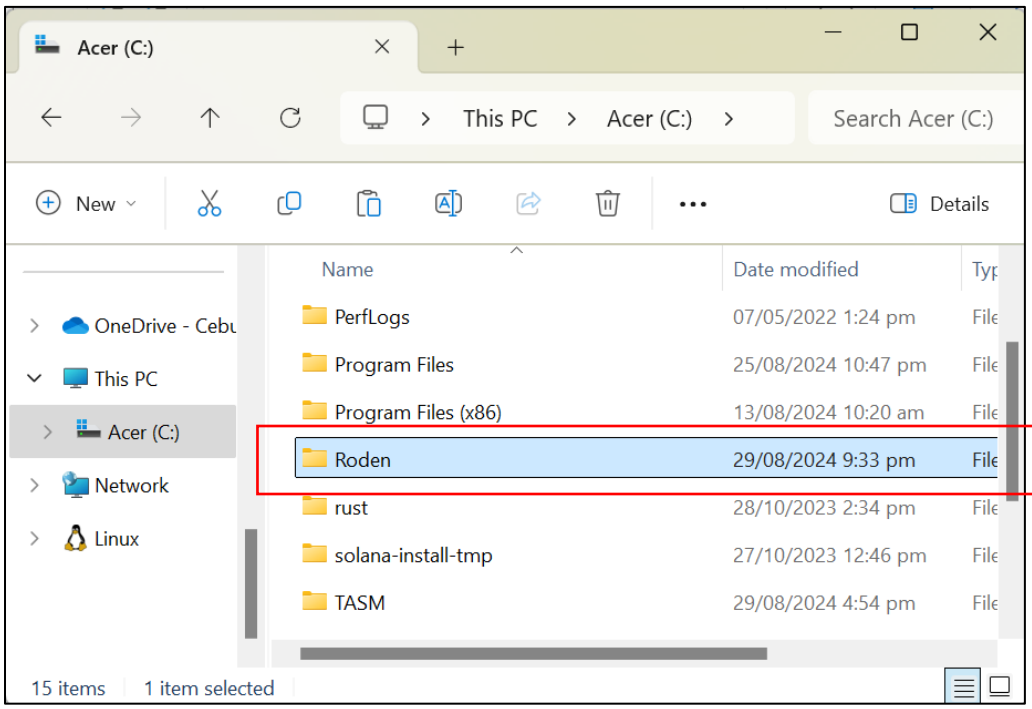
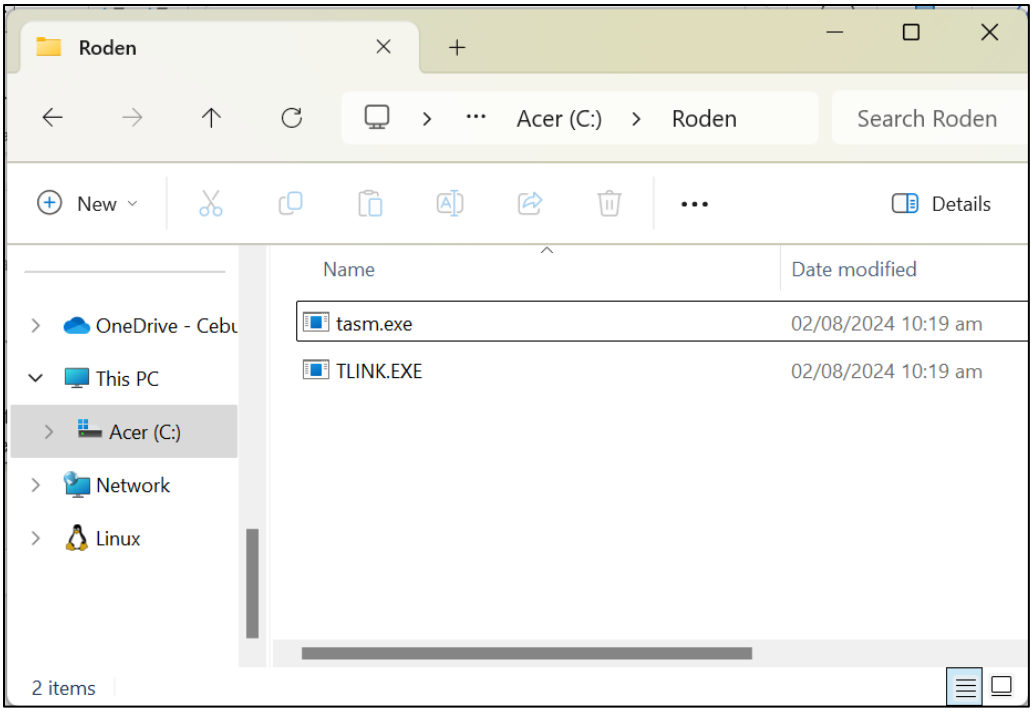
CS243 Computer Organization and Architecture
Laboratory: Assembly Language Programming
Instructor: Mr. Roden Jurado Ugang
How to do TASM Assembly Language programming using DOS Box and Notepad

