

Experiment 04

Experiment 4: Installation Steps of Microsoft Macro Assembler (TASM)/Turbo Assembler (TASM) and its features.

--

Roll No.	17
Name	Manav Jawrani
Class	D10-A
Subject	Microprocessor Lab
LO Mapped	LO3: Build a program on a microprocessor using arithmetic & logical instruction set of 8086.

Aim: Experiment 4: Installation Steps of Microsoft Macro Assembler (TASM)/Turbo Assembler (TASM) and its features.

Introduction:

Turbo Assembler (TASM) a small 16-bit computer program which enables us to write 16 bit i.e. x86 programming code on a 32-bit machine. It can be used with any high level language compilers like GCC compiler set to build object files. So that programmers can use their daily routine machines to write 16-bit code and execute on x86 devices.

Theory:

A. Installation of TASM.

Before we install TASM on our system , we need to install **DOSBox**. DOSBox is a full-system emulator that provides BIOS interrupts and contains its own internal DOS-like shell. This means that it can be used without owning a license to any real DOS operating system.source emulator.

So, the steps for installing DOSBox are:-

Step 1 - Download the .exe setup file of DOSBox.

The screenshot shows the DOSBox website interface. At the top, there's a navigation bar with links like News, Crew, Information, Status, Downloads, Compatibility, Forum, Links, and Login. The latest version is noted as 0.74.3. Below this, a large green button says "Download Now" with the text "SourceForge - Trusted for Open Source" and a "Make A Donation" button. To the right, there are links for "DOSBox Tutorial" and "DOSBox Manual".

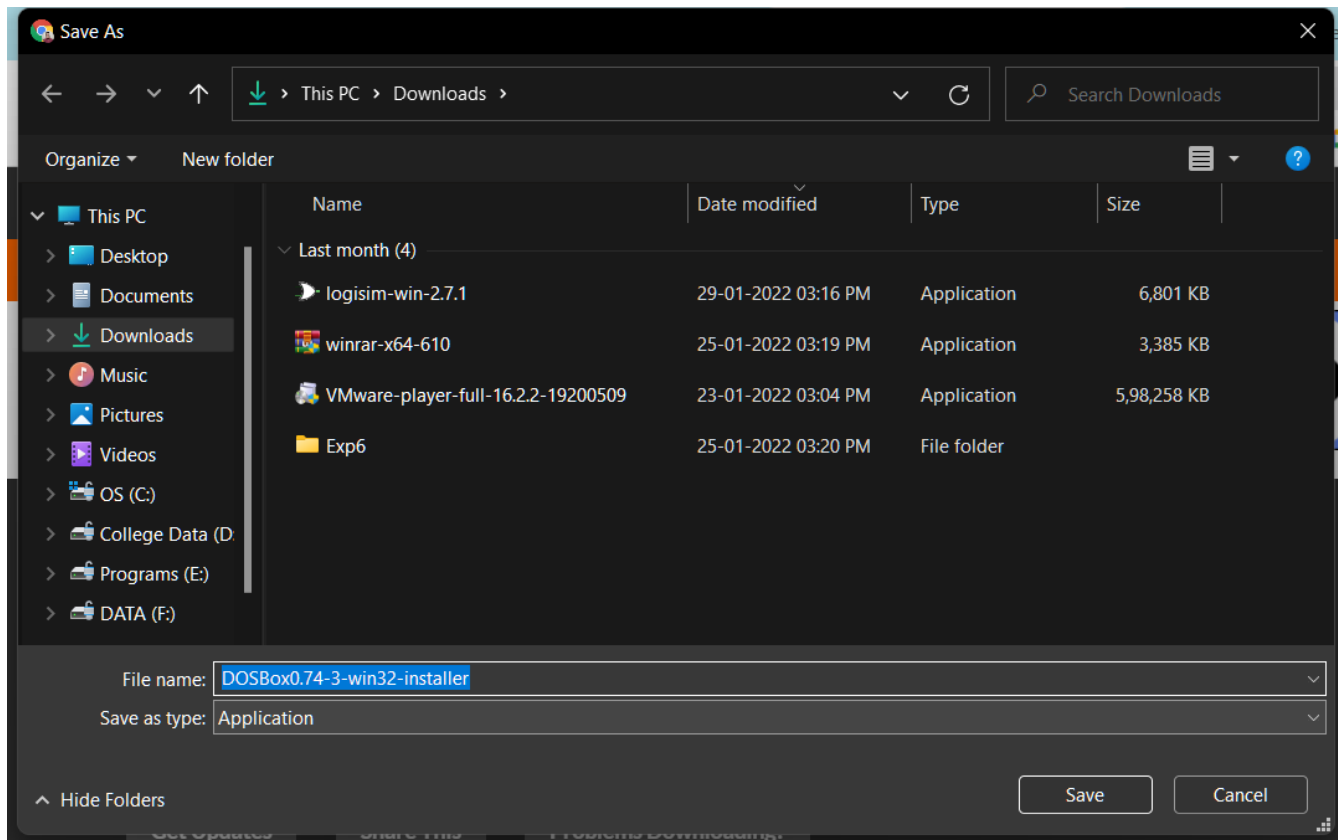
Below the download section, there's a section titled "Looking for a different version, a frontend or a translation? Here's a full list of files:". It contains two tables:

