

# **Basic ProView Software Tutorial**

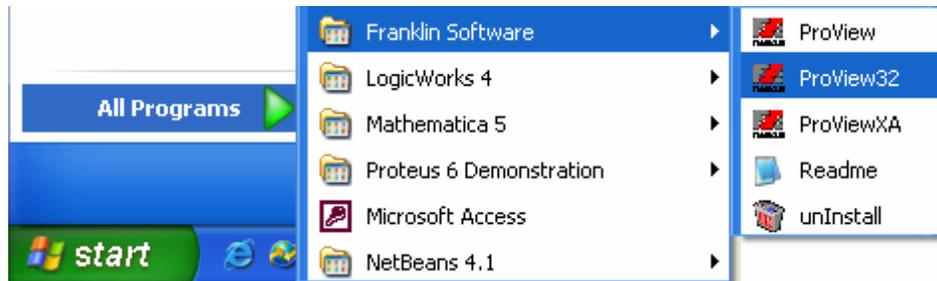
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## **Introduction**

This tutorial will teach you how to write, compile, and trace a simple program in ProView. For more information, you can see ProView's help.

## Opening ProView

1. Open the ProView from the start menu.

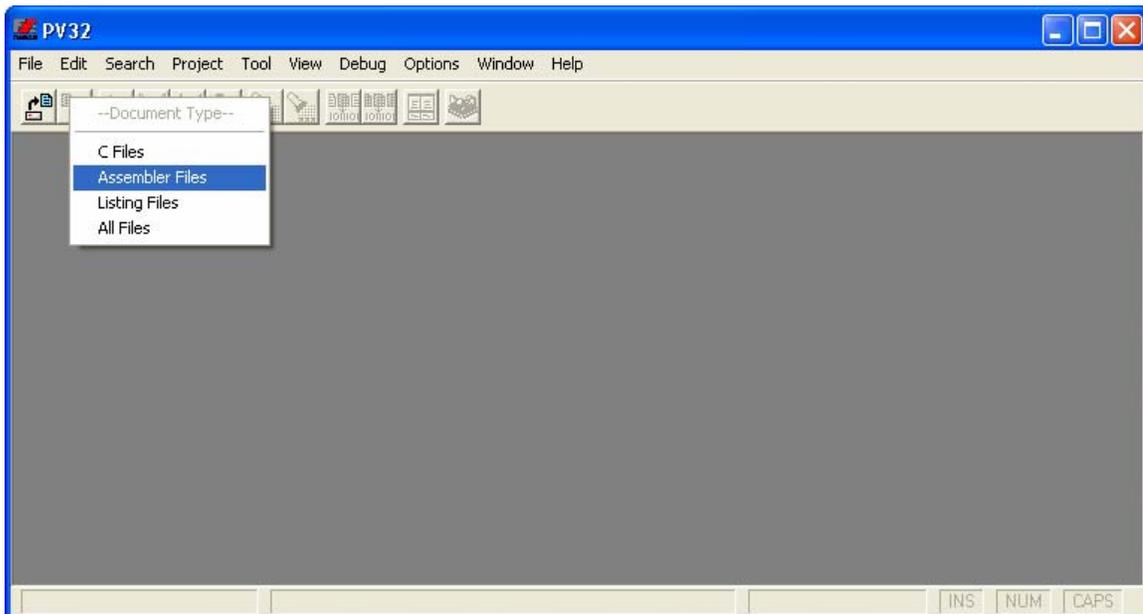


## Creating a new File

2. Select *New* from the *File* menu.



3. If you want to write your code in Assembly you should select *Assembler files*, and if you want to write you code in C, you should choose *C Files*. As we want to write the first program in assembly, choose *Assembler files*.