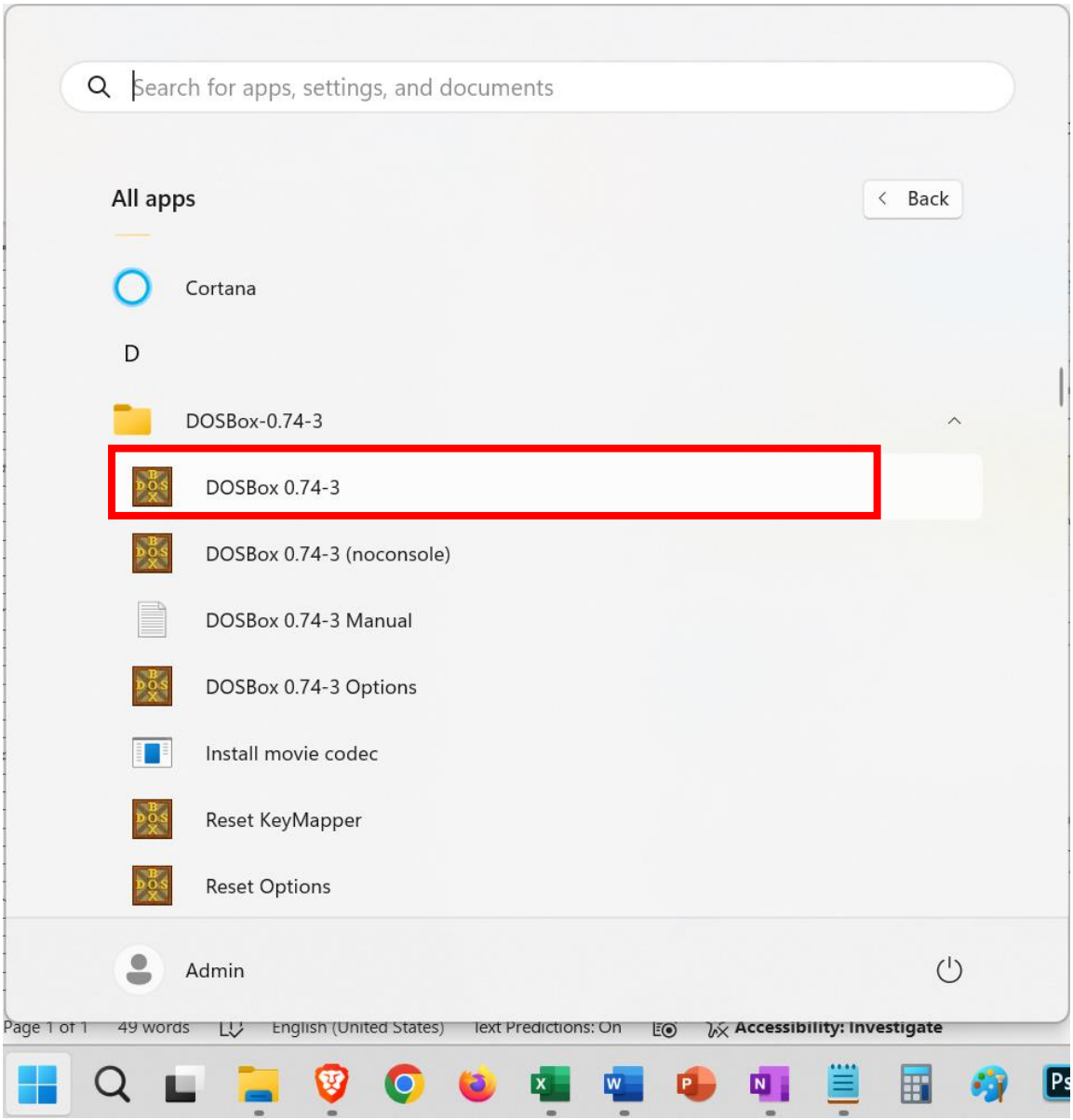
1. Create a local folder in Drive C. You may use any folder name, with 8 or less characters. For example: **Roden**



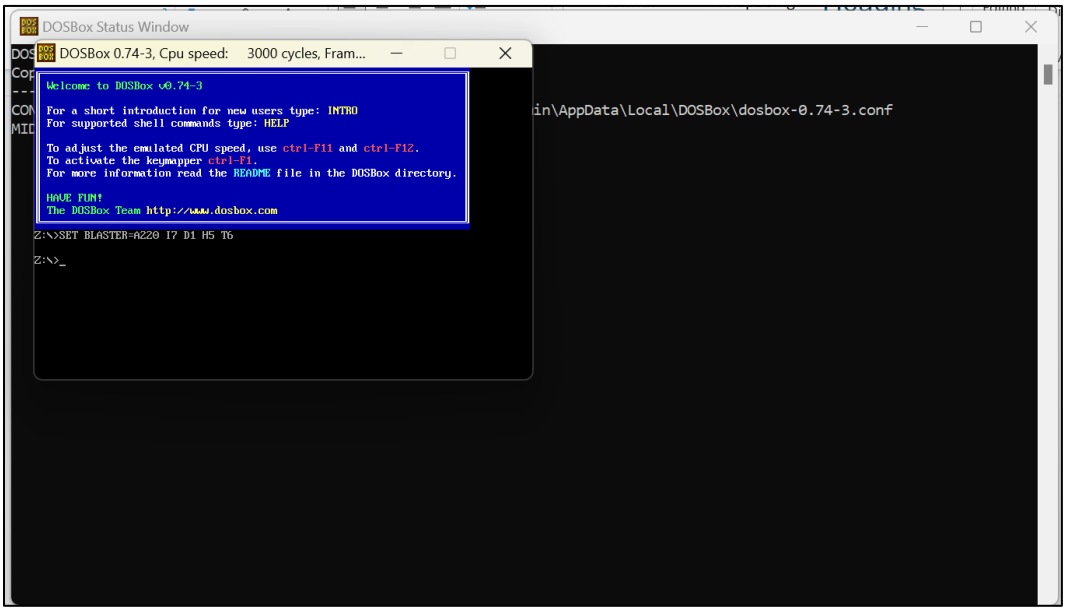
2. Open your folder and put the TASM.EXE and TLINK.EXE, as well as the other files from our Teams, inside it.



