Министерство науки и образования РФ

Федеральное государственное бюджетное учреждение

высшего образования

**«Тверской государственный технический университет»**

(ТвГТУ)

Кафедра программного обеспечения

**Отчет по лабораторной работе №1**

по дисциплине: «Интеллектуальные

информационные системы»

Тема: «Изучение основных возможностей и базовых команд среды»

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# Пункт 1.1

(clear)

(reset)

(assert (n n) (m m) (p p))

Появились соответствующий факты

(reset)

Остался только initial-fact

(deffacts name (n n) (m m) (p p))

Ничего не изменилось

(reset)

Теперь при каждом reset будут появлятся

(initial-fact) (n n) (m m) (p p)

# Пункт 1.2

(clear)

(deffacts F1 (x) (y) (z))

; x & y => v

(defrule R1 (and (x) (y)) => (assert (v)))

; y & z => w

(defrule R2 (and (y) (z)) => (assert (w)))

; v & w => u

(defrule R3 (and (v) (w)) => (assert (u)))

Пункт 2

; Считываем данные у пользователя

(defrule data-input

(initial-fact)

=>

(printout t "Days until exam: " crlf)

(bind ?days (read))

(assert (days ?days))

(printout t "Amount of work (%): " crlf)

(bind ?work (read))

(assert (work ?work))

(printout t "Temperature outside (c): " crlf)

(bind ?temp (read))

(assert (temp ?temp))

(printout t "Is it raining outside? (0 or 1): " crlf)

(bind ?rain (read))

(assert (rain ?rain))

)

;Погода без дождя

(defrule W1

(temp ?temp)

(rain ?rain)

(test (< ?temp 0))

=>

(assert (wthr 0))

)

(defrule W2

(temp ?temp)

(rain ?rain)

(test (and(and(>= ?temp 0)(< ?temp 10)) (= ?rain 0)) )

=>

(assert (wthr 1))

)

(defrule W3

(temp ?temp)

(rain ?rain)

(test (and(and(>= ?temp 10)(< ?temp 20)) (= ?rain 0)) )

=>

(assert (wthr 2))

)

(defrule W4

(temp ?temp)

(rain ?rain)

(test (and (>= ?temp 20) (= ?rain 0)) )

=>

(assert (wthr 3))

)

;Погода с дождем

(defrule W5

(temp ?temp)

(rain ?rain)

(test (and(and(>= ?temp 0)(< ?temp 10)) (= ?rain 1)) )

=>

(assert (wthr 0))

)

(defrule W6

(temp ?temp)

(rain ?rain)

(test (and(and(>= ?temp 10)(< ?temp 20)) (= ?rain 1)) )

=>

(assert (wthr 1))

)

(defrule W7

(temp ?temp)

(rain ?rain)

(test (and (>= ?temp 20) (= ?rain 1)) )

=>

(assert (wthr 2))

)

;Высчитаем количество свободных дней

(defrule T1

(days ?days)

(work ?work)

(test (> ?work 0))

=>

(assert (ftime (- (\* ?days 10) ?work)))

)

(defrule T2

(work ?work)

(test (<= ?work 0))

=>

(assert (ftime 10000))

)

;Вывод сообщений о погоде

(defrule SW1

(wthr ?wthr)

(test (= ?wthr 0))

=>

(printout t "Weather is awful" crlf)

)

(defrule SW2

(wthr ?wthr)

(test (= ?wthr 1))

=>

(printout t "Weather is not good enough" crlf)

)

(defrule SW3

(wthr ?wthr)

(test (= ?wthr 2))

=>

(printout t "Weather is good" crlf)

)

(defrule SW4

(wthr ?wthr)

(test (= ?wthr 3))

=>

(printout t "Weather is wonderful" crlf)

)

;Вывод сообщение о количестве времени

(defrule ST1

(ftime ?ftime)

(test (<= ?ftime 0))

=>

(printout t "Time is over you are expelled" crlf)

)

(defrule ST2

(ftime ?ftime)

(test (and (> ?ftime 0) (<= ?ftime 20)))

=>

(printout t "You don't have much time" crlf)

)

(defrule ST4

(ftime ?ftime)

(test (and (> ?ftime 20) (<= ?ftime 60)))

=>

(printout t "You have some spare time" crlf)

)

(defrule ST5

(ftime ?ftime)

(test (and (> ?ftime 60) (<= ?ftime 9999)))

=>

(printout t "You have plenty of time" crlf)

)

(defrule ST6

(ftime ?ftime)

(test (> ?ftime 9999) )

=>

(printout t "You have infinite amount of time" crlf)

)

; выводим ответ что-же делать

(defrule A1

(ftime ?ftime)

(test (> ?ftime 9999))

=>

(printout t "Do what you want")

)

(defrule A2

(ftime ?ftime)

(test (<= ?ftime 0))

=>

(printout t "You should work like a hero")

)

(defrule A3

(ftime ?ftime)

(test (and (> ?ftime 0) (<= ?ftime 20)))

=>

(printout t "You should do labs!" crlf)

)

(defrule A4

(ftime ?ftime)

(wthr ?wthr)

(test (and (> ?ftime 20) (<= ?ftime 60)))

(test (and (> ?wthr -1) (<= ?wthr 1)))

=>

(printout t "Spend some time on your lab" crlf)

)

(defrule A5

(ftime ?ftime)

(wthr ?wthr)

(test (and (> ?ftime 20) (<= ?ftime 60)))

(test (and (> ?wthr 1) (<= ?wthr 3)))

=>

(printout t "You can go on a little walk" crlf)

)

(defrule A6

(ftime ?ftime)

(wthr ?wthr)

(test (and (> ?ftime 60) (<= ?ftime 9999)))

=>

(printout t "You can relax and do you labs later" crlf)

)

Примеры использования

Days until exam: 6

Amount of work (%): 40

Temperature outside (c): 17

It is raining outside? (0 or 1): 0

>>

Weather is good

You don’t have much time

You should do labs!

Days until exam: 15

Amount of work (%): 50

Temperature outside (c): 16

It is raining outside? (0 or 1): 0

>>

Weather is good

You have plenty of time

You can relax and do your labs later

# Заключение

Были изучены азы CLIPS в частности Факты и Правила. Была разработана простая экспертная система.