DOSBox (specific versions)		
Mac OS X	0.74-3-3	dmg (Universal)
Windows	0.74-3	Win32 installer
Fedora	0.74-3	rpm
Source	0.74-3	Source
Debian	0.74-3	deb
FreeBSD package	0.74-2	ports
RISC OS	0.74-2	zip
Gentoo Linux	0.74	portage
OS/2	0.74	exe (OS2)
Solaris 10 - sparc	0.73	pkg
BeOS	0.63	binary (x86)
Old dosbox versions	0.50-0.74-2	source + binary(x86)

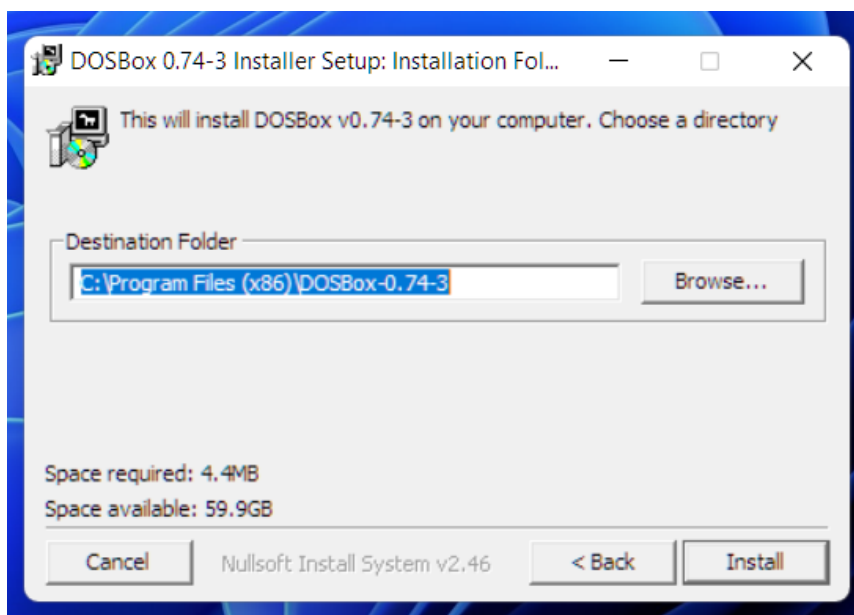
Frontends		
Dosboxfront	4.1	Frontend for OS/2
DosBlaster	3.0	Frontend in .NET
DanPleassey	2.3	Frontend for Mac OS X(Universal)
ProGammaX	2.2	Frontend in .Net
D.O.G	1.53	Frontend for windows
DOSShell	1.4	Frontend for windows
		Frontend in .NET
		Frontend for windows

At the bottom right, there's a section "Looking for classic PC games?" with the text "Get them at cdrom.com. Cheap and DRM-free!".

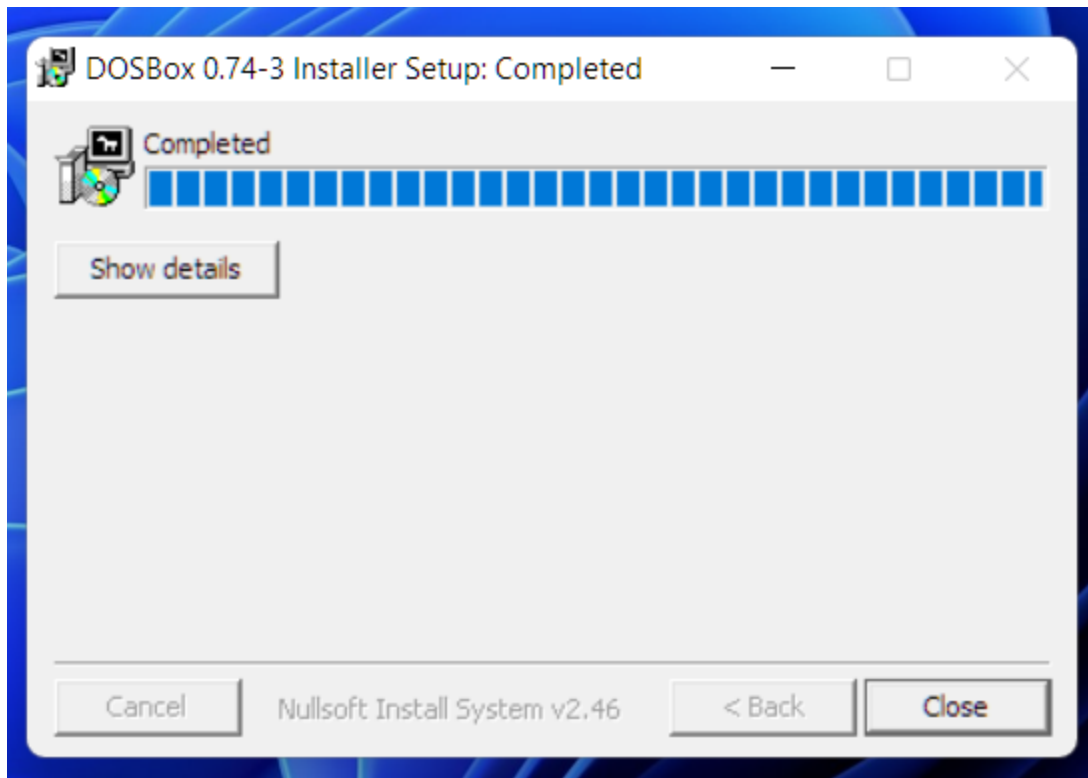
Step 2 - Save to your desired location on your computer.