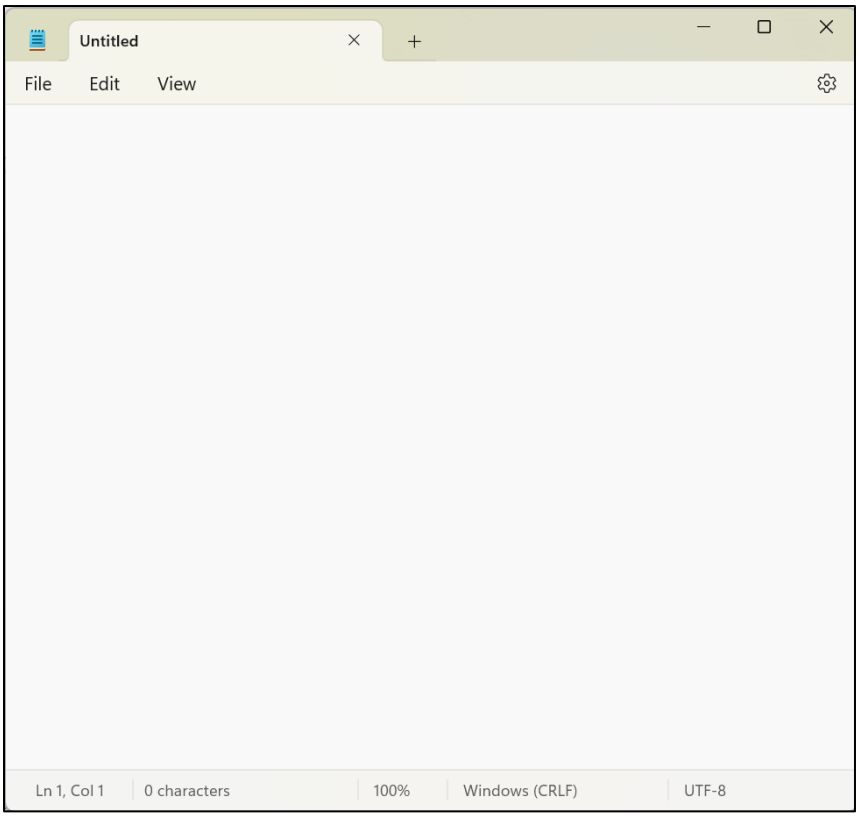
3. Run DOS Box. If not yet installed, download and install DOS Box from this site: https://sourceforge.net/projects/dosbox/files/dosbox/0.74-3/DOSBox0.74-3-win32-installer.exe/download



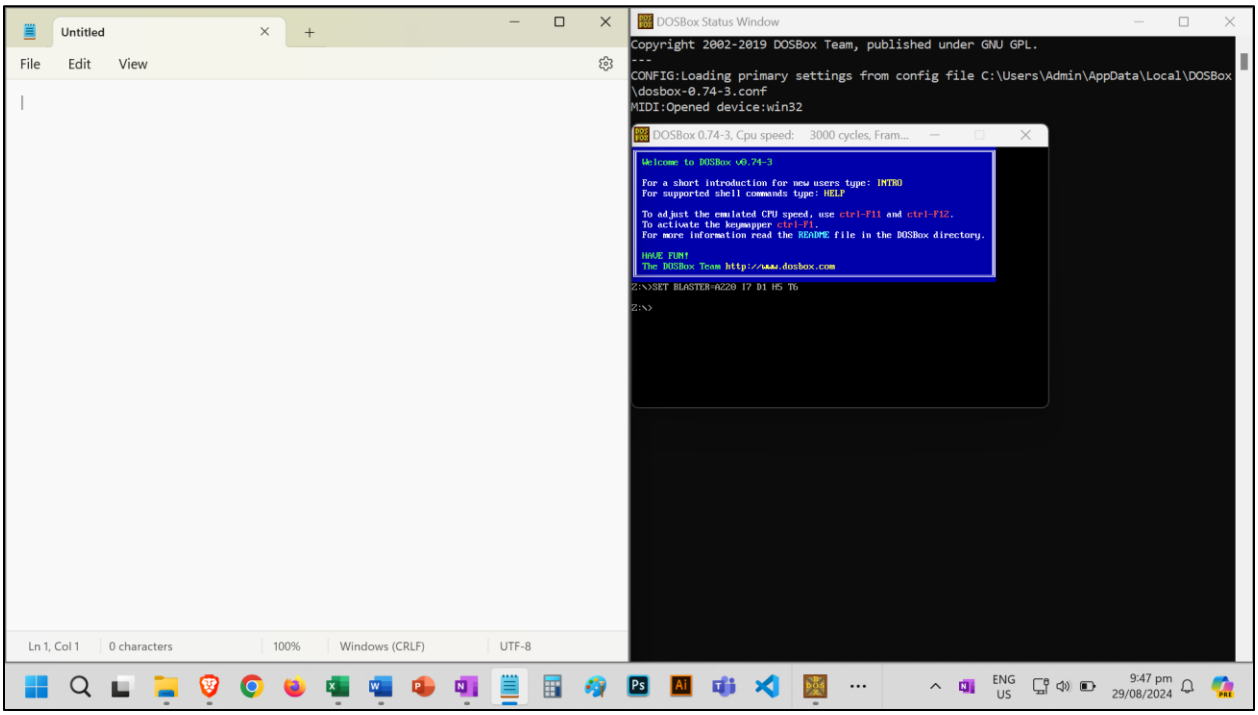
4. Once DOS Box is running, it will look like this:



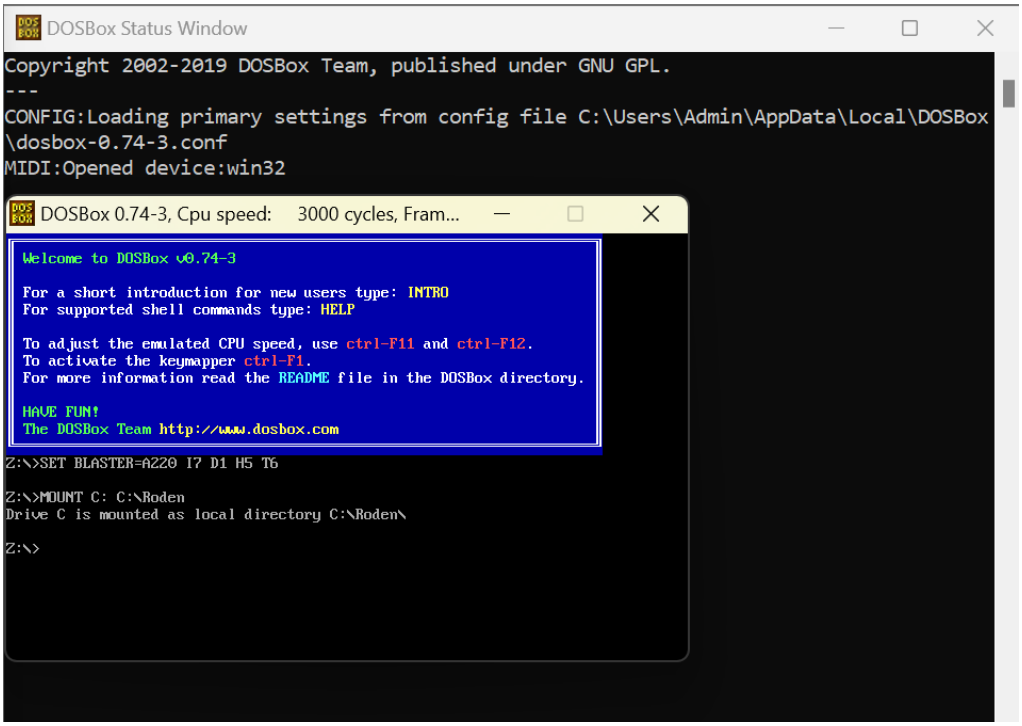
5. Open a new and empty Notepad file to type in your Assembly Language code.



