Minted Example for JaCaMo

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October 20, 2018

1 in line

```
// Code of dummy agents (Blue team)

// the following plans (+pos....) react to the starting step
// (since each new step causes a new +pos perception)

/* -- useful rules */

// whether to go to depot
go_depot :- carrying_gold(3).
go_depot :- carrying_gold(N) & N > 0 & pos(_,_,Step) & steps(_,NSteps) & Step+200

+pos(_,_,_)
   <- !define_new_pos.

+!define_new_pos
   <- ?pos(X,Y,_);
      ?random_pos(NX,NY,test);
     //.print("New point ",NX,",",NY);
      -+back_pos(NX,NY);
      +p;
      -p;
      X > Y+2-1;
      a ||| b;
      a |&| b;
```

```
        jia.direction(X, Y, NX, NY, D);
        do(D).
```

2 Agent

```
// Code of dummy agents (Blue team)

// the following plans (+pos....) react to the starting step
// (since each new step causes a new +pos perception)

/* -- useful rules */
!teste(10, .55, 0.56, -8, 1.3E33).

// whether to go to depot
go_depot :- carrying_gold(3).
go_depot :- KKK::carrying_gold(N) & N > 0 + (0 - X) & pos(_,_,Step) & steps(_,NSteps) & Step+200

// find a free random location
random_pos(X,Y) :-
   ns1::po.s_t(AgX,AgY,_) |&|
   jia.random("RX,20") | X = (RX-10) mod AgX & X > 0 &
   jia.random(RY,20,5) ||| Y = (RY-10) div AgY &
   not jia.obstacle(X,Y).

^!goto(X,Y)[state(S)] <- .print("goto state is ",S).

/* -- Gold found! -- */

// in the positon of the agent
@p1[atomic,blabla]
 +!pos(X,Y,_KK)
   : cell(X,Y,gold)[a,b,10] &
     carrying_gold(N) & N \== 3 // container has space
  <- TT::do(pick); // rem
     Id::focus(ArtId);
     if (teste) {
```

```
32          .pr.i_nt("picked gold!");
33      }
34      for (~teste) { true false begin end xx::~te_st
35          .pr.i_nt("picked gold!");
36      }
37      while (LL::teste) {
38          .pr.i_nt("picked gold!");
39      }
40      !TT::g(10);
41      -+TT::back_pos(X,Y). // remembers a place to return
42
43  // in a cell besides
44  +pos(X,Y,_)
45     : cell(GX,GY,gold) &
46       carrying_gold(N) & N < 3 // container has space
47    <- jia.direction(X, Y, GX, GY, D);
48       do(D);
49       .x.x. // this . is should be parsed as the end of plan and not part of the internal action
50
51  /* -- has gold, carry it/them to depot -- */
52
53  // when arrive on depot
54  +?pos(X,Y,_,test)
55     : go_depot &
56       depot(_,X,Y)
57    <- .print("in depot");
58       do(drop).
59
60  // when still not in depot
61  +pos(X,Y,_)
62     : go_depot &
63       depot(_,DX,DY)
64    <- jia.direction(X, Y, DX, DY, D); // uses A* to find a path to the depot
65       //.print("from ",X,"x",Y," to ",DX,"x",DY," -> ",D);
66       do(D).
67
68  /* -- go to the back pos -- */
69
```

```
70  // at the back_pos
71  +pos(X,Y,_)
72     : back_pos(X,Y) | // I am at back pos, find another
73       (back_pos(BX,BY) & jia.direction(X, Y, BX, BY, skip)) // impossible to go to back_pos, find
74    <- !define_new_pos.
75  +pos(X,Y,_)
76     : back_pos(BX,BY) & jia.direction(X, Y, BX, BY, D) // one step towards back_pos
77    <- do(D).
78
79  /* -- random move -- */
80  +pos(_,_,_)
81     <- !!define_new_pos.
82
83  +!define_new_pos
84     <- ?pos(X,Y,_);
85        ?random_pos(NX,NY,test);
86       //.print("New point ",NX,",",NY);
87        -+back_pos(NX,NY);
88        +p;
89        -p;
90        X > Y+2-1;
91        a ||| b;
92        a |&| b;
93        jia.direction(X, Y, NX, NY, D);
94        do(D).
95
96  !print_fact(5).
97
98  +!print_fact(N)
99    <- !fact(N, F);
100      .print("Factorial of ", N, " is ", F).
101
102 +!fact(N, 1) : N == 0.
103
104 +!fact(N, F) : N > 0
105   <- !fact(N - 1, F1);
106      F = F1 * N.
```

3 Project

```
/*
    JaCaMo Project File

    This file defines the initial state of the MAS (initial agents, environment,
*/

mas writing_paper {

    agent bob
    agent alice
    agent carol

    organisation opaper: wp-os.xml {
        group paper_group: wpgroup {
            responsible-for: s1
            players: bob editor
                     alice writer
                     carol writer
        }
        scheme s1: writePaperSch
    }

    asl-path: src/agt, src/agt/inc

}
```

```
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    asl-path: src/agt, src/agt/inc

}
```

and some java

```
public class UserGUI extends GUIArtifact {

    private InputWindow frame;

    public void setup() {
        try {
            frame = new InputWindow(getCreatorId().getAgentName() );
            frame.pack();

            defineObsProperty("activity", "none");

            linkActionEventToOp(frame.updateButton,"updateActivity");
            linkActionEventToOp(frame.exitButton,"exit");
            linkKeyStrokeToOp(frame.activityField,"ENTER","updateActivity");

            frame.setVisible(true);
        } catch (Exception ex){
            ex.printStackTrace();
        }
    }

    @OPERATION void updateActivity(ActionEvent ev) {
        frame.exitButton.setEnabled(true);
        getObsProperty("activity").updateValue( frame.getActivity() );
    }
}
```