



Министерство науки и высшего образования Российской Федерации  
Калужский филиал  
федерального государственного автономного  
образовательного учреждения высшего образования  
«Московский государственный технический университет имени Н.Э. Баумана  
(национальный исследовательский университет)»  
(КФ МГТУ им. Н.Э. Баумана)

ФАКУЛЬТЕТ ИУК «Информатика и управление»

КАФЕДРА ИУК4 «Системы обработки информации»

## ЛАБОРАТОРНАЯ РАБОТА 1

«Факты в среде CLIPS»

ДИСЦИПЛИНА: «Инженерия интеллектуальных систем»

Выполнил: студент гр. ИУК4-62Б \_\_\_\_\_ (\_\_\_\_ Губин Е.В.\_\_\_\_)  
(Подпись) (Ф.И.О.)

Проверил: \_\_\_\_\_ (\_\_\_\_ Гусев К.А.\_\_\_\_)  
(Подпись) (Ф.И.О.)

Дата сдачи (защиты):

Результаты сдачи (защиты):

- Балльная оценка:

- Оценка:

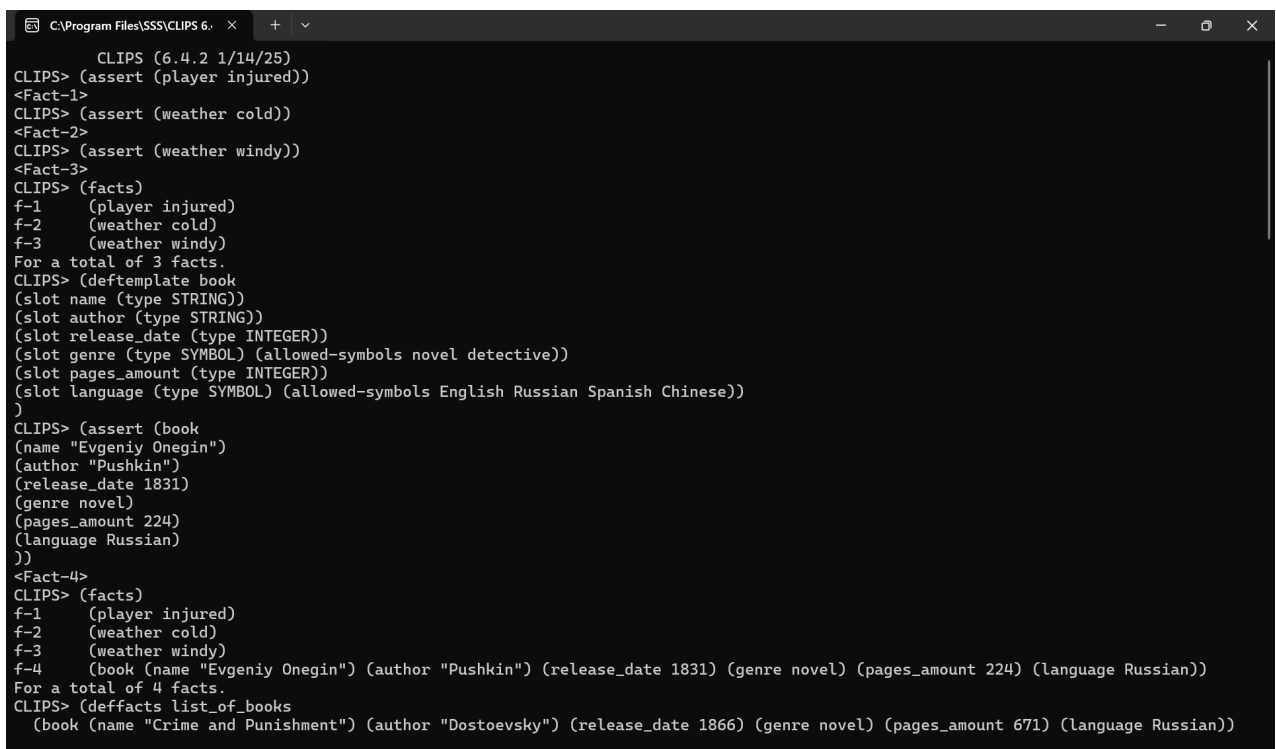
Калуга , 2025

**Цели:** формирование практических навыков по работе с фактами в среде CLIPS.

**Задачи:**

1. Понять , что такое факт применительно к экспертным системам, его структуру и виды
2. Изучить основные команды для работы с фактами в среде CLIPS
3. Научиться создавать, удалять, изменять сохранять и загружать факты
4. Овладеть навыками очищения и повторной инициализации базы знаний