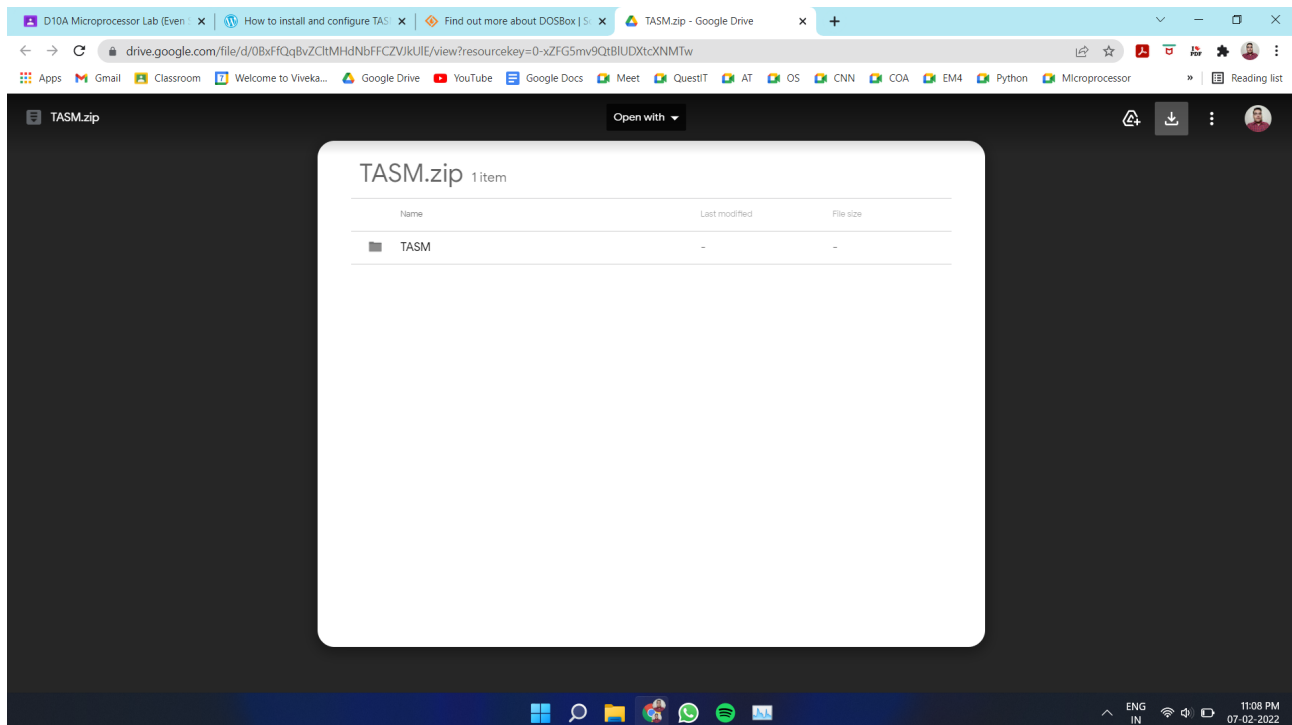
Step 3 - Run the .exe of DOSBox then choose the directory to install the software and click on '**Install**' button.



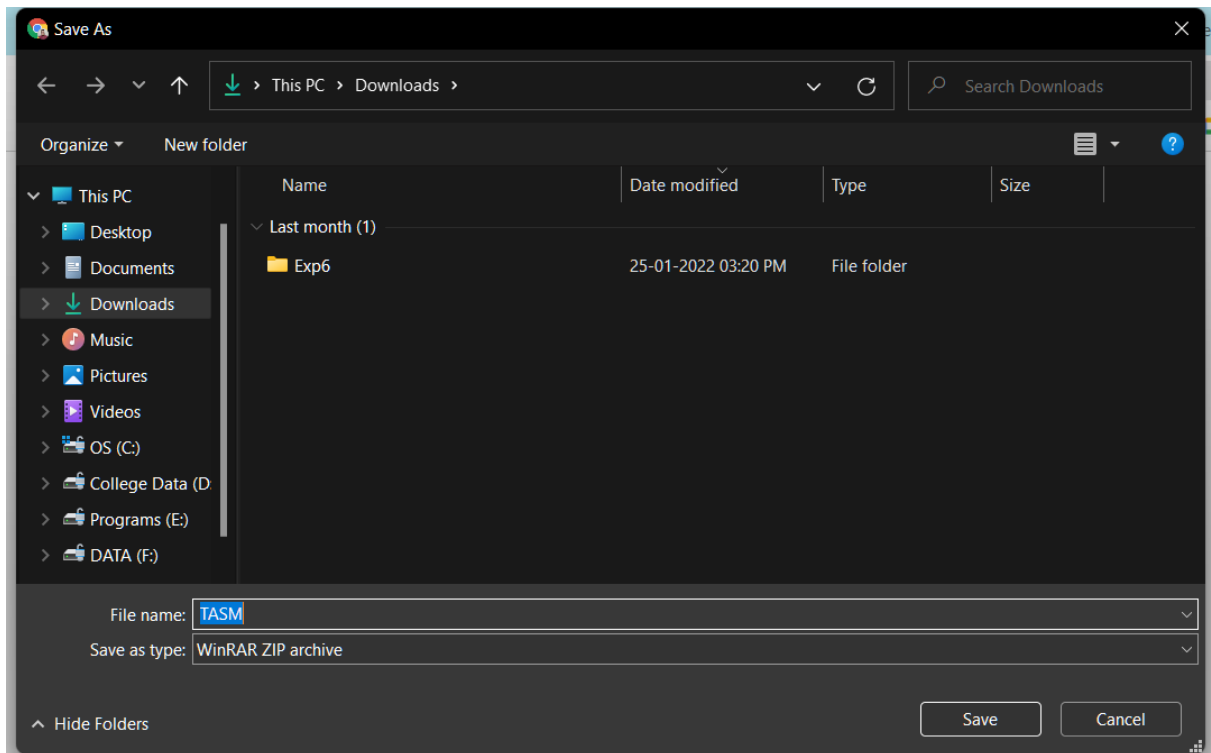
You have successfully installed the DOSBox on your computer if you see this prompt.