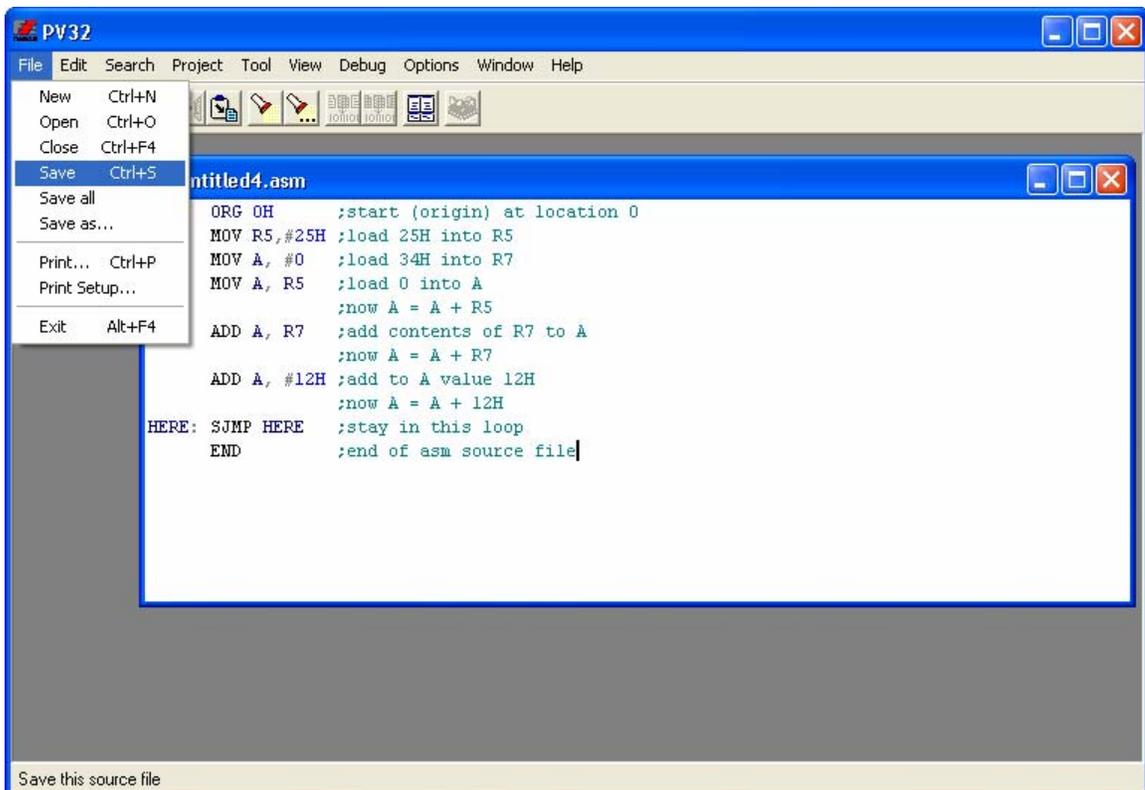
## Writing the source code

4. Write the following code. (It is copied from *The 8051 Microcontroller and Embedded Systems* written by Mazidis.)

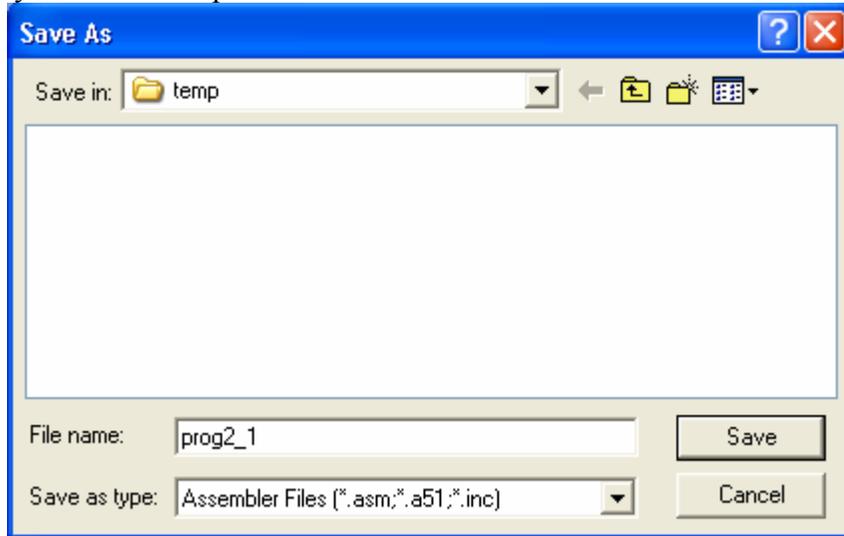
```
ORG 0H           ;start (origin) at location 0
MOV R5,#25H      ;load 25H into R5
MOV A, #0        ;load 34H into R7
MOV A, R5        ;load 0 into A
                 ;now A = A + R5
ADD A, R7        ;add contents of R7 to A
                 ;now A = A + R7
ADD A, #12H      ;add to A value 12H
                 ;now A = A + 12H
HERE: SJMP HERE  ;stay in this loop
END              ;end of asm source file
```