**Листинг выполнения команд:**



```
CLIPS (6.4.2 1/14/25)
CLIPS> (assert (player injured))
<Fact-1>
CLIPS> (assert (weather cold))
<Fact-2>
CLIPS> (assert (weather windy))
<Fact-3>
CLIPS> (facts)
f-1      (player injured)
f-2      (weather cold)
f-3      (weather windy)
For a total of 3 facts.
CLIPS> (deftemplate book
(slot name (type STRING))
(slot author (type STRING))
(slot release_date (type INTEGER))
(slot genre (type SYMBOL) (allowed-symbols novel detective))
(slot pages_amount (type INTEGER))
(slot language (type SYMBOL) (allowed-symbols English Russian Spanish Chinese))
)
CLIPS> (assert (book
(name "Evgeniy Onegin")
(author "Pushkin")
(release_date 1831)
(genre novel)
(pages_amount 224)
(language Russian)
))
<Fact-4>
CLIPS> (facts)
f-1      (player injured)
f-2      (weather cold)
f-3      (weather windy)
f-4      (book (name "Evgeniy Onegin") (author "Pushkin") (release_date 1831) (genre novel) (pages_amount 224) (language Russian))
For a total of 4 facts.
CLIPS> (deffacts list_of_books
(book (name "Crime and Punishment") (author "Dostoevsky") (release_date 1866) (genre novel) (pages_amount 671) (language Russian))
)
```

```

C:\Program Files\SSS\CLIPS 6.  ×  +  ▾
CLIPS> (deffacts list_of_books
  (book (name "Crime and Punishment") (author "Dostoevsky") (release_date 1866) (genre novel) (pages_amount 671) (language Russian))
  (book (name "Sherlock Holmes") (author "Conan Doyle") (release_date 1892) (genre detective) (pages_amount 307) (language English))
  (book (name "Don Quixote") (author "Cervantes") (release_date 1605) (genre novel) (pages_amount 863) (language Spanish))
  (book (name "The Master and Margarita") (author "Bulgakov") (release_date 1967) (genre novel) (pages_amount 384) (language Russian))
)
  (book (name "The Da Vinci Code") (author "Dan Brown") (release_date 2003) (genre detective) (pages_amount 489) (language English))
  (book (name "War and Peace") (author "Tolstoy") (release_date 1869) (genre novel) (pages_amount 1225) (language Russian))
  (book (name "One Hundred Years of Solitude") (author "Marquez") (release_date 1967) (genre novel) (pages_amount 417) (language Spanish))
  (book (name "The Three-Body Problem") (author "Liu Cixin") (release_date 2008) (genre novel) (pages_amount 302) (language Chinese))
)
CLIPS> (reset)
CLIPS> (facts)
f-1    (book (name "Crime and Punishment") (author "Dostoevsky") (release_date 1866) (genre novel) (pages_amount 671) (language Russian))
f-2    (book (name "Sherlock Holmes") (author "Conan Doyle") (release_date 1892) (genre detective) (pages_amount 307) (language English))
f-3    (book (name "Don Quixote") (author "Cervantes") (release_date 1605) (genre novel) (pages_amount 863) (language Spanish))
f-4    (book (name "The Master and Margarita") (author "Bulgakov") (release_date 1967) (genre novel) (pages_amount 384) (language Russian))
f-5    (book (name "The Da Vinci Code") (author "Dan Brown") (release_date 2003) (genre detective) (pages_amount 489) (language English))
f-6    (book (name "War and Peace") (author "Tolstoy") (release_date 1869) (genre novel) (pages_amount 1225) (language Russian))
f-7    (book (name "One Hundred Years of Solitude") (author "Marquez") (release_date 1967) (genre novel) (pages_amount 417) (language Spanish))
f-8    (book (name "The Three-Body Problem") (author "Liu Cixin") (release_date 2008) (genre novel) (pages_amount 302) (language Chinese))
For a total of 8 facts.
CLIPS> (save-facts "C:\\Users\\komra\\Desktop\\save_facts_result.txt" visible)
8
CLIPS> (retract *)
CLIPS> (facts)
CLIPS> (load-facts "C:\\Users\\komra\\Desktop\\save_facts_result.txt")
8
CLIPS> (facts)

