МИНОБРНАУКИ РОССИИ

Федеральное государственное бюджетное образовательное учреждение высшего образования

«Тверской государственный технический университет»

(ТвГТУ)

Кафедра «Программного обеспечения»

**Отчёт по лабораторной работе №1**

по дисциплине “Системы искусственного интеллекта”

Выполнил: студент группы

ПИН-17.06

Завгороднев Е.Ю

Проверил:

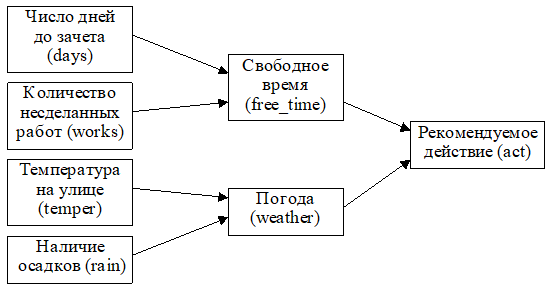
Мальков А. А.

Тверь 2021

# Задача

1. Изучение базовых команд и конструкций CLIPS

2. Разработка демонстрационной экспертной системы.



# Листинг

(defrule data-input

(initial-fact)

=>

(printout t crlf "Vvedite chislo dnei do zacheta (tseloe znachenie): ")

(bind ?days (read))

(assert (days ?days))

(printout t crlf "Vvedite chislo nesdelannyh laboratornyh rabot (v %) ")

(bind ?works (read))

(assert (works ?works))

(printout t crlf "Vvedite temperaturu na ulitse: ")

(bind ?temper (read))

(assert (temper ?temper))

(printout t crlf "Est' li na ulitse osadki? (da - 1/net - 0): ")

(bind ?rain (read))

(assert (rain ?rain))

(printout t crlf "Is there any white rabbit? (da - 1/net - 0) //HASN'T Realized: "))

(defrule R1

(days ?days)

(works ?works)

(test (= ?works 0))

=>

(printout t crlf crlf "Vse uzhe sdelano." crlf)

(assert (freetime "infinity"))

(assert (freetimecnst 0)))

(defrule R2

(days ?days)

(works ?works)

(test (and (and(> ?days 5) (<= ?days 7)) (and (<= ?works 50) (> ?works 0) )))

=>

(printout t crlf crlf "Svobodnogo vremeni mnogo" crlf)

(assert (freetime "mnogo"))

(assert (freetimecnst 1)))

(defrule R3

(days ?days)

(works ?works)

(test (and (and(> ?days 5) (<= ?days 7)) (and (<= ?works 100) (> ?works 50) )))

=>

(printout t crlf crlf "Svobodnogo vremeni ne ochen' mnogo" crlf)

(assert (freetime "ne\_ochen"))

(assert (freetimecnst 2)))

(defrule R4

(days ?days)

(works ?works)

(test (and (and(> ?days 3) (<= ?days 5)) (and (<= ?works 50) (> ?works 0) )))

=>

(printout t crlf crlf "Svobodnogo vremeni mnogo" crlf)

(assert (freetime "mnogo"))

(assert (freetimecnst 1)))

(defrule R5

(days ?days)

(works ?works)

(test (and (and(> ?days 3) (<= ?days 5)) (and (<= ?works 100) (> ?works 50) )))

=>

(printout t crlf crlf "Svobodnogo vremeni ne ochen' mnogo" crlf)

(assert (freetime "ne\_ochen"))

(assert (freetimecnst 2)))

(defrule R6

(days ?days)

(works ?works)

(test (and (= ?days 3) (and ( > ?works 0 ) (<= ?works 50) )))

=>

(printout t crlf crlf "Svobodnogo vremeni ne ochen' mnogo" crlf)

(assert (freetime "ne\_ochen"))

(assert (freetimecnst 2)))

(defrule R7

(days ?days)

(works ?works)

(test (and (= ?days 3) (and ( > ?works 50 ) (<= ?works 100) )))

=>

(printout t crlf crlf "Svobodnogo vremeni sovsem nemnogo. Pora delat'" crlf)

(assert (freetime "pora\_dalat"))

(assert (freetimecnst 3)))

(defrule R8

(days ?days)

(works ?works)

(test (and (= ?days 2) (and ( > ?works 0 ) (<= ?works 33) )))

=>

(printout t crlf crlf "Svobodnogo vremeni ne ochen' mnogo" crlf)

(assert (freetime "ne\_ochen"))

(assert (freetimecnst 2)))

(defrule R9

(days ?days)

(works ?works)

(test (and (= ?days 2) (and ( > ?works 33 ) (<= ?works 66) )))

=>

(printout t crlf crlf "Svobodnogo vremeni sovsem nemnogo. Pora delat'" crlf)

(assert (freetime "pora\_dalat"))

(assert (freetimecnst 3)))