## Saving

5. Press **Ctrl + S** or choose **Save** from the **File** menu.

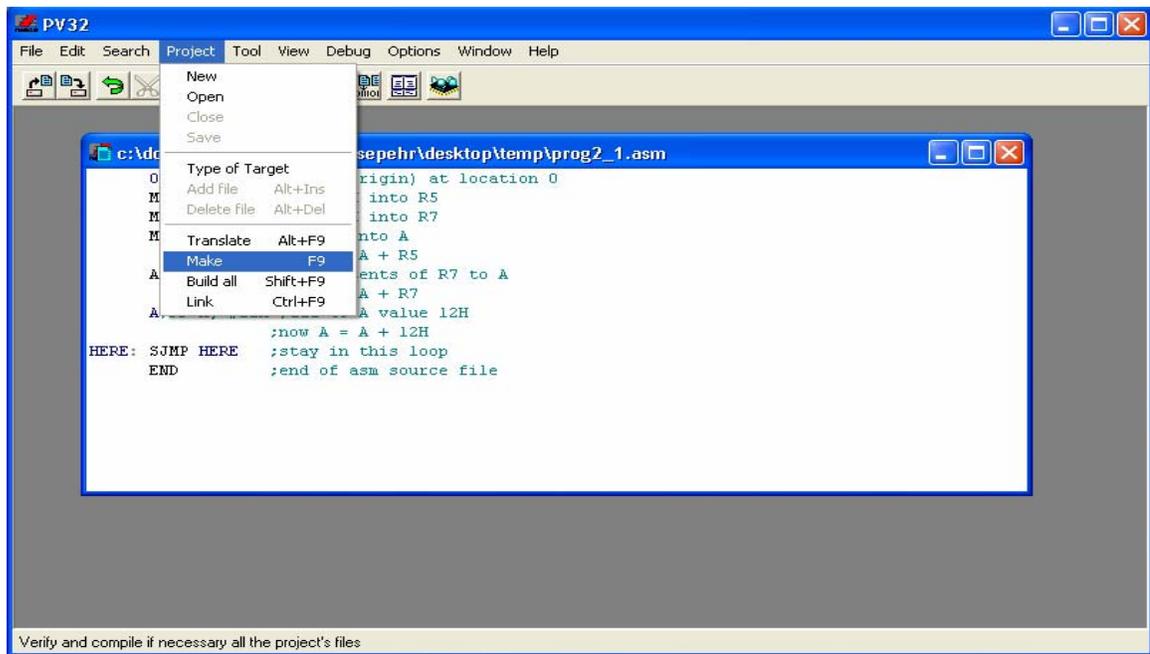


6. Name your file. Then press *Save*.



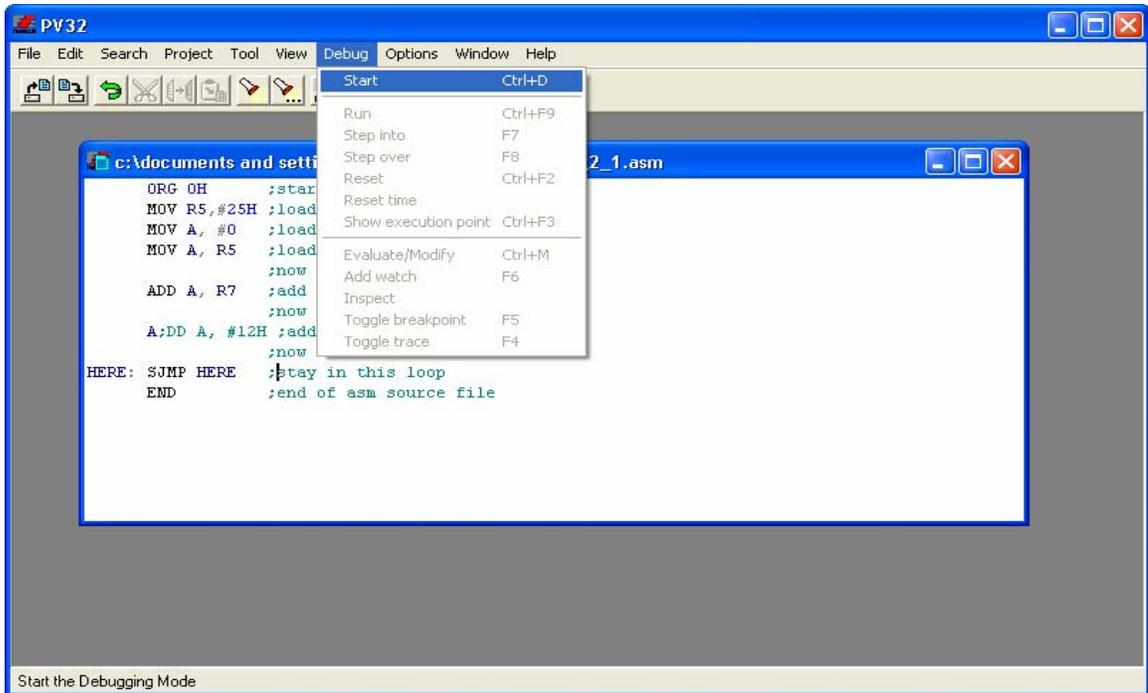