```

```

C:\Program Files\SSS\CLIPS 6.  ×  +  ▾
CLIPS> (facts)
f-9    (book (name "Crime and Punishment") (author "Dostoevsky") (release_date 1866) (genre novel) (pages_amount 671) (language Russian))
f-10   (book (name "Sherlock Holmes") (author "Conan Doyle") (release_date 1892) (genre detective) (pages_amount 307) (language English))
f-11   (book (name "Don Quixote") (author "Cervantes") (release_date 1605) (genre novel) (pages_amount 863) (language Spanish))
f-12   (book (name "The Master and Margarita") (author "Bulgakov") (release_date 1967) (genre novel) (pages_amount 384) (language Russian))
f-13   (book (name "The Da Vinci Code") (author "Dan Brown") (release_date 2003) (genre detective) (pages_amount 489) (language English))
f-14   (book (name "War and Peace") (author "Tolstoy") (release_date 1869) (genre novel) (pages_amount 1225) (language Russian))
f-15   (book (name "One Hundred Years of Solitude") (author "Marquez") (release_date 1967) (genre novel) (pages_amount 417) (language Spanish))
f-16   (book (name "The Three-Body Problem") (author "Liu Cixin") (release_date 2008) (genre novel) (pages_amount 302) (language Chinese))
For a total of 8 facts.
CLIPS> (retract 10)
CLIPS> (facts)
f-9    (book (name "Crime and Punishment") (author "Dostoevsky") (release_date 1866) (genre novel) (pages_amount 671) (language Russian))
f-11   (book (name "Don Quixote") (author "Cervantes") (release_date 1605) (genre novel) (pages_amount 863) (language Spanish))
f-12   (book (name "The Master and Margarita") (author "Bulgakov") (release_date 1967) (genre novel) (pages_amount 384) (language Russian))
f-13   (book (name "The Da Vinci Code") (author "Dan Brown") (release_date 2003) (genre detective) (pages_amount 489) (language English))
f-14   (book (name "War and Peace") (author "Tolstoy") (release_date 1869) (genre novel) (pages_amount 1225) (language Russian))
f-15   (book (name "One Hundred Years of Solitude") (author "Marquez") (release_date 1967) (genre novel) (pages_amount 417) (language Spanish))
f-16   (book (name "The Three-Body Problem") (author "Liu Cixin") (release_date 2008) (genre novel) (pages_amount 302) (language Chinese))
For a total of 7 facts.
CLIPS> (modify 13 (name "The Da Vinci Codes"))
<Fact-13>
CLIPS> (facts)
f-9    (book (name "Crime and Punishment") (author "Dostoevsky") (release_date 1866) (genre novel) (pages_amount 671) (language Russian))
f-11   (book (name "Don Quixote") (author "Cervantes") (release_date 1605) (genre novel) (pages_amount 863) (language Spanish))

