



Microprocessors & Microcontrollers (ECE3004)

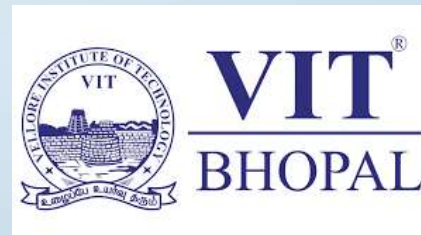
Module – 03

8051 Microcontroller [Keil and Proteus Setup]

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HOW TO USE KEIL [Generating .hex File for 8051 μ C]

Keil?

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- ✓ Finally you have decided to write your own code for the 8051 microcontroller.
- ✓ It doesn't matter whether you have chosen Assembly or C Language for yourself but what matters now is that you need an environment specially designed for 8051.
- ✓ Basically you are looking out for IDE (Integrated Development Environment) that will help you build and compile programs.
- ✓ Keil is the solution to generate .hex file for 8051 programming.
- ✓ You can download KEIL from their official website using the link below.

[DOWNLOAD KEIL uVISION FOR 8051](#)

Follow the steps to install Keil.

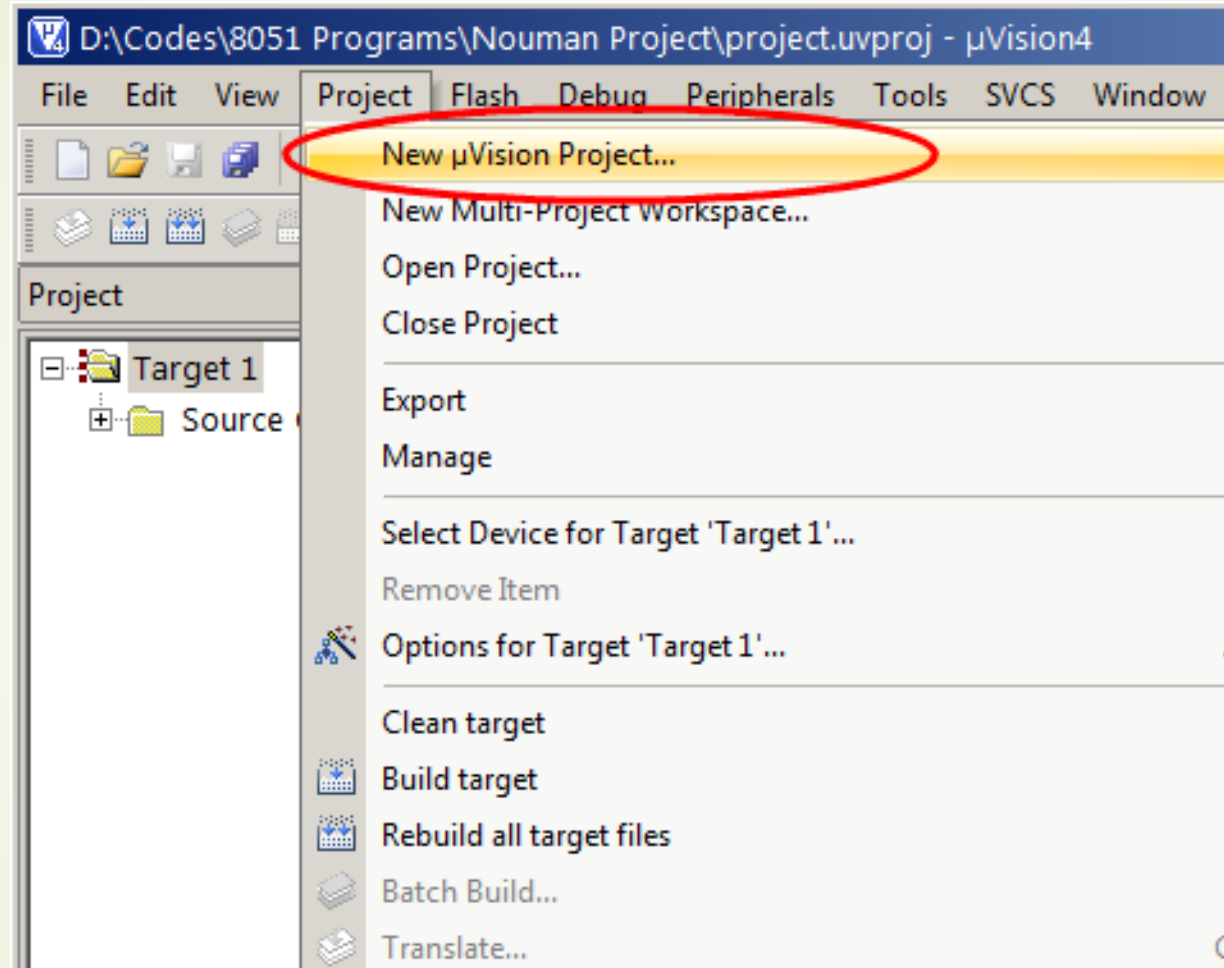
Keil: Here We go....