## Compiling

7. Press *F9* or select *Make* from the *Project* menu.

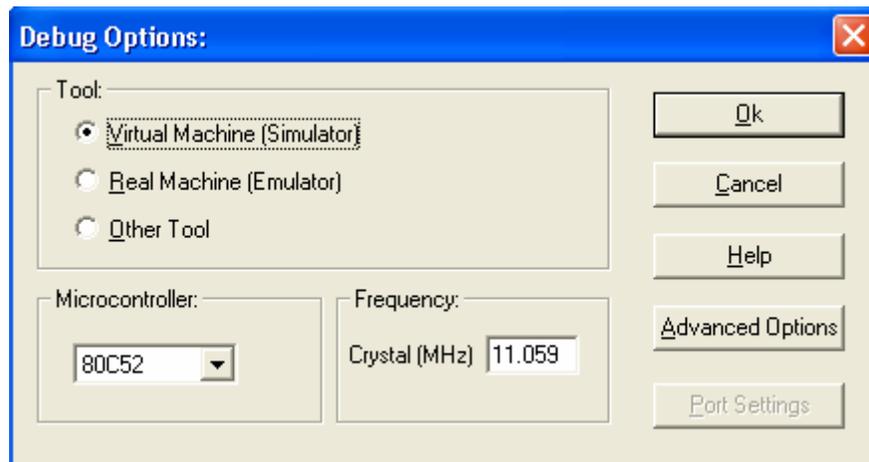


# Tracing and Debugging

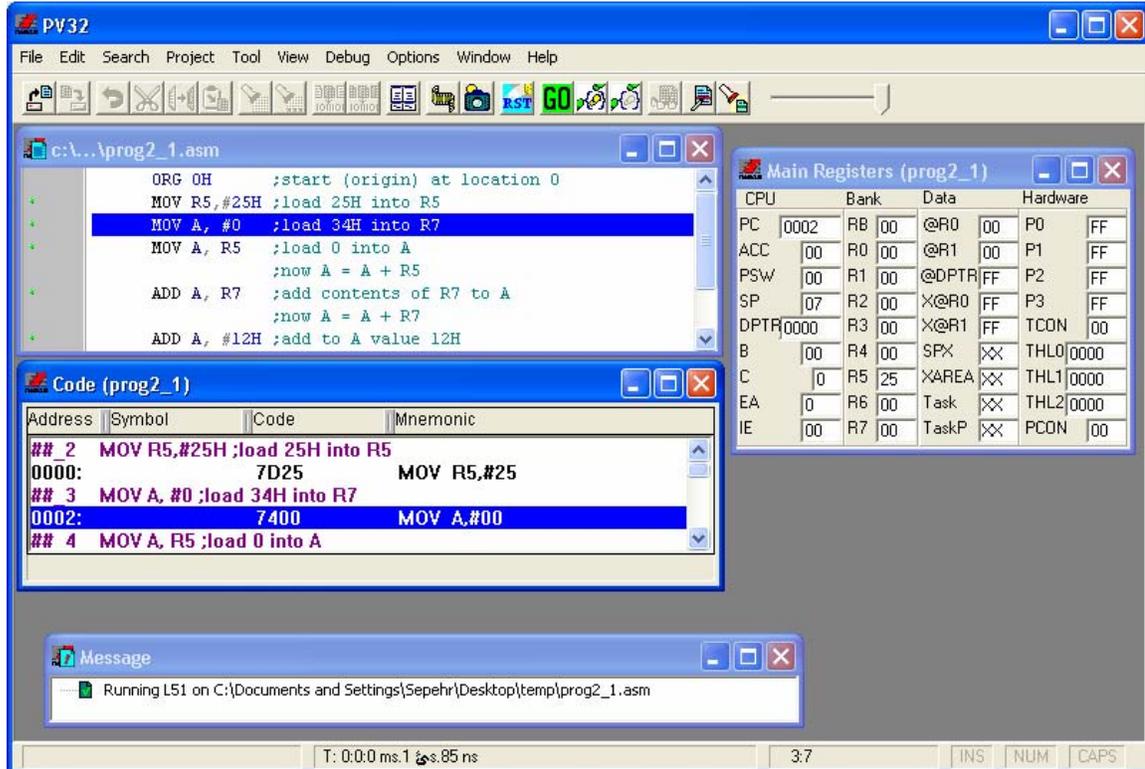
8. Press *Ctrl + D* or select *Start* from *Debug*.