```

```

C:\Program Files\SSS\CLIPS 6. x + v
f-16 (book (name "The Three-Body Problem") (author "Liu Cixin") (release_date 2008) (genre novel) (pages_amount 302) (language Chinese))
For a total of 7 facts.
CLIPS> (modify 13 (name "The Da Vinci Codes"))
<Fact-13>
CLIPS> (facts)
f-9 (book (name "Crime and Punishment") (author "Dostoevsky") (release_date 1866) (genre novel) (pages_amount 671) (language Russian))
f-11 (book (name "Don Quixote") (author "Cervantes") (release_date 1605) (genre novel) (pages_amount 863) (language Spanish))
f-12 (book (name "The Master and Margarita") (author "Bulgakov") (release_date 1967) (genre novel) (pages_amount 384) (language Russian))
f-13 (book (name "The Da Vinci Codes") (author "Dan Brown") (release_date 2003) (genre detective) (pages_amount 489) (language English))
f-14 (book (name "War and Peace") (author "Tolstoy") (release_date 1869) (genre novel) (pages_amount 1225) (language Russian))
f-15 (book (name "One Hundred Years of Solitude") (author "Marquez") (release_date 1967) (genre novel) (pages_amount 417) (language Spanish))
f-16 (book (name "The Three-Body Problem") (author "Liu Cixin") (release_date 2008) (genre novel) (pages_amount 302) (language Chinese))
For a total of 7 facts.
CLIPS> (reset)
CLIPS> (facts)
f-1 (book (name "Crime and Punishment") (author "Dostoevsky") (release_date 1866) (genre novel) (pages_amount 671) (language Russian))
f-2 (book (name "Sherlock Holmes") (author "Conan Doyle") (release_date 1892) (genre detective) (pages_amount 307) (language English))
f-3 (book (name "Don Quixote") (author "Cervantes") (release_date 1605) (genre novel) (pages_amount 863) (language Spanish))
f-4 (book (name "The Master and Margarita") (author "Bulgakov") (release_date 1967) (genre novel) (pages_amount 384) (language Russian))
f-5 (book (name "The Da Vinci Code") (author "Dan Brown") (release_date 2003) (genre detective) (pages_amount 489) (language English))
f-6 (book (name "War and Peace") (author "Tolstoy") (release_date 1869) (genre novel) (pages_amount 1225) (language Russian))
f-7 (book (name "One Hundred Years of Solitude") (author "Marquez") (release_date 1967) (genre novel) (pages_amount 417) (language Spanish))
f-8 (book (name "The Three-Body Problem") (author "Liu Cixin") (release_date 2008) (genre novel) (pages_amount 302) (language Chinese))
For a total of 8 facts.
CLIPS> |

```

## Листинг команд:

```

CLIPS (6.4.2 1/14/25)
CLIPS> (assert (player injured))
<Fact-1>
CLIPS> (assert (weather cold))
<Fact-2>
CLIPS> (assert (weather windy))
<Fact-3>
CLIPS> (facts)
f-1 (player injured)
f-2 (weather cold)
f-3 (weather windy)
For a total of 3 facts.
CLIPS> (deftemplate book
(slot name (type STRING))
(slot author (type STRING))
(slot release_date (type INTEGER))
(slot genre (type SYMBOL) (allowed-symbols novel detective))
(slot pages_amount (type INTEGER))
(slot language (type SYMBOL) (allowed-symbols English Russian Spanish Chinese))
)
CLIPS> (assert (book
(name "Evgeniy Onegin")
(author "Pushkin")
(release_date 1831)
(genre novel)
(pages_amount 224)
(language Russian)

```

```

))
<Fact-4>
CLIPS> (facts)
f-1      (player injured)
f-2      (weather cold)
f-3      (weather windy)
f-4      (book (name "Evgeniy Onegin") (author "Pushkin")
(release_date 1831) (genre novel) (pages_amount 224) (language
Russian))
For a total of 4 facts.
CLIPS> (deffacts list_of_books
  (book (name "Crime and Punishment") (author "Dostoevsky")
(release_date 1866) (genre novel) (pages_amount 671) (language
Russian))
  (book (name "Sherlock Holmes") (author "Conan Doyle")
(release_date 1892) (genre detective) (pages_amount 307)
(language English))
  (book (name "Don Quixote") (author "Cervantes") (release_date
1605) (genre novel) (pages_amount 863) (language Spanish))
  (book (name "The Master and Margarita") (author "Bulgakov")
(release_date 1967) (genre novel) (pages_amount 384) (language
Russian))
  (book (name "The Da Vinci Code") (author "Dan Brown")
(release_date 2003) (genre detective) (pages_amount 489)
(language English))
  (book (name "War and Peace") (author "Tolstoy") (release_date
1869) (genre novel) (pages_amount 1225) (language Russian))
  (book (name "One Hundred Years of Solitude") (author
"Marquez") (release_date 1967) (genre novel) (pages_amount 417)
(language Spanish))
  (book (name "The Three-Body Problem") (author "Liu Cixin")
(release_date 2008) (genre novel) (pages_amount 302) (language
Chinese))
)
CLIPS> (reset)
CLIPS> (facts)
f-1      (book (name "Crime and Punishment") (author
"Dostoevsky") (release_date 1866) (genre novel) (pages_amount
671) (language Russian))
f-2      (book (name "Sherlock Holmes") (author "Conan Doyle")
(release_date 1892) (genre detective) (pages_amount 307)
(language English))
f-3      (book (name "Don Quixote") (author "Cervantes")
(release_date 1605) (genre novel) (pages_amount 863) (language
Spanish))
f-4      (book (name "The Master and Margarita") (author
"Bulgakov") (release_date 1967) (genre novel) (pages_amount 384)
(language Russian))
f-5      (book (name "The Da Vinci Code") (author "Dan Brown")
(release_date 2003) (genre detective) (pages_amount 489)
(language English))