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Create a new folder for project to avoid getting mixed up with files

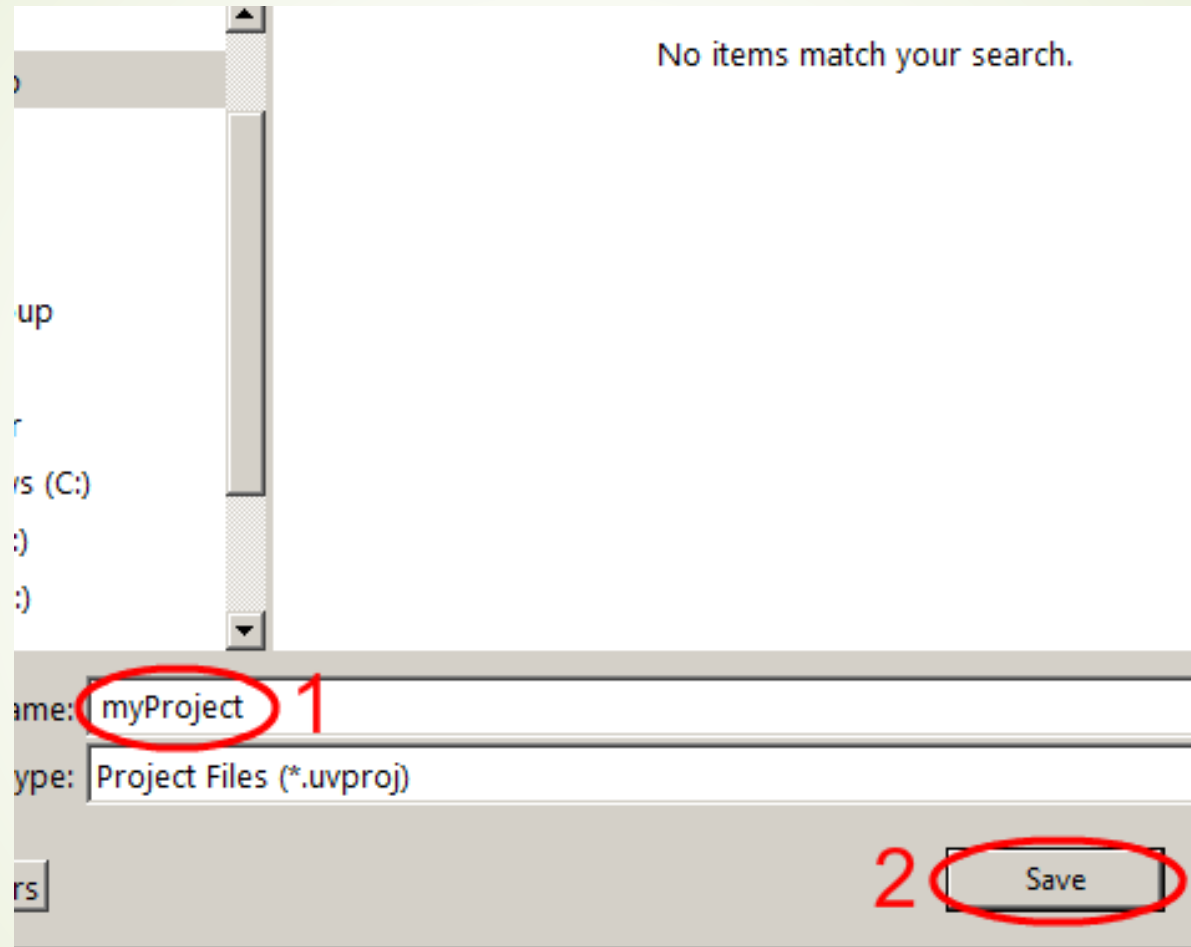