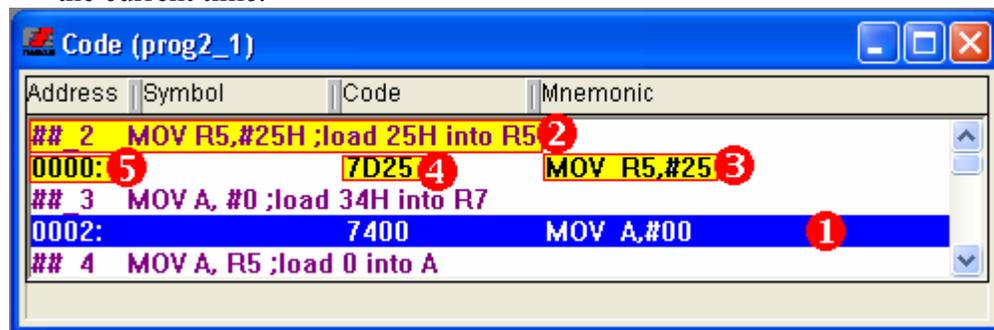
9. As it is the first time you debug the file, the following dialog appears. Press *Ok*.



10. Some new windows will be opened:

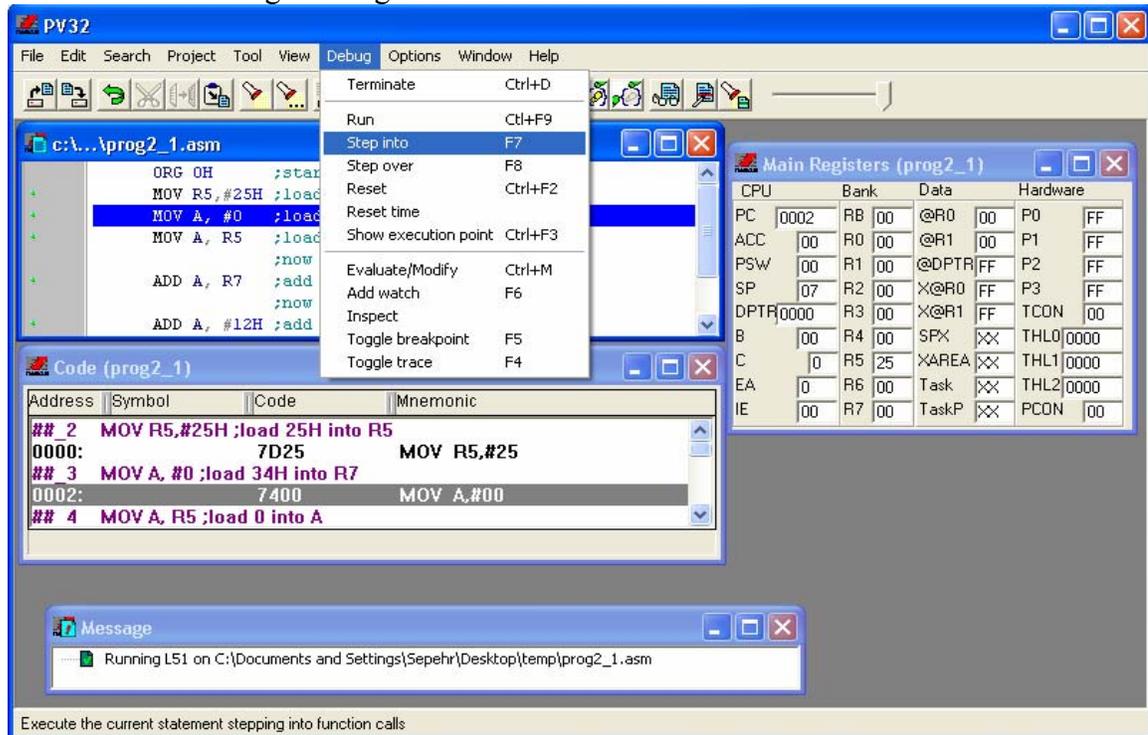


- **Main Registers:** This window shows the contents of all of the registers, at the current time.