6. Arrange Notepad and DOS Box windows such that they are side-by-side.

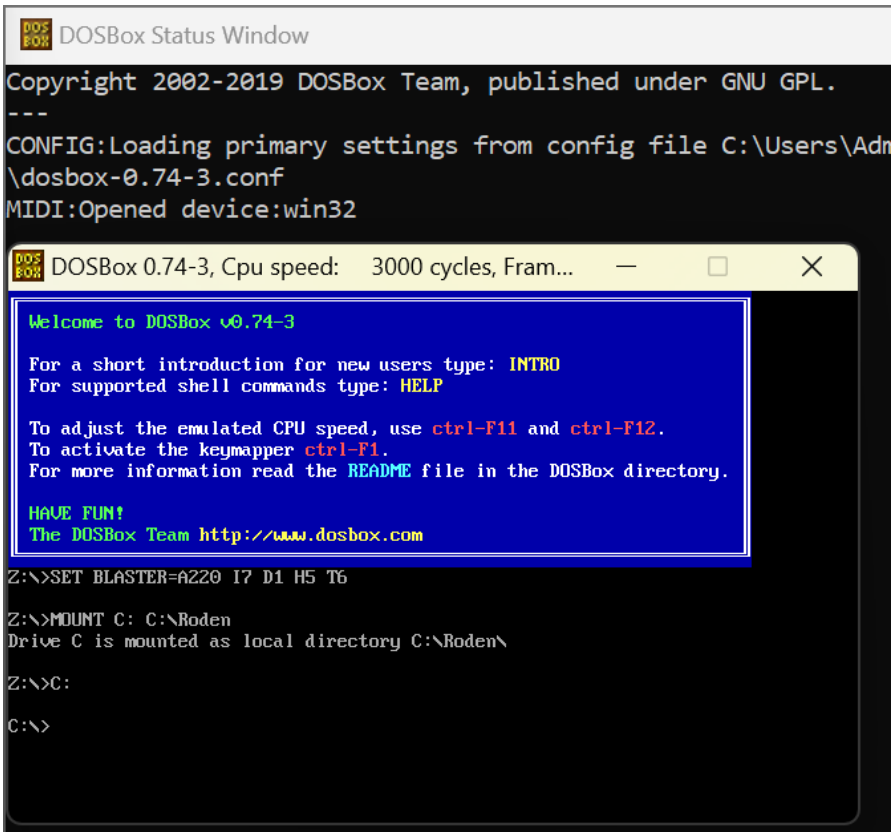


7. Mount your Drive C folder in DOS Box. This assigns a short cut drive letter to your Drive C folder. Type in the Z:\> prompt:
   Z:\>**MOUNT C: C:\Roden**

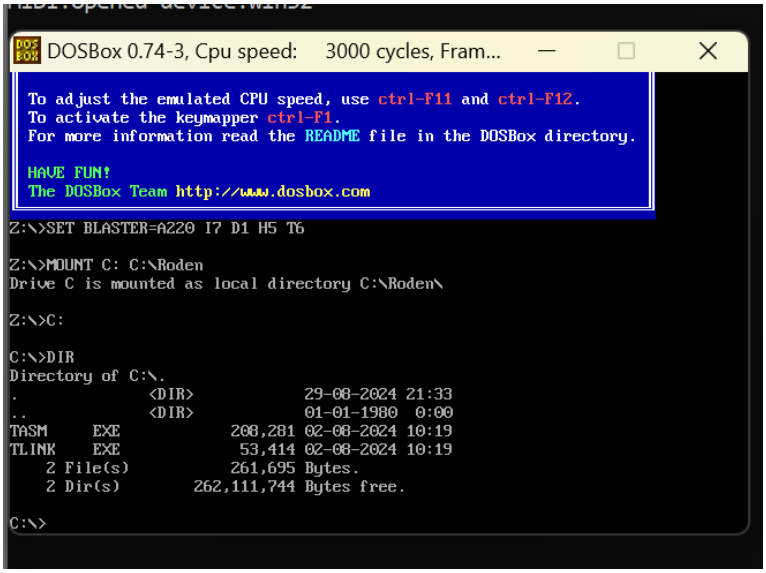


If successfully mounted, it will display: **Drive C is mounted as local directory C:\Roden**

