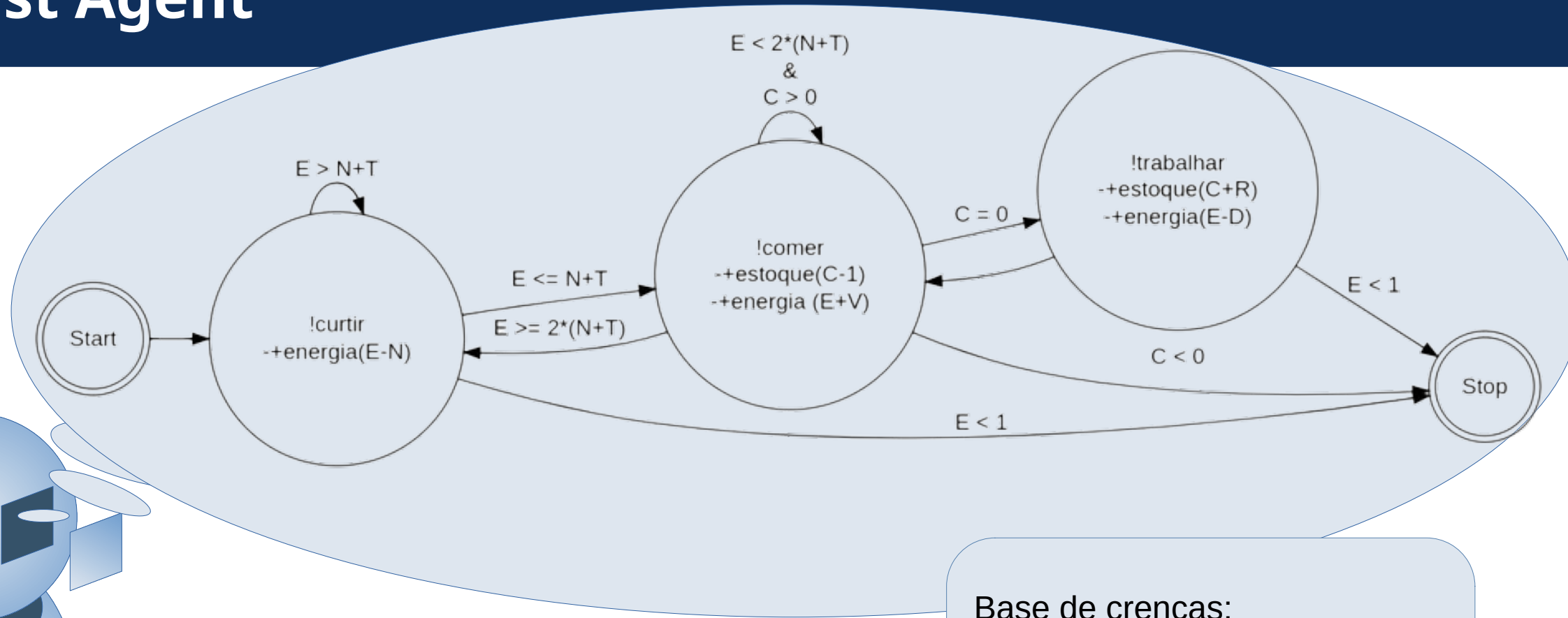
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Programando um SingleAgent System



My First Agent



Base de crenças:

estoque(C)	energia(E)
recompensa(R)	jornada(D)
noitada(N)	refeicao(V)

My First Agent - code

<https://github.com/chon-group/distributedAndEmbeddedAI/raw/main/course/06-MyFirstAgent/giacomoAgent.zip>



```
1  /* Initial beliefs */
2  estoque(0).
3  energia(10).
4  recompensa(3).
5  jornada(1).
6  noitada(3).
7  refeicao(2).
8
9  /* Initial goals */
10 !curtir.
11
12 /* Plans */
13 +!curtir: energia(E) & noitada(N) & jornada(T) & (E>(N+T)) <- --energia(E-N); !curtir.
14 +!curtir: energia(E) & noitada(N) & jornada(T) & (E<=(N+T))<- !comer.
15
16 +!comer: energia(E) & (E<2*(N+T)) & noitada(N) & estoque(C) & C>0 & refeicao(V) <- --estoque(C-1); --energia(E+V); !comer.
17 +!comer: energia(E) & noitada(N) & jornada(T) & (E>=2*(N+T)) <- !curtir.
18 +!comer: estoque(C)<- !trabalhar.
19
20 +!trabalhar: recompensa(R) & jornada(D) & estoque(C) & energia(E)<- --estoque(C+R); --energia(E-D); !comer.
21
22 +energia(N): (N < 1) <- .print("Giacomo morreu de fome"); .stopMAS.
23
24 +estoque(C): (C < 0) <- .print("Acabaram as pizzas"); .stopMAS.
```

Giacamo Life - Exercise

Giacomo's health is very fragile, as:

- If he has energy equal to or less than 1, he dies from starvation;
- If his energy level exceeds 12, he dies from obesity;
- If he doesn't dance for 5000 milliseconds, he dies of sadness.

Logic of Giacomo's life:

- Each pizza he eats increases his energy bar in 4 units.
- Every time he goes clubbing, his energy decreases by 3 units.
- Initially, Giacomo's energy is 5 units;
- Initially, Giacomo has a stock of 10 pizzas;
- Each time he works, his energy decreases by 2 units, and he gains 1 pizza unit.
- Giacomo can only store 20 pizzas in his house.

```
[ChonOS EmbeddedMAS] Starting the Multi-Agent System.  
NOTE: Picked up JDK_JAVA_OPTIONS:  --add-opens=java.base/java.lang  
mi.transport=ALL-UNNAMED  
Jason Http Server running on http://127.0.1.1:3272  
[giacomo] I'm in the Party [time=5000] [pizza=10] [energy=2]  
[giacomo] I'm eating [time=4130] [pizza=9] [energy=6]  
[giacomo] I'm in the Party [time=3240] [pizza=9] [energy=3]  
[giacomo] I'm eating [time=4120] [pizza=8] [energy=7]  
[giacomo] I'm in the Party [time=3220] [pizza=8] [energy=4]  
[giacomo] I'm eating [time=4100] [pizza=7] [energy=8]  
[giacomo] I'm in the Party [time=3180] [pizza=7] [energy=5]  
[giacomo] I'm in the Party [time=4060] [pizza=7] [energy=2]  
[giacomo] I'm eating [time=4070] [pizza=6] [energy=6]
```



<https://github.com/chon-group/distributedAndEmbeddedAI/blob/main/course/06-MyFirstAgent/GiacomoLife/README.md>

OBRIGADO!

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