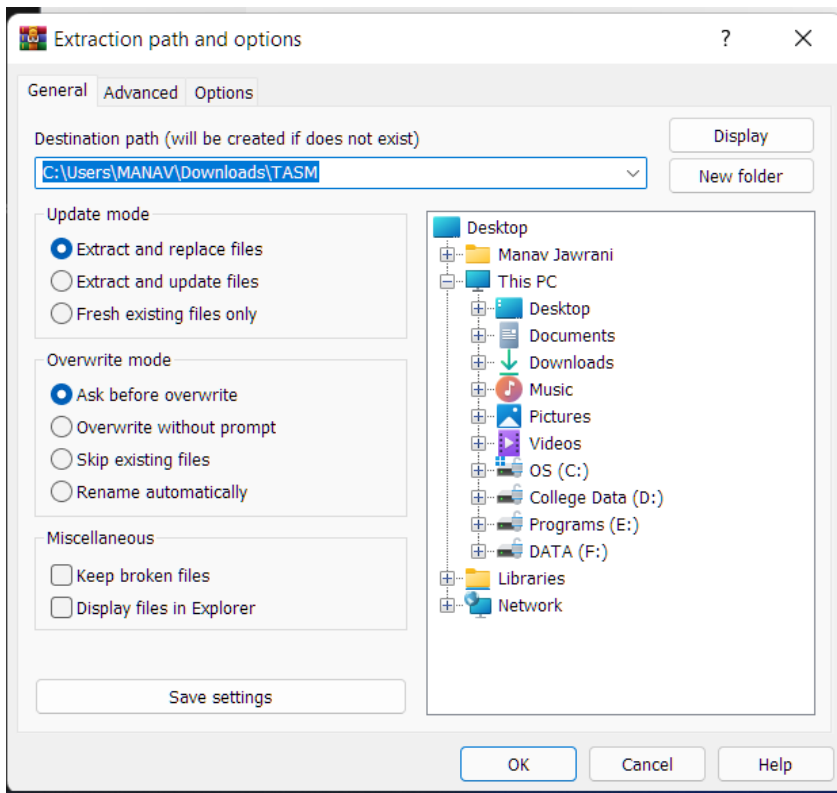
Now , let's begin the installation of TASM.The steps for installing TASM are as follows-
Step 1 - Download the zip file of TASM software.



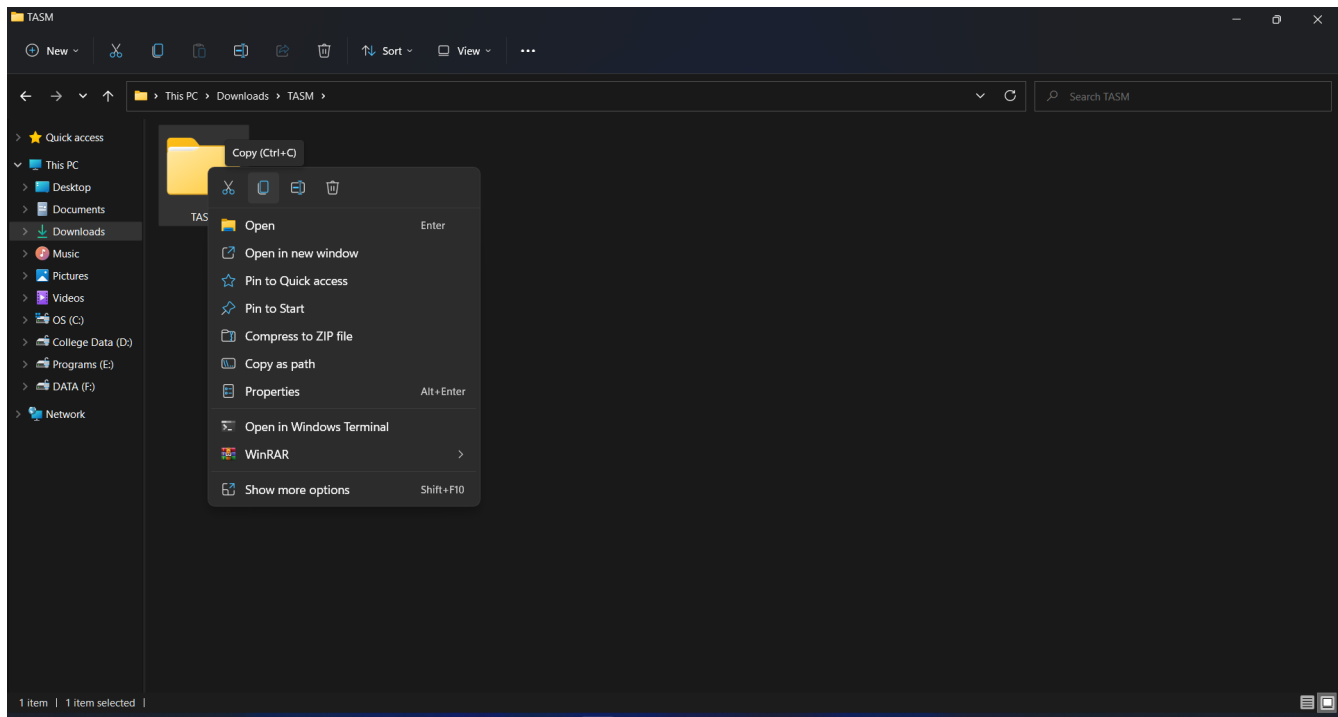
Step 2 - Save to the desired location on your computer.