8. Change drive from Z to C. Type in Z:\> prompt then press Enter key:
   Z:\>**C:**

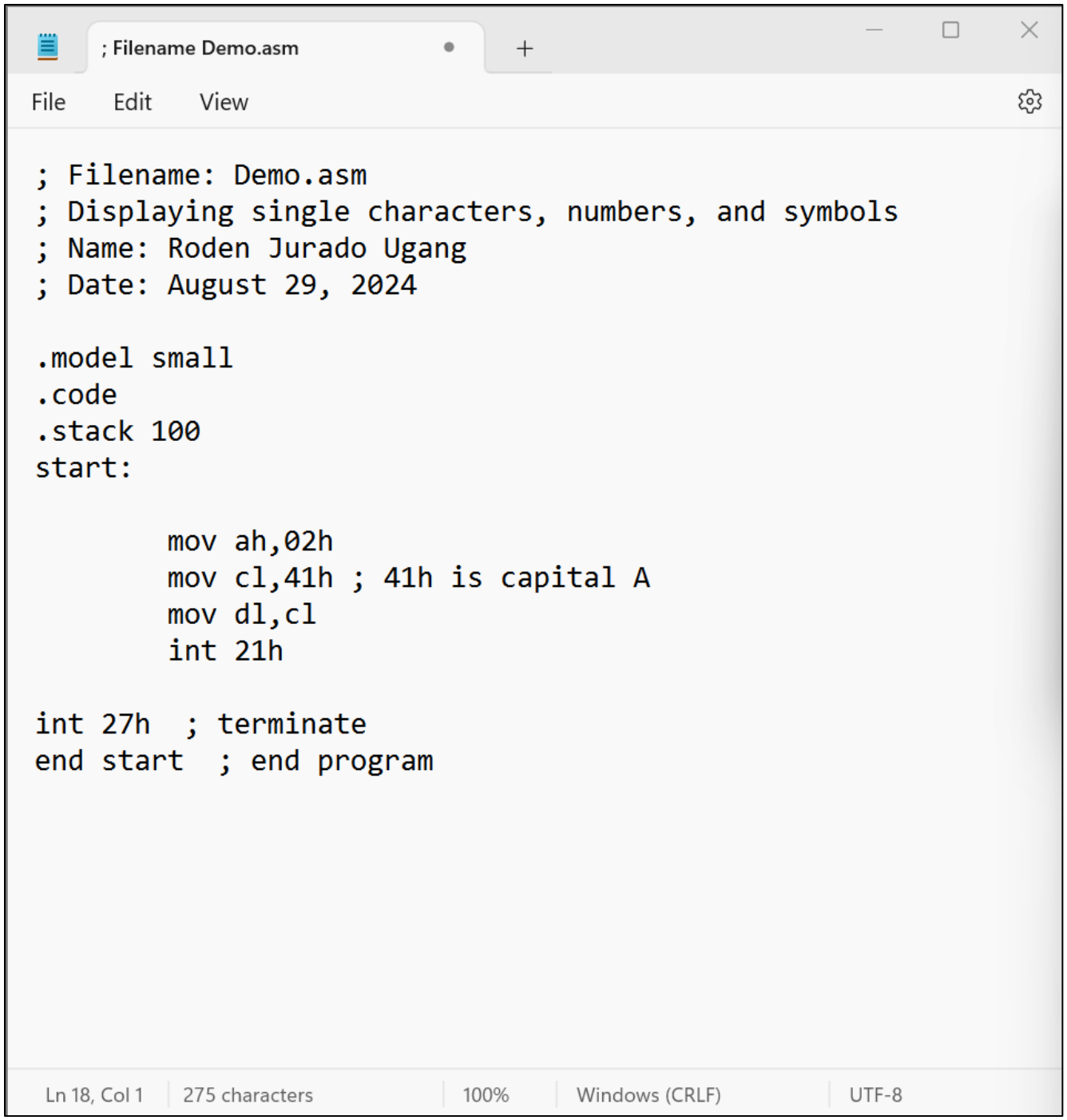


9. Check contents of drive C by typing DIR then press Enter key.
   C:\>**DIR**

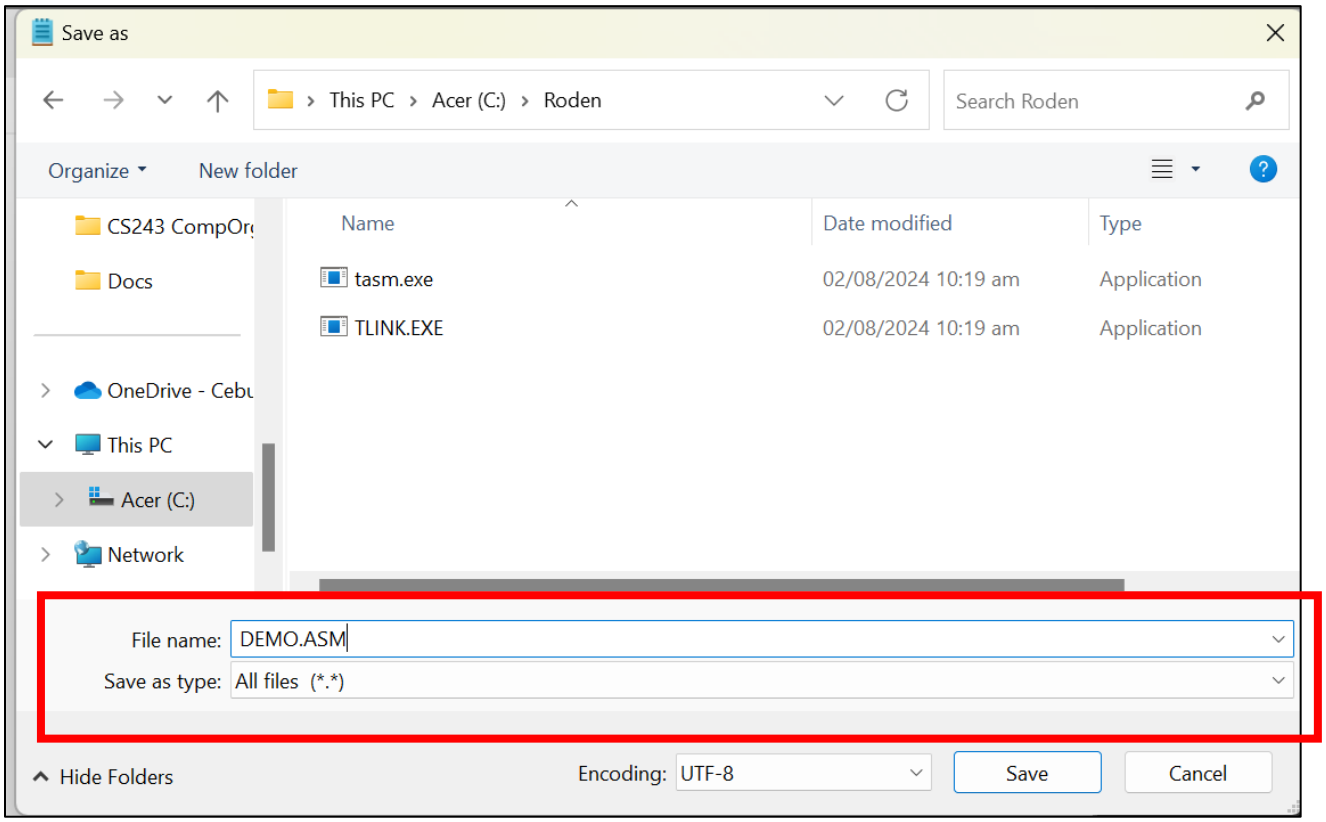


You should see the TASM.EXE and TLINK.EXE files, as well as other files.

