

## Coal Lab Task 1

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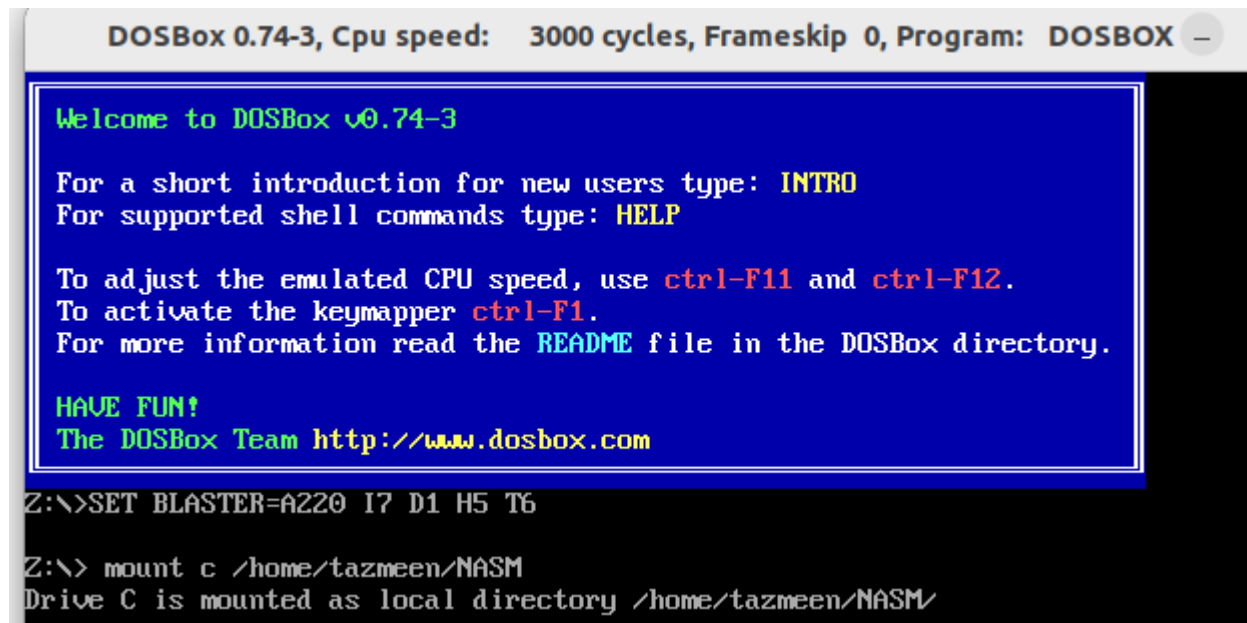
**Step1:** Download NASM Assembler from Google Classroom. Save the files `nasm.exe` and `afd.exe` in the NASM folder located in the home directory.

**Step2:** Install DOSBOX on Ubuntu by executing the following command in the terminal: `sudo apt install dosbox`.

```
(base) tazmeen@tazmeen-ThinkPad-X250:~$ sudo apt install dosbox
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
dosbox is already the newest version (0.74-3-4).
0 upgraded, 0 newly installed, 0 to remove and 6 not upgraded.
(base) tazmeen@tazmeen-ThinkPad-X250:~$
```

(I have already installed it)

**Step3:** Open DOSBOX and mount the NASM folder by typing the following command: `mount c /home/(username)/NASM`



```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX

Welcome to DOSBox v0.74-3

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

To adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

HAVE FUN!
The DOSBox Team http://www.dosbox.com

Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\> mount c /home/tazmeen/NASM
Drive C is mounted as local directory /home/tazmeen/NASM\
```

**Step4:**

Navigate to the mounted C drive

```
Z:\> mount c /home/tazmeen/NASM
Drive C is mounted as local directory /home/tazmeen/NASM\

Z:\>C:

C:\>
```

**Step5:** Assemble the NASM file `c01-01.asm`. Use the following command, and generate a listing file (`c01-01.lst`) as well:

```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX -

Welcome to DOSBox v0.74-3

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

To adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

HAVE FUN!
The DOSBox Team http://www.dosbox.com

Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\> mount c /home/tazmeen/NASM
Drive C is mounted as local directory /home/tazmeen/NASM/

Z:\>C:

C:\>nasm c01-01.asm -o c01-01.com -l c01-01.lst

C:\>
```

**Step7:**  
open it in Advance Debbuger by : `afd c01-01.com`

```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX -

Welcome to DOSBox v0.74-3

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

To adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

HAVE FUN!
The DOSBox Team http://www.dosbox.com

Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\> mount c /home/tazmeen/NASM
Drive C is mounted as local directory /home/tazmeen/NASM/

Z:\>C:

C:\>nasm c01-01.asm -o c01-01.com -l c01-01.lst

C:\>afd c0-01.com_
```

DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: AFD

AX 0000	SI 0000	CS 19F5	IP 0100	Stack +0 0000	Flags 7202
BX 0000	DI 0000	DS 19F5		+2 20CD	
CX 0012	BP 0000	ES 19F5	HS 19F5	+4 9FFF	OF DF IF SF ZF AF PF CF
DX 0000	SP FFFE	SS 19F5	FS 19F5	+6 EA00	0 0 1 0 0 0 0 0

CMD >

0100 B80500	MOV	AX,0005	1	0	1	2	3	4	5	6	7
0103 BB0A00	MOV	BX,000A	DS:0000	CD	20	FF	9F	00	EA	F0	FE
0106 01D8	ADD	AX,BX	DS:0008	AD	DE	1B	05	C5	06	00	00
0108 BB0F00	MOV	BX,000F	DS:0010	18	01	10	01	18	01	92	01
010B 01D8	ADD	AX,BX	DS:0018	01	01	01	00	02	FF	FF	FF
010D B8004C	MOV	AX,4C00	DS:0020	FF	FF	FF	FF	FF	FF	FF	FF
0110 CD21	INT	21	DS:0028	FF	FF	FF	FF	EB	19	C0	11
0112 EB04	JMP	0118	DS:0030	A2	01	14	00	18	00	F5	19
			DS:0038	FF	FF	FF	FF	00	00	00	00
			DS:0040	05	00	00	00	00	00	00	00
			DS:0048	00	00	00	00	00	00	00	00

2

DS:0000	CD	20	FF	9F	00	EA	F0	FE	AD	DE	1B	05	C5	06	00	00
DS:0010	18	01	10	01	18	01	92	01	01	01	01	00	02	FF	FF	FF
DS:0020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	EB	19	C0	11
DS:0030	A2	01	14	00	18	00	F5	19	FF	FF	FF	FF	00	00	00	00
DS:0040	05	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

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1 Step

2ProcStep

3Retrieve

4Help ON

5BRK Menu

6

7 up

8 dn

9 le

10 ri

Done with the setup.