Step 3 - Extract the zip file to the desired location on your computer.



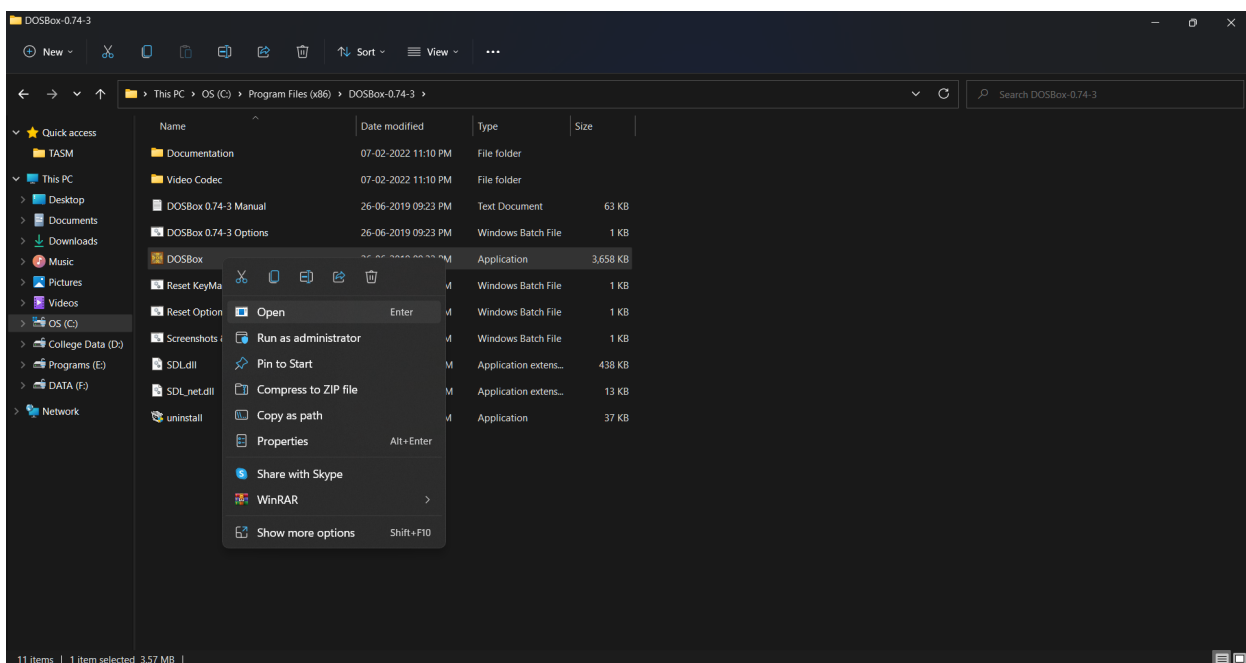
Step 4 - Then copy the extracted folder named TASM to the 'C' drive of your computer.



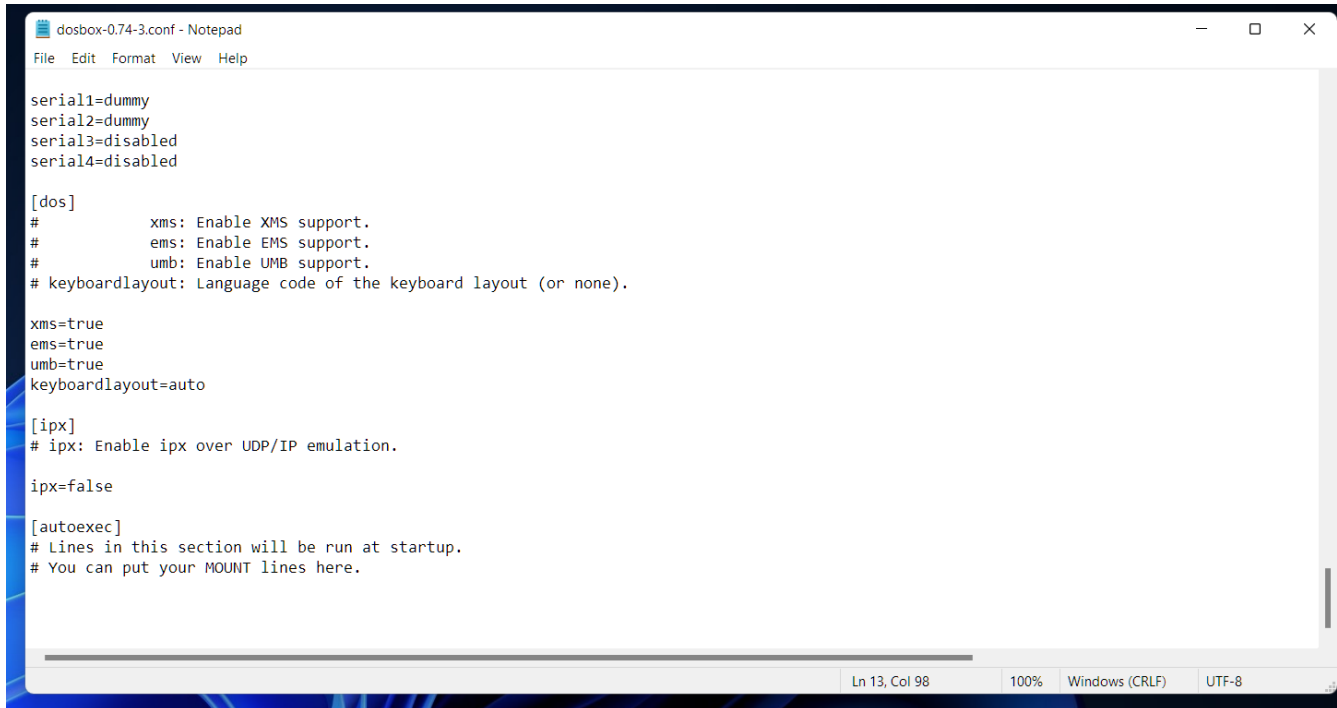
Step 5 - Now we have to mount our C drive to DosBox so that we can use our TASM libraries there. To do that go to the following path on your PC.