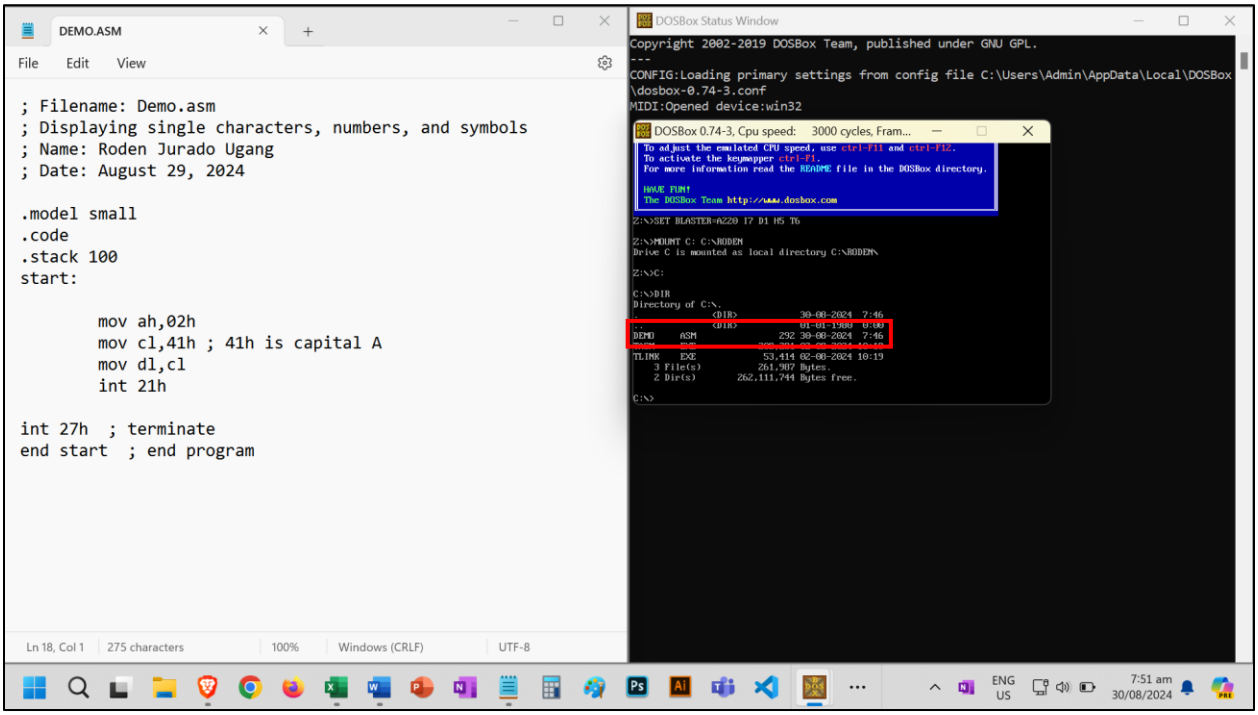
10. Type in your Assembly Language code in Notepad.



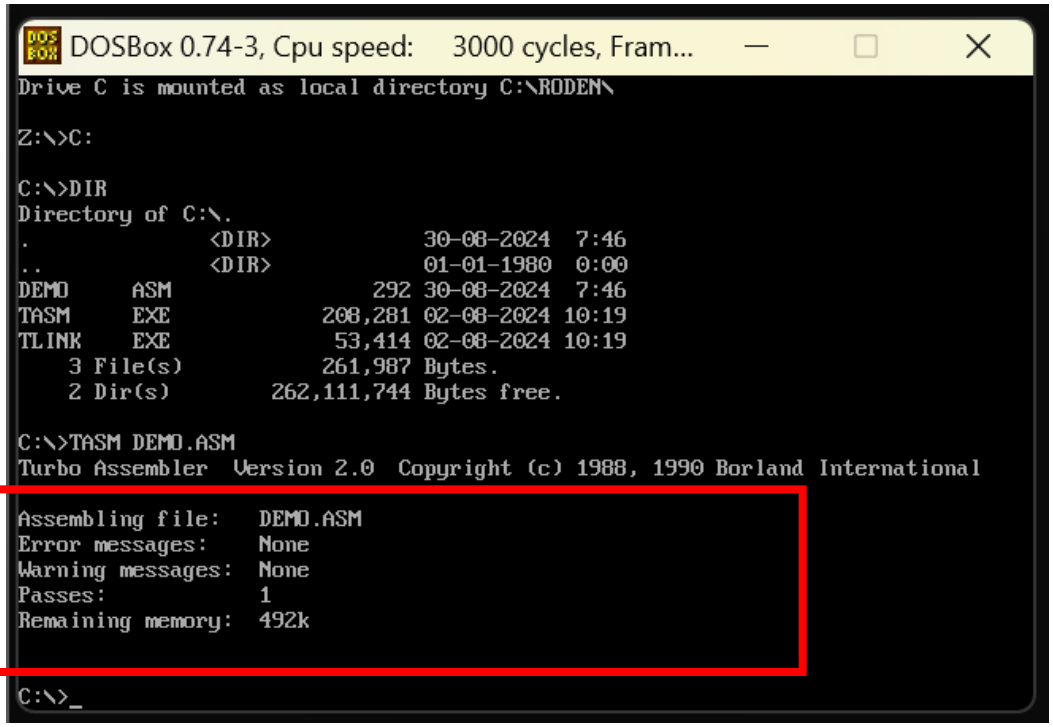
11. Save your file with a filename extension of .ASM. Example: **DEMO.ASM**. Make sure to choose "**All files (*.*)**" in the **Save as type:** box. Save your ASM file in the same folder containing the TASM.EXE and TLINK.EXE files.