(defrule R10

(days ?days)

(works ?works)

(test (and (= ?days 2) (and ( > ?works 66 ) (<= ?works 100) )))

=>

(printout t crlf crlf "Svobodnogo vremeni net -- ne uspevaem" crlf)

(assert (freetime "finish"))

(assert (freetimecnst 4)))

(defrule R11

(days ?days)

(works ?works)

(test (and (= ?days 1) (and ( > ?works 0 ) (<= ?works 25) )))

=>

(printout t crlf crlf "Svobodnogo vremeni ne ochen' mnogo" crlf)

(assert (freetime "ne\_ochen"))

(assert (freetimecnst 2)))

(defrule R12

(days ?days)

(works ?works)

(test (and (= ?days 1) (and ( > ?works 25 ) (<= ?works 50) )))

=>

(printout t crlf crlf "Svobodnogo vremeni sovsem nemnogo. Pora delat'" crlf)

(assert (freetime "pora\_dalat"))

(assert (freetimecnst 3)))

(defrule R13

(days ?days)

(works ?works)

(test (and (= ?days 1) (and ( > ?works 50 ) (<= ?works 100) )))

=>

(printout t crlf crlf "Svobodnogo vremeni net -- ne uspevaem" crlf)

(assert (freetime "finish"))

(assert (freetimecnst 4)))

(defrule R14

(days ?days)

(works ?works)

(test (and (= ?days 0) ( > ?works 0 )))

=>

(printout t crlf crlf "Nu kogda-to ono bylo. A seichas uzhe ne vazhno" crlf)

(assert (freetime "ppc"))

(assert (freetimecnst 5)))

(defrule R15

(temper ?temper)

(rain ?rain)

(test (> ?temper 25))

=>

(printout t crlf crlf "Pogoda ochen' horoshaya " crlf)

(assert (weather "v-good"))

(assert (weathercnst 1)))

(defrule R16

(temper ?temper)

(rain ?rain)

(test (and(and(>= ?temper 5)(< ?temper 25)) (= ?rain 0)) )

=>

(printout t crlf crlf "Pogoda horoshaya " crlf)

(assert (weather "good"))

(assert (weathercnst 2)))

(defrule R17

(temper ?temper)

(rain ?rain)

(test (and(and(>= ?temper 5)(< ?temper 25)) (<> ?rain 0)) )

=>

(printout t crlf crlf "Pogoda plohaya " crlf)

(assert (weather "bad"))

(assert (weathercnst 3)))

(defrule R18

(temper ?temper)

(rain ?rain)

(test (<= ?temper 5) )

=>

(printout t crlf crlf "Pogoda ochen' plohaya " crlf)

(assert (weather "v-bad "))

(assert (weathercnst 4)))

(defrule R19

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (and(< ?freetimecnst 3)(= ?weathercnst 1)))

=>

(printout t crlf crlf "Mozhno idti gulyat'" crlf)

(assert (act "go")))

(defrule R20

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (= ?freetimecnst 5))

=>

(printout t crlf crlf "Po povodu pogodi ne znayu, no uchit' uje pozdno" crlf)

(assert (act "nth")))

(defrule R21

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (= ?freetimecnst 0))

=>

(printout t crlf crlf "Po povodu pogodi ne znayu -- gotovsya k sleduyuchey sessii..." crlf)

(assert (act "botan")))

(defrule R22

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (and(= ?freetimecnst 4)(<> ?weathercnst 5)))

=>

(printout t crlf crlf "Nado uchit'!" crlf)

(assert (act "learn")))

(defrule R23

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (and(= ?freetimecnst 3)(= ?weathercnst 2)))

=>

(printout t crlf crlf "Luchshe uchit'sya" crlf)

(assert (act "learn")))

(defrule R24

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (and(= ?freetimecnst 2)(= ?weathercnst 2)))

=>

(printout t crlf crlf "As u wish" crlf)

(assert (act "auw")))

(defrule R25

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (and(= ?freetimecnst 1)(= ?weathercnst 2)))

=>

(printout t crlf crlf "As u wish" crlf)

(assert (act "auw")))

(defrule R26

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (and( or (= ?freetimecnst 2)( = ?freetimecnst 1))(= ?weathercnst 3)))

=>

(printout t crlf crlf "Luchshe uchit'" crlf)

(assert (act "glearn")))

(defrule R27

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (and(= ?freetimecnst 3)(= ?weathercnst 3)))

=>

(printout t crlf crlf "Luchshe uchit'" crlf)

(assert (act "glearn")))

(defrule R28

(weathercnst ?weathercnst)

(freetimecnst ?freetimecnst)

(test (and(> ?freetimecnst 0) (= ?weathercnst 4)))

=>

(printout t crlf crlf "Luchshe uchit'" crlf)

(assert (act "glearn")))

# Результат