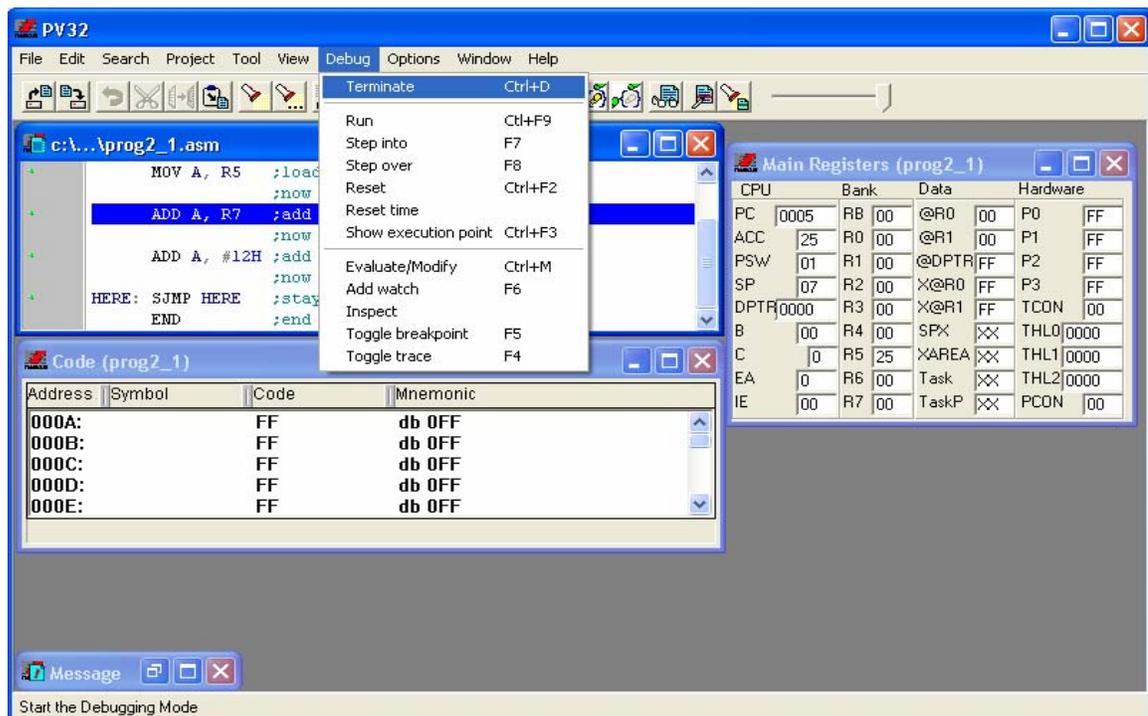


- **Code:** This window shows the contents of the flash memory. In the window:
  - 1) The blue line shows the instruction which will be executed in the next cycle.
  - 2) The violet texts represent your source code.
  - 3) The Mnemonic column represents the assembly equivalent instruction of your code. When your code is in assembly the mnemonic is the same as your code. But, when your code is in C language, it is not.
  - 4) The code column shows the machine equivalent of the instruction.
  - 5) The address column shows where the instruction is located.

- Press **F7** or select **step into** from **Debug** menu. It executes the blue instruction and updates the values of registers in **Main Registers** window. Press **F7** a few times and see the changes of registers.



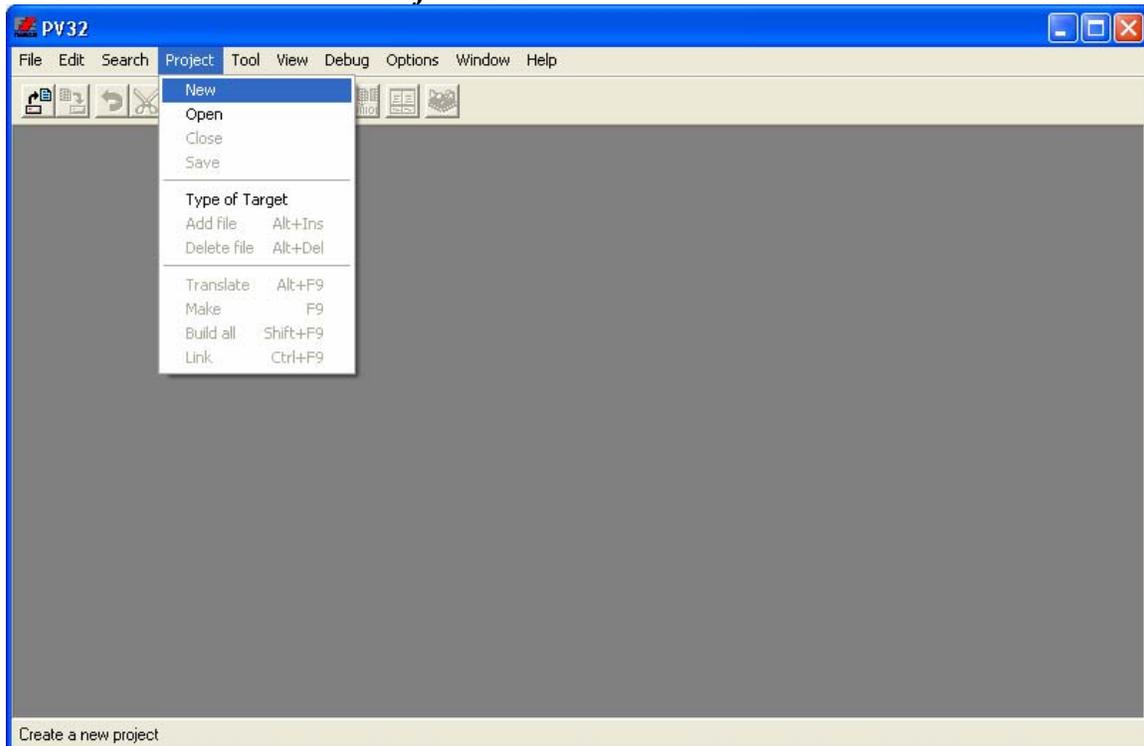
- Press **Ctrl + D** or select **Terminate** from the **Debug** menu to terminate debugging.