C:\Program Files (x86) \DOSBOX-0.74-3

Step 6 - Then there you will see a file named “DOSBOX 0.74 Options” click on it to open.



Step 7 - It will open a text file in the notepad. Then navigate to the last line of that file where it shows “# You can put your MOUNT lines here”.



```
dosbox-0.74-3.conf - Notepad
File Edit Format View Help

serial1=dummy
serial2=dummy
serial3=disabled
serial4=disabled

[dos]
#           xms: Enable XMS support.
#           ems: Enable EMS support.
#           umb: Enable UMB support.
# keyboardlayout: Language code of the keyboard layout (or none).

xms=true
ems=true
umb=true
keyboardlayout=auto

[ipx]
# ipx: Enable ipx over UDP/IP emulation.

ipx=false

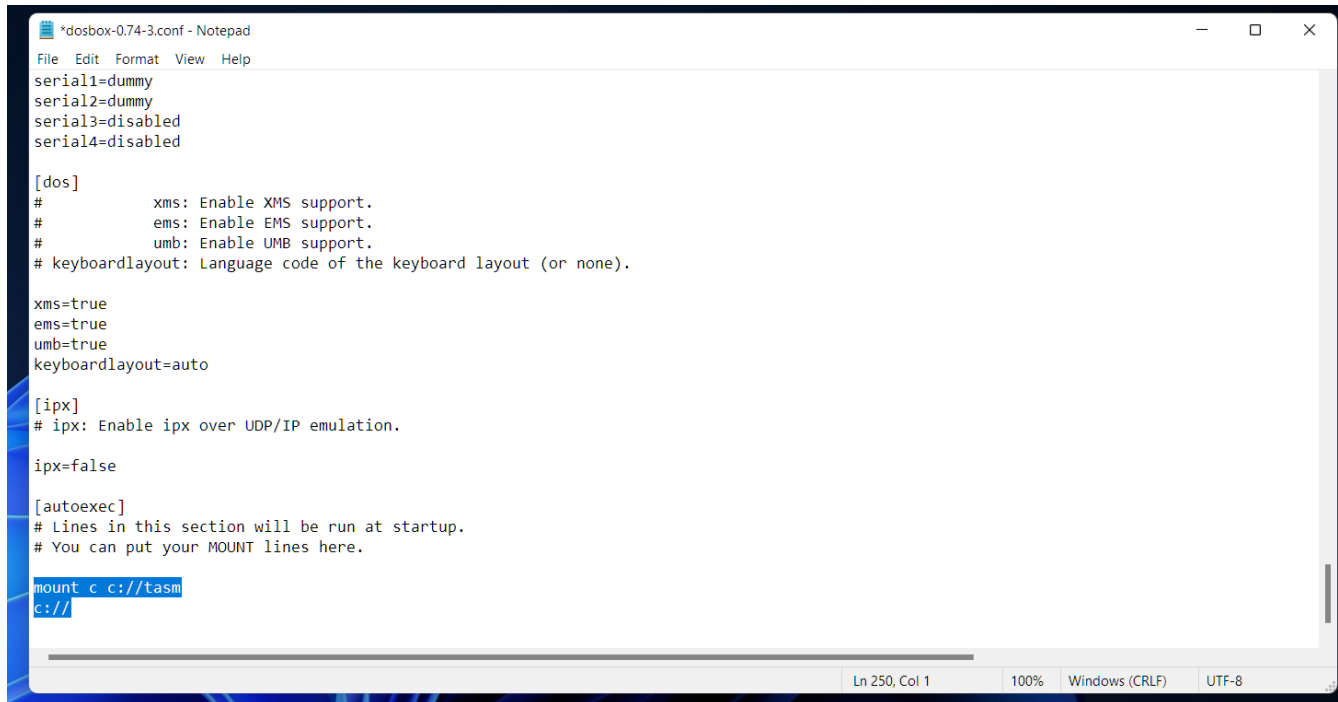
[autoexec]
# Lines in this section will be run at startup.
# You can put your MOUNT lines here.
```

Ln 13, Col 98 100% Windows (CRLF) UTF-8

Step 8 - Add the following lines after that.