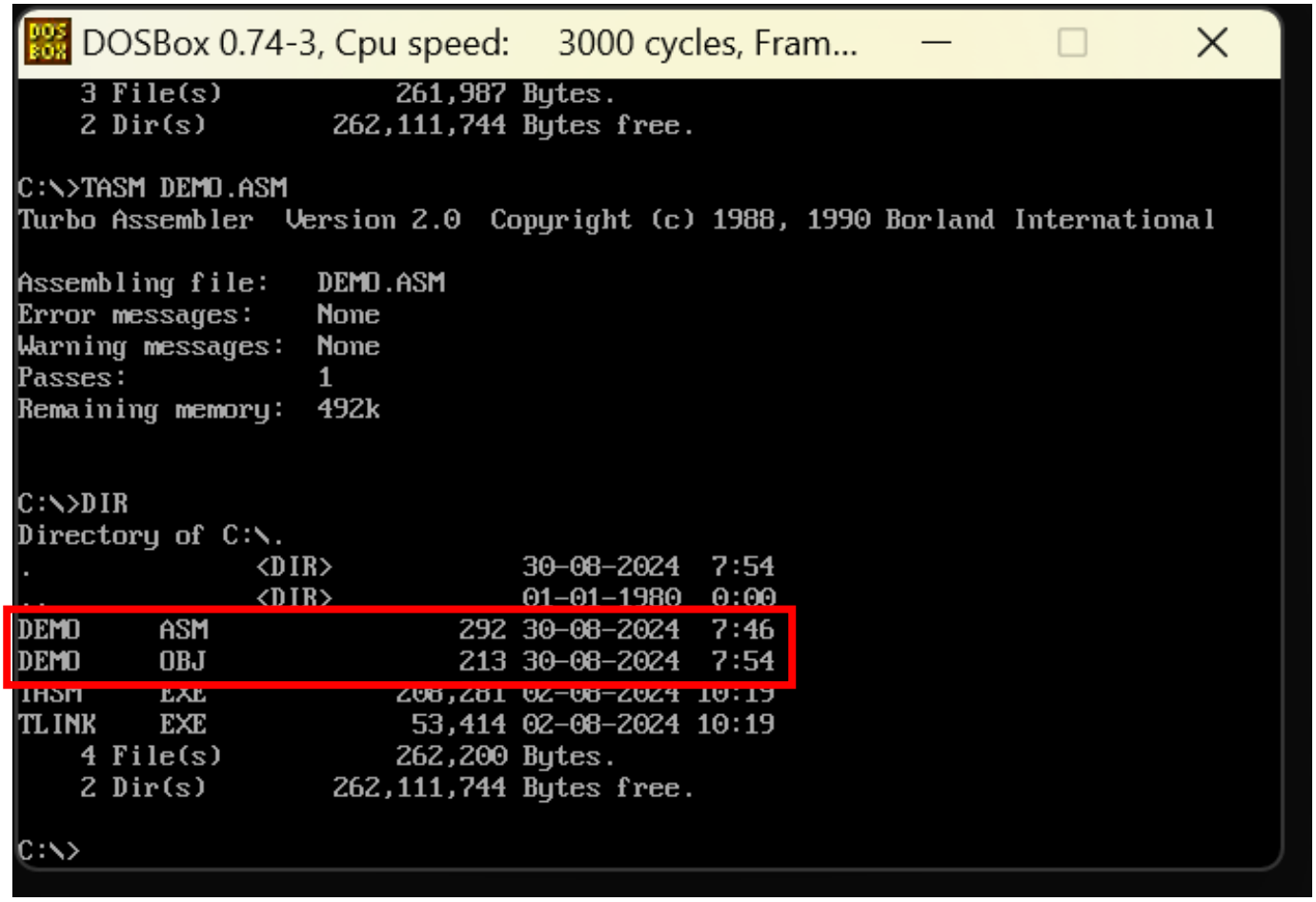
12. After saving your Assembly Language code, your screen should be looking something like the one below. If you make a DIR in DOS Box, you should see your DEMO.ASM listed together with TASM.EXE and TLINK.EXE.



