#– ## "   #title:"   " #subtitle: "   №4" #author: "   "

1 "   ":

    1.
    2.
    3.
    4.

2

                    ,   NASM

3

3.0.1   1.   **NASM:**

```
akhamdamova@dk6n51 ~ $ cd ~/work/study/2022-2023/"Архитектура компьютера"/arch-pc
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc $ mkdir lab05
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc $ ls
CHANGELOG.md   COURSE   labs      Makefile   README.en.md          README.md
config         lab05    LICENSE   prepare    README.git-flow.md    template
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc $ 
```

mkdir ~/work/arch-pc/lab05
(,
~/work/study/2022-2023/"   "/arch-pc/labs/lab05/
    ,   ) ### 2.   hello.asm

```
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc $ cd ~/work/study/2022-2023/"Архитектура ко
мпьютера"/arch-pc/labs/lab05/report
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ touch hello.asm
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ gedit hello.asm
```

        gedit

```
hello.asm                                          Открыть ▼  ⊞                    ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report    Сохранить  ≡  ∨ ∧ ×
 1 ; hello.asm
 2 SECTION .data ;
 3         hello: DB 'Hello world!',10 ;
 4 helloLen: EQU $-hello ;
 5 SECTION .text ;
 6         GLOBAL _start ;
 7 _start:
 8         mov eax,4 ;
 9         mov ebx,1 ;
10         mov ecx,hello ;
11         mov edx,helloLen ;
12         int 80h ;
13         mov eax,1 ;
14         mov ebx,0 ;
15         int 80h ;
```

🦊 Архитектура ЭВМ - Лабораторна...   ▪ akhamdamova@dk6n51:~/work/s...   📄 labs   🖊 hello.asm (~/w

3.   :

4.NASM   ,

«Hello World»   :

```
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ nasm -f elf hello.asm
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ ▯
```

```
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ ls
bib  hello.asm  hello.o  image  Makefile  pandoc  report.md
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ ▯
```

5.   : nasm -o obj.o -f elf -g -l list.lst

hello.asm

```
bash: L5: команда не найдена
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ nasm -o obj.o -f elf -g -l list.lst hello.asm
akhamdamova@dk6n51 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ ▯
```

```
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ls
bib  hello.asm  hello.o  image  list.lst  Makefile  obj.o  pandoc  report.md
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ▯
```

6.   .   : ld -m elf_i386 hello.o -

```
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ls
bib  hello.asm  hello.o  image  list.lst  Makefile  obj.o  pandoc  report.md
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ld -m elf_i386 hello.o -o hello
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ls
bib    hello.asm  image     Makefile  pandoc
hello  hello.o    list.lst  obj.o     report.md
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ 
```

o hello

7.   : *-o*

. ld -m elf_i386 obj.o -o main ##7/1

,   ,   ,   : ./hello

```
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ld -m elf_i386 hello.o -o hello
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ls
bib    hello.asm  image     Makefile  pandoc
hello  hello.o    list.lst  obj.o     report.md
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ld -m elf_i386 obj.o -o main
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ./hello
Hello world!
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ 
```

4

4.0.1 1) С   cp   hello.asm   lab5.asm

```
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ./hello
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ cp hello.asm lab5.asm
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $ gedit lab5.asm
```

2)   lab5.asm   ,   Hello

```
$ ls
Открыть ▼  ⊞                          lab5.asm
                        ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report
 1 ;lab5.asm
 2 SECTION .data ;
 3         hello: DB 'Khamdamova Aizhana',10 ;
 4 helloLen: EQU $-hello ;
 5 SECTION .text ;
 6         GLOBAL _start ;
 7 _start:
 8         mov eax,4 ;
 9         mov ebx,1 ;
10         mov ecx,hello ;
11         mov edx,helloLen ;
12         int 80h ;
13         mov eax,1 ;
14         mov ebx,0 ;
15         int 80h ;
```

world!   .

3) lab5.asm .

```
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ nasm -o lab5.o -f elf -g -l list.lst lab5.asm
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ls
bib     hello.asm  image    lab5.o    main      obj.o   report.md
hello   hello.o    lab5.asm  list.lst  Makefile  pandoc
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $
```

.

```
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ld -m elf_i386 lab5.o -o hello
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ls
bib    hello.asm  image   lab5.o    main     obj.o   report.md
hello  hello.o    lab5.asm  list.lst  Makefile  pandoc
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ld -m elf_i386 lab5.o -o main
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/la
b05/report $ ./hello
Khamdamova Aizhana
akhamdamova@dk2n26 ~/work/study/2022-2023/Архитектура компьютера/arch-pc/labs/lab05/report $
```

3 github # :
,

NASM

::: {#refs}