mount c c://tasm

c://



```
*dosbox-0.74-3.conf - Notepad
File Edit Format View Help
serial1=dummy
serial2=dummy
serial3=disabled
serial4=disabled

[dos]
#       xms: Enable XMS support.
#       ems: Enable EMS support.
#       umb: Enable UMB support.
# keyboardlayout: Language code of the keyboard layout (or none).

xms=true
ems=true
umb=true
keyboardlayout=auto

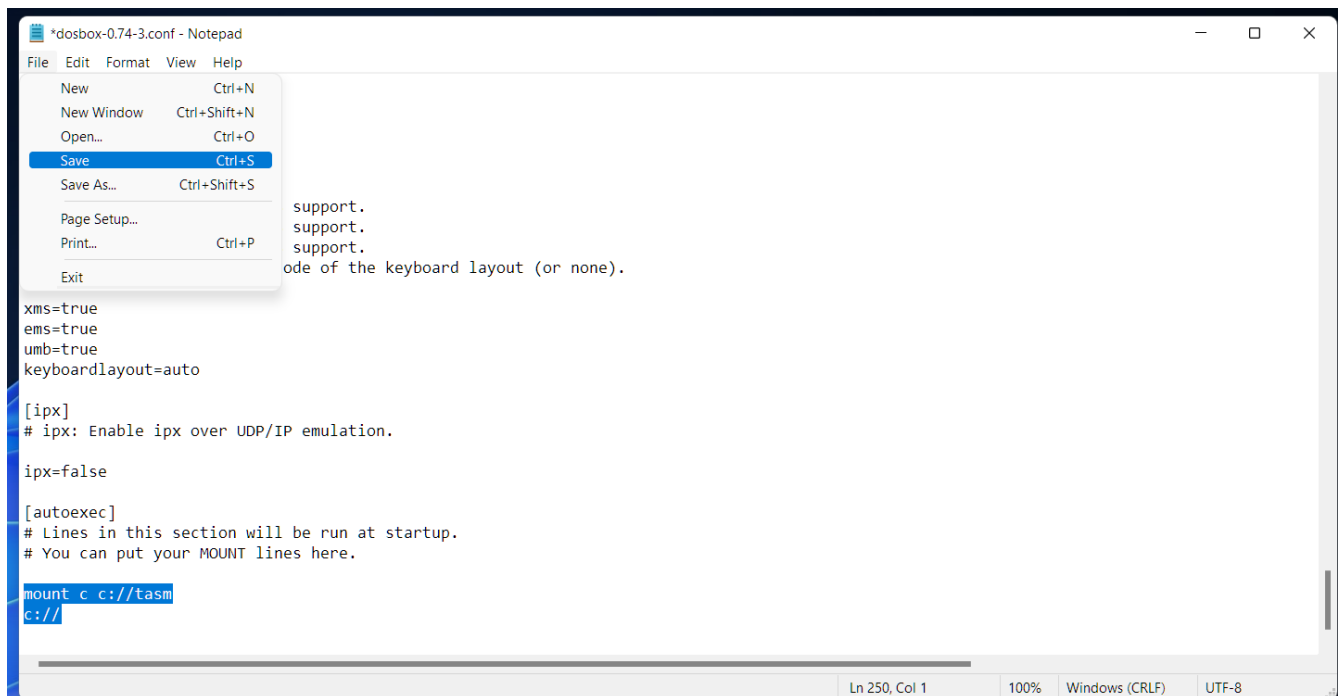
[ipx]
# ipx: Enable ipx over UDP/IP emulation.

ipx=false

[autoexec]
# Lines in this section will be run at startup.
# You can put your MOUNT lines here.

mount c c://tasm
c://
```

