SE – Laborator 6

Problema celor N regine

```
(deftemplate queen (slot line) (slot col))
(deffacts ff (queens 8))

(defrule init
=>
(assert (line 1)))

(defrule no_solution
(declare (salience 10))
?f <- (linie 0)
=>
(retract ?f)
(printout t “Nu exista solutie” crlf))

(defrule solution
(declare (salience 10))
(queens ?n)
(linie =(+ ?n 1))
?q <- (queen (line ?i)(col ?c))
(not (queen (line ?j&:(< ?j ?i))))
=>
(retract ?q)
(printout t ?i “,” ?c crlf))

(defrule stop
(declare (salience 10))
(queens ?n)
?f <- (line =(+ ?n 1))
(not (queen))
=>
(retract ?f))

(defrule make_queen
(line ?l)
(not (queen (line ?l)))
=>
(assert (queen (line ?l)(col 1))))

(defrule retract_queen
(queens ?n)
?l <- (line ?i)
?q <- (queen (line ?i) (col =(+ ?n 1)))
=>
(retract ?l ?q)
(assert (line (- ?i 1)) (reposition_queen)))

(defrule reposition_old_queen
(line ?l)
?f <- (reposition_queen)
?q <- (queen (line ?l) (col ?c))
=>
(retract ?f)
```

```
(modify ?q (col (+ ?c 1))))

(defrule position_new_queen
(queens ?n)
(line ?l)
?q <- (queen (line ?l) (col ?c1&:(<= ?cl ?n)))
(queen (line ?i:(< ?i ?l))
        (col ?ci&:(or (= ?cl ?ci)
                      (= (- ?l ?i)  (abs (- ?ci ?cl))))))
=>
(modify ?q (col (+ ?cl 1))))

(defrule advance
(queens ?n)
?f <- (line ?l)
(queen (line ?l) (col ?c1&:(<= ?cl ?n)))
(not (queen (line ?i:(< ?i ?l))
        (col ?ci&:(or (= ?cl ?ci)
                      (= (- ?l ?i)  (abs (- ?ci ?cl)))))))
=>
(retract ?f)
(assert (line (+ ?l 1))))
```