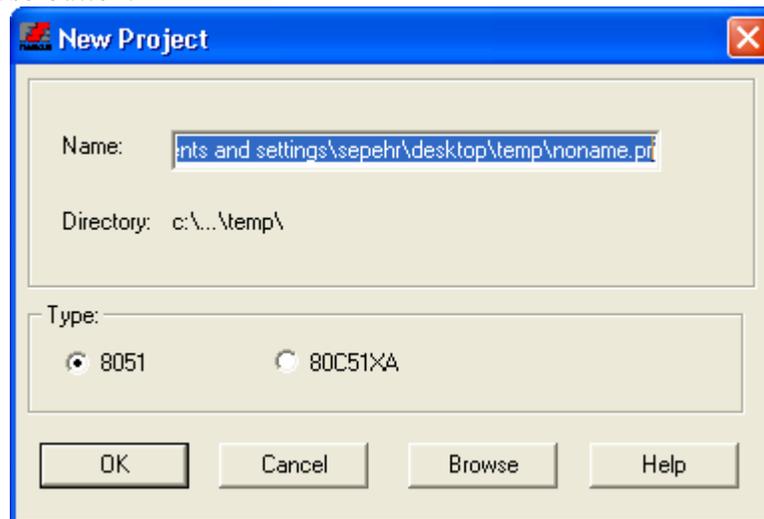
## Creating a new Project

When you write a big program, you would better, split your code into some files and put the relevant functions in the same files. To do so, you should make a new project and add your files to the project.