Step 9 - Save the file.



```
*dosbox-0.74-3.conf - Notepad
File Edit Format View Help
New          Ctrl+N
New Window   Ctrl+Shift+N
Open...      Ctrl+O
Save         Ctrl+S
Save As...   Ctrl+Shift+S
Page Setup...
Print...     Ctrl+P
Exit

support.
support.
support.
ode of the keyboard layout (or none).

xms=true
ems=true
umb=true
keyboardlayout=auto

[ipx]
# ipx: Enable ipx over UDP/IP emulation.

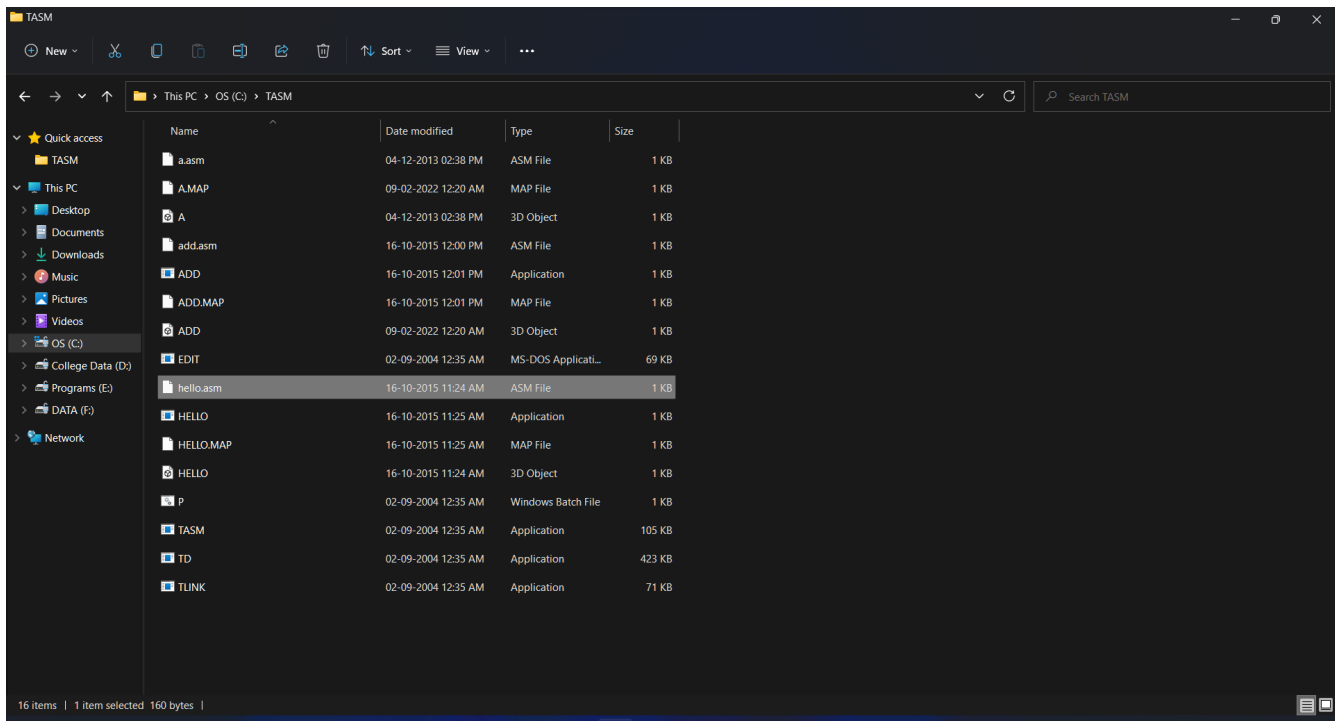
ipx=false

[autoexec]
# Lines in this section will be run at startup.
# You can put your MOUNT lines here.

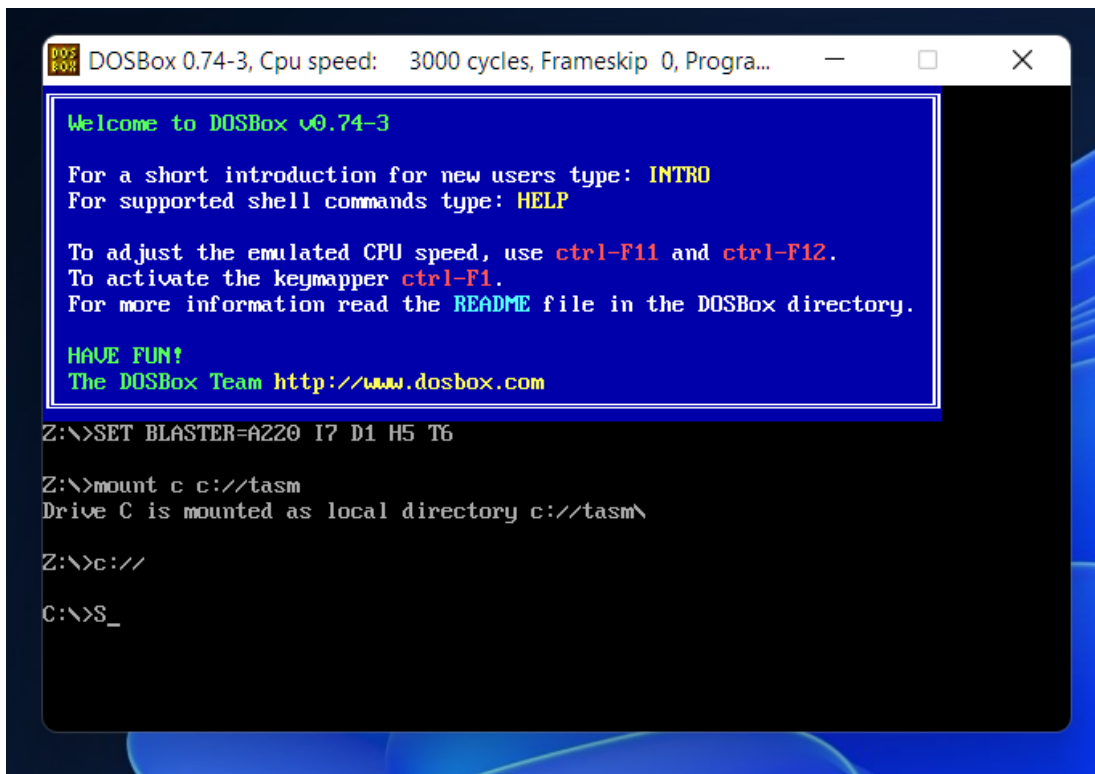
mount c c://tasm
c://
```

Step 10 - You have successfully mounted TASM with DOSBox.

Step 11- To check , copy your program to the TASM folder.



Step 12 - Now open DOSBox to see the directory which is mounted.



B. Features of TASM.

- It runs on and produces code for 16- or 32-bit x86 MS-DOS and is compatible with Microsoft Windows. It can be used with other language products such as Turbo Pascal, Turbo Basic, Turbo C, and Turbo C++. The Turbo Assembler package is bundled with Turbo Linker and is interoperable with Turbo Debugger.
- TASM itself is a 16-bit program. It will run on 16- and 32-bit versions of Windows, and produce code for the same versions, but it does not generate 64-bit x86 code.
- It also has features such as forward referencing, MASM compatibility, and an *Ideal* mode. Turbo Assembler (**tasm**) is a command-line assembler that produces object files (**.obj**) from your assembly source code (**.asm**).

Conclusion:

We have understood how to install TASM software and successfully installed it on our machine.