13. To compile or assemble your Assembly Language code, type in the C:\> prompt, then press Enter:
C:\>**TASM DEMO.ASM**

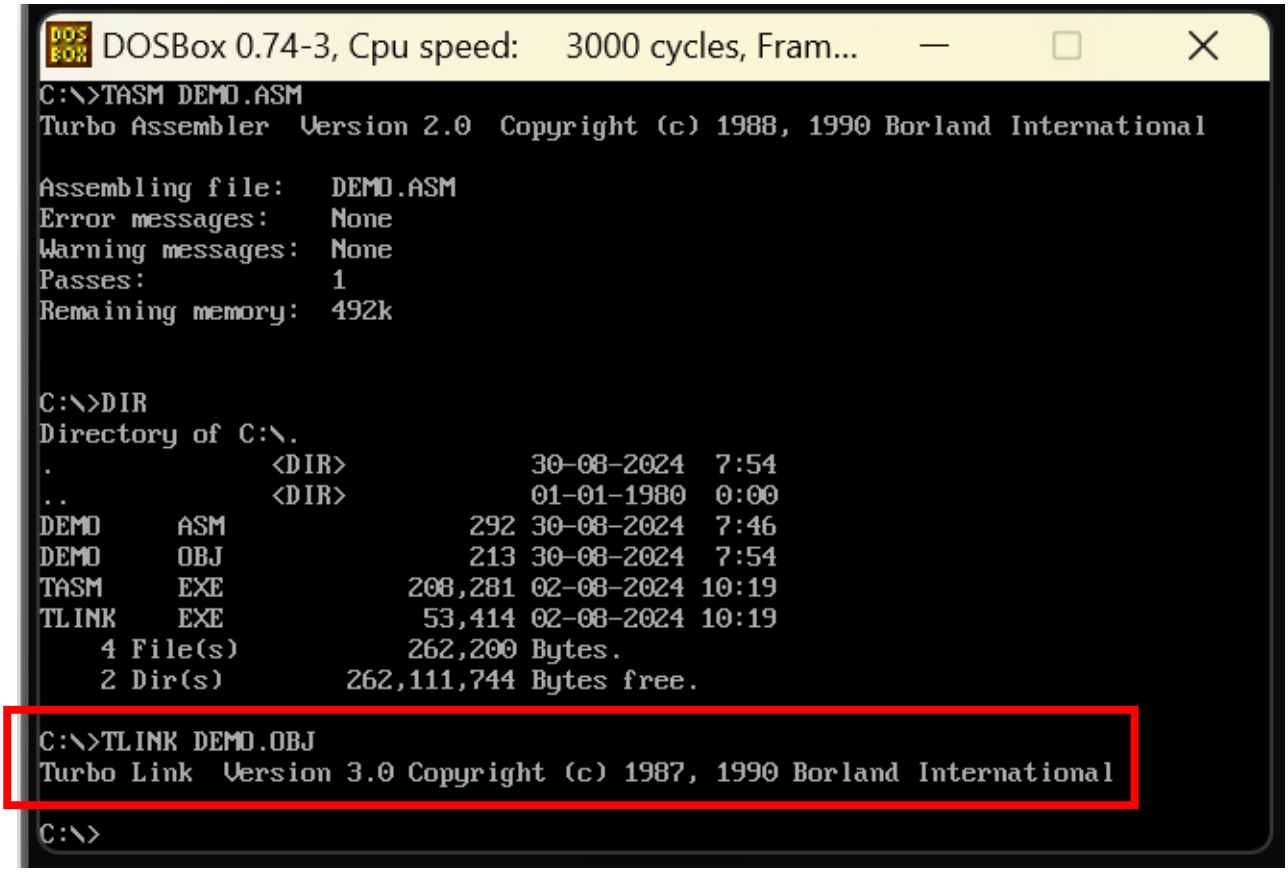


You should see the compilation or assembly result, like the one above. If “Error messages:” is None, then you have successfully compiled or assembled your Assembly Language code. The compilation or assembly process produces an object file, like DEMO.OBJ. If you type DIR in DOS Box, you should see the DEMO.OBJ listed, like the one below. Now you have produced 2 files, DEMO.ASM and DEMO.OBJ.



14. The next step is to produce an executable file by running the TLINK.EXE program. You must use the DEMO.OBJ (NOT the DEMO.ASM) with the TLINK.EXE. Type in the C:\> prompt:

    C:\>**TLINK DEMO.OBJ**

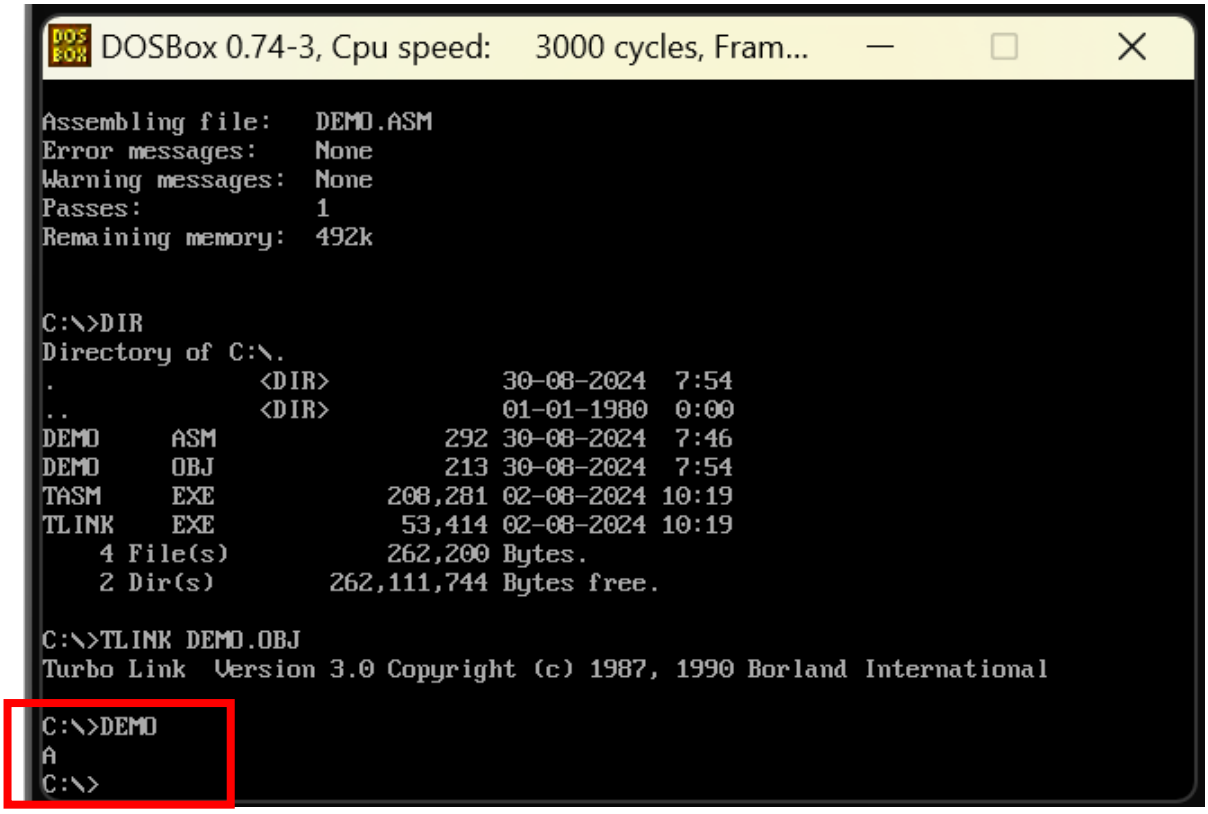


    The TLINK program links DEMO.OBJ with other needed files and libraries. If the linking process is successful, you should see the message:

    Turbo Link Version 3.0 Copyright (c) 1987, 1990 Borland International

    Now you have produced 3 files: DEMO.ASM, DEMO.OBJ, and DEMO.EXE

15. Now you can run your program by typing the filename of your Assembly Language program, without the EXE filename extension, and press Enter key. Example:
    C:\>**DEMO**



The DEMO Assembly Language program displays the capital letter A on the screen.

16. Every time you add or edit your Assembly Language source code, you need to repeat the following process:
    1) Type in the Assembly Language code in Notepad.
    2) Save the code.
    3) Compile or assemble the code by typing in C:\> prompt: C:\>**TASM DEMO.ASM** <ENTER>
    4) Link your DEMO.OBJ by typing in C:\> prompt: C:\>**TLINK DEMO.OBJ** <ENTER>
    5) Run your DEMO executable file by typing in C:\> prompt: C:\>**DEMO** <ENTER>

*****NOTHING FOLLOWS****