13. Select *New* from the *Project* menu.

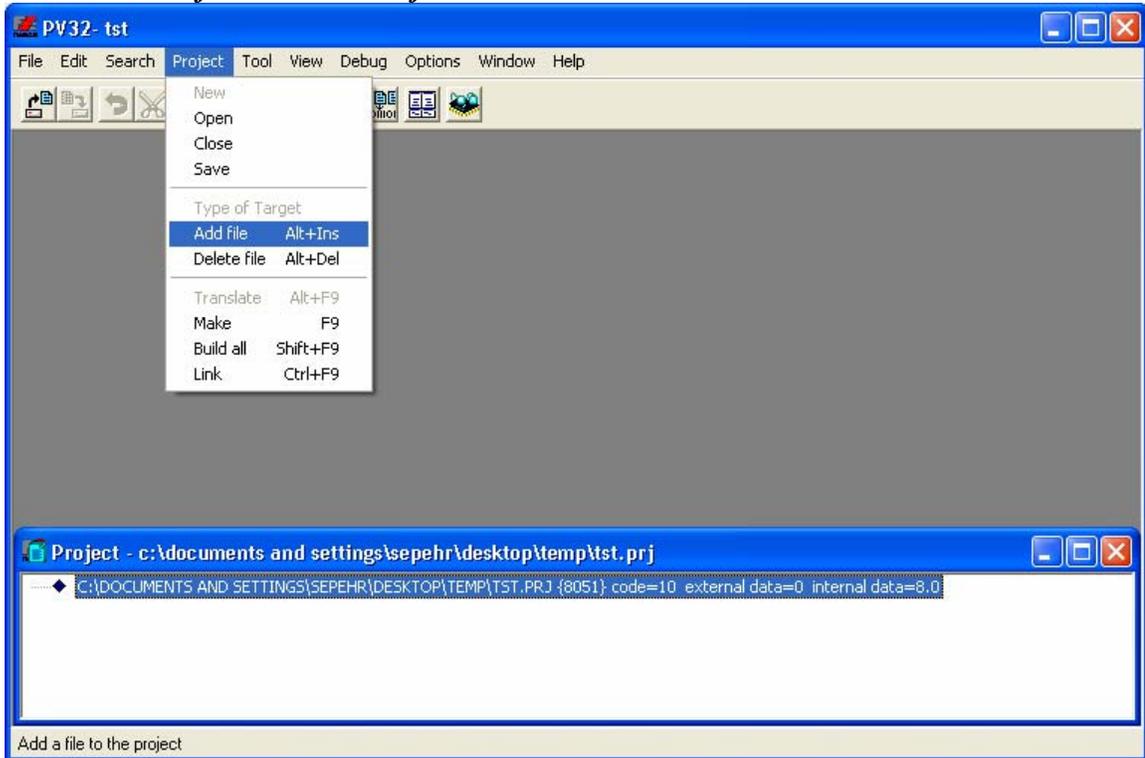


14. If you want to change the name of the project, type another name in front of *Name*. If you want to change the path, where the project file will be stored, press the *Browse* button.

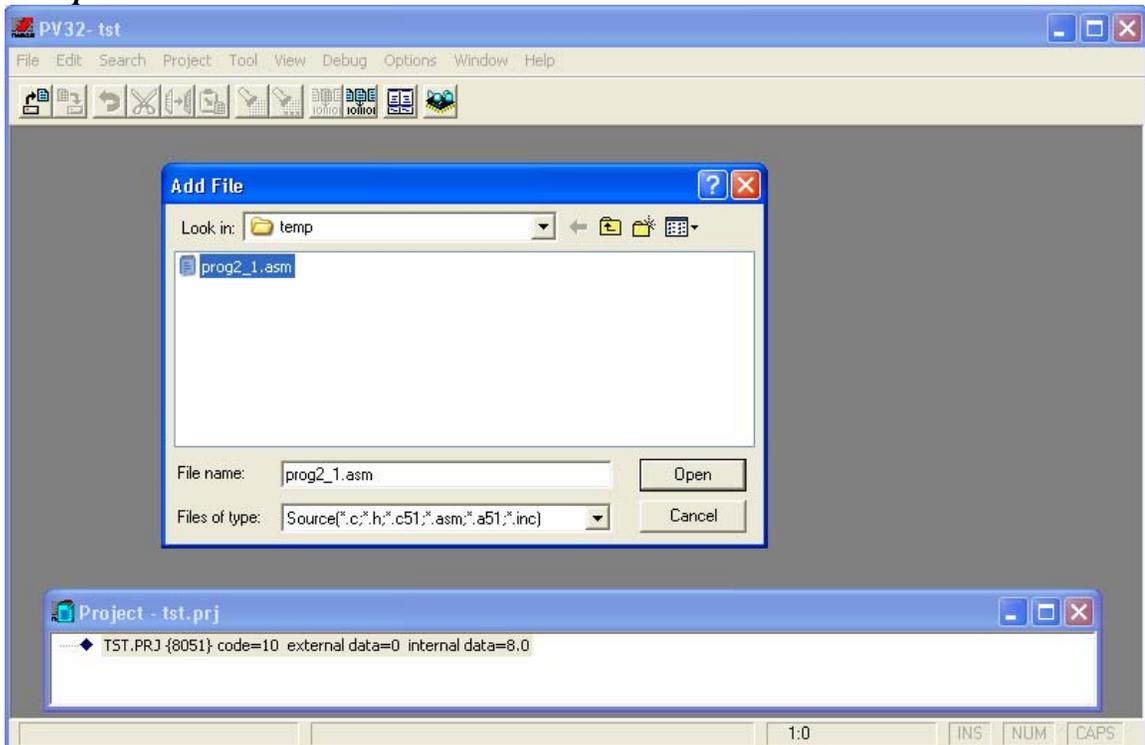


15. Press *Ok*.

16. Select *Add file* from the *Project* menu.



17. Select the ASM file which you have created in the previous steps. Then press *Open*.



18. The file has been added to the project. Now open your source file by double clicking on the name of it.



19. Debug and trace the project by pressing **Ctrl + D** and **F7** if you like to.

## Making Hex File

ProView does not normally make hex files. But you sometimes need it; For example, when we want to feed the Proteus software. To make the ProView software, provide the hex file, go through the following steps:

20. Select **Project** from the **Options** menu. The following window appears.
21. Click on **L51**.
22. Click on **Linker**.
23. Activate **Intel Hex**.
24. Press **OK**.