```

```
f-6      (book (name "War and Peace") (author "Tolstoy")
(release_date 1869) (genre novel) (pages_amount 1225) (language
Russian))
f-7      (book (name "One Hundred Years of Solitude") (author
"Marquez") (release_date 1967) (genre novel) (pages_amount 417)
(language Spanish))
f-8      (book (name "The Three-Body Problem") (author "Liu
Cixin") (release_date 2008) (genre novel) (pages_amount 302)
(language Chinese))
For a total of 8 facts.
CLIPS> (save-facts "C:\\Users\\komra\\Desktop\\
\\save_facts_result.txt" visible)
8
CLIPS>
```

## Сохранённые в файл факты:

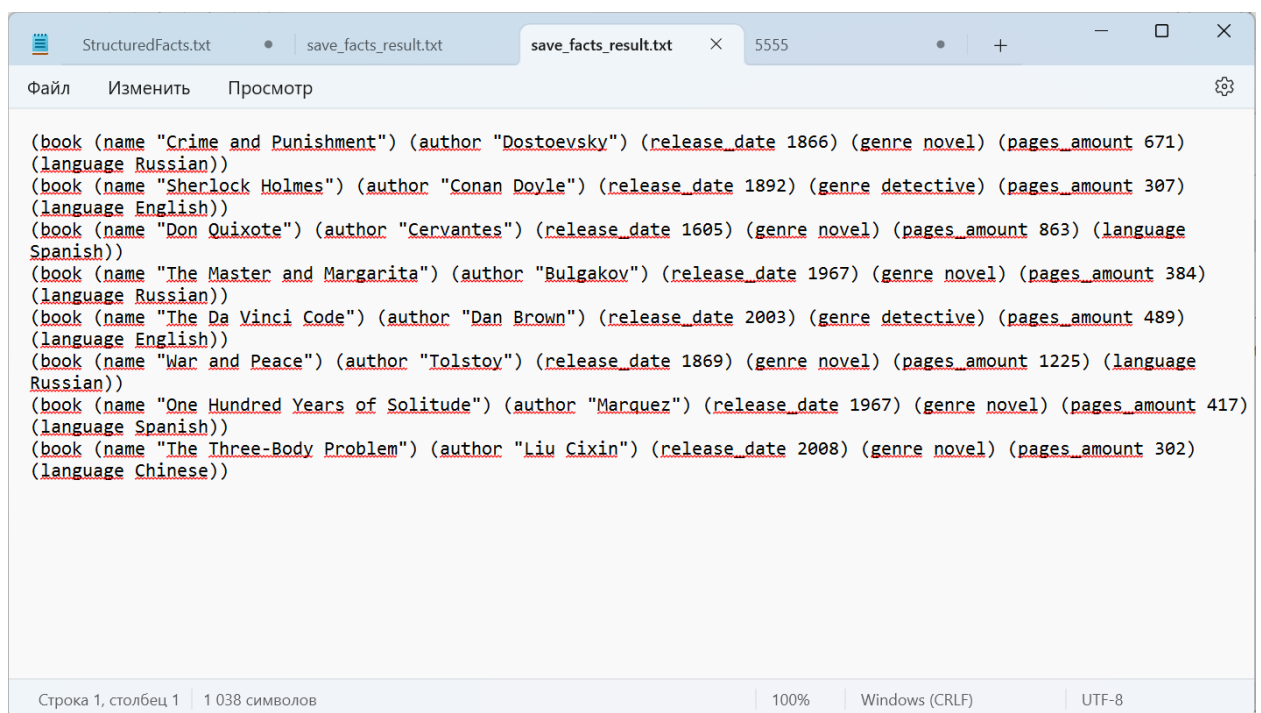


Рисунок 1: Факты в файле

**Вывод:** в ходе выполнения лабораторной работы были получены навыки по основным командам для работы с фактами в среде разработки CLIPS.