Step - 01



PROJECT -> NEW μ VISION PROJECT

Step - 02

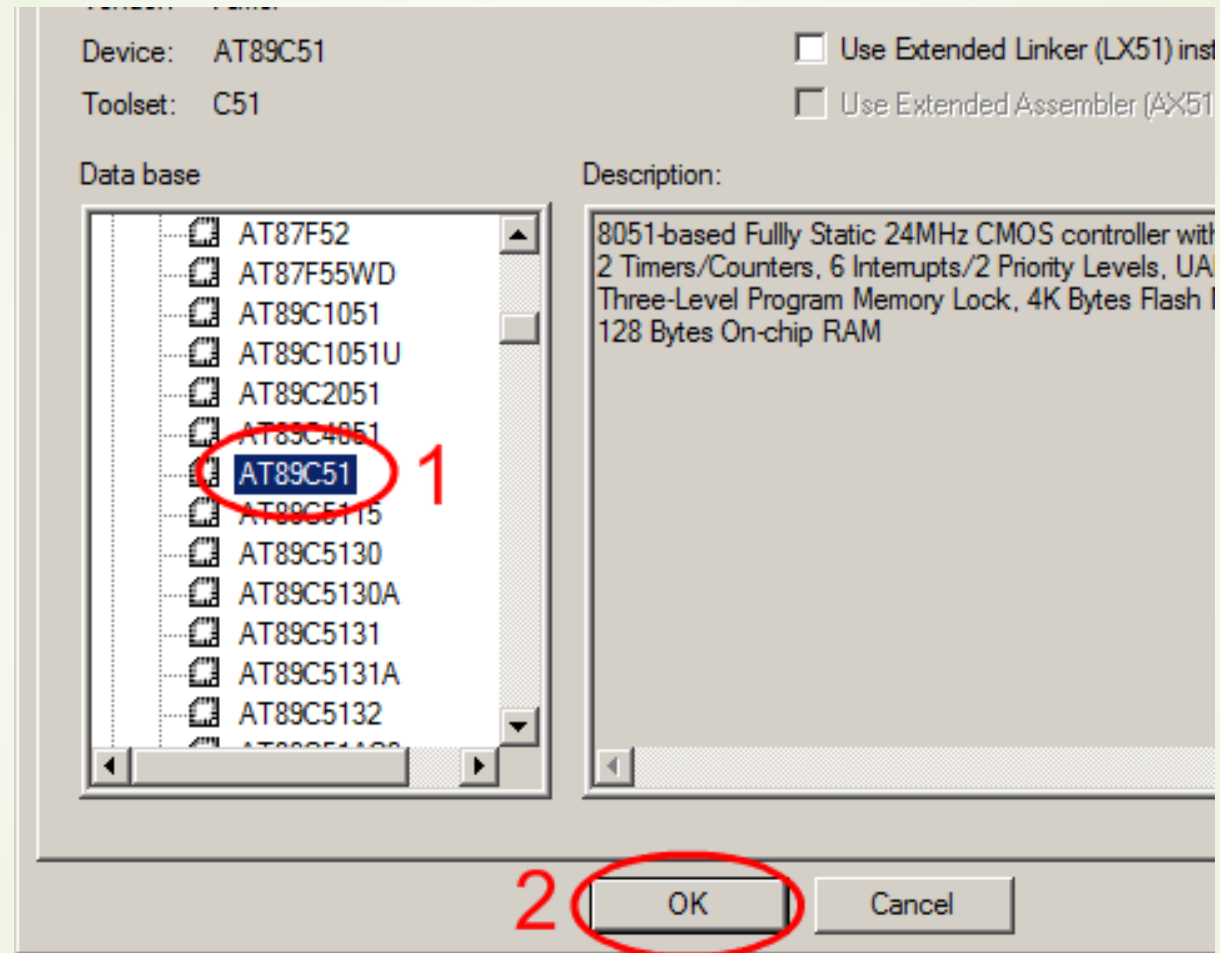
6



Give some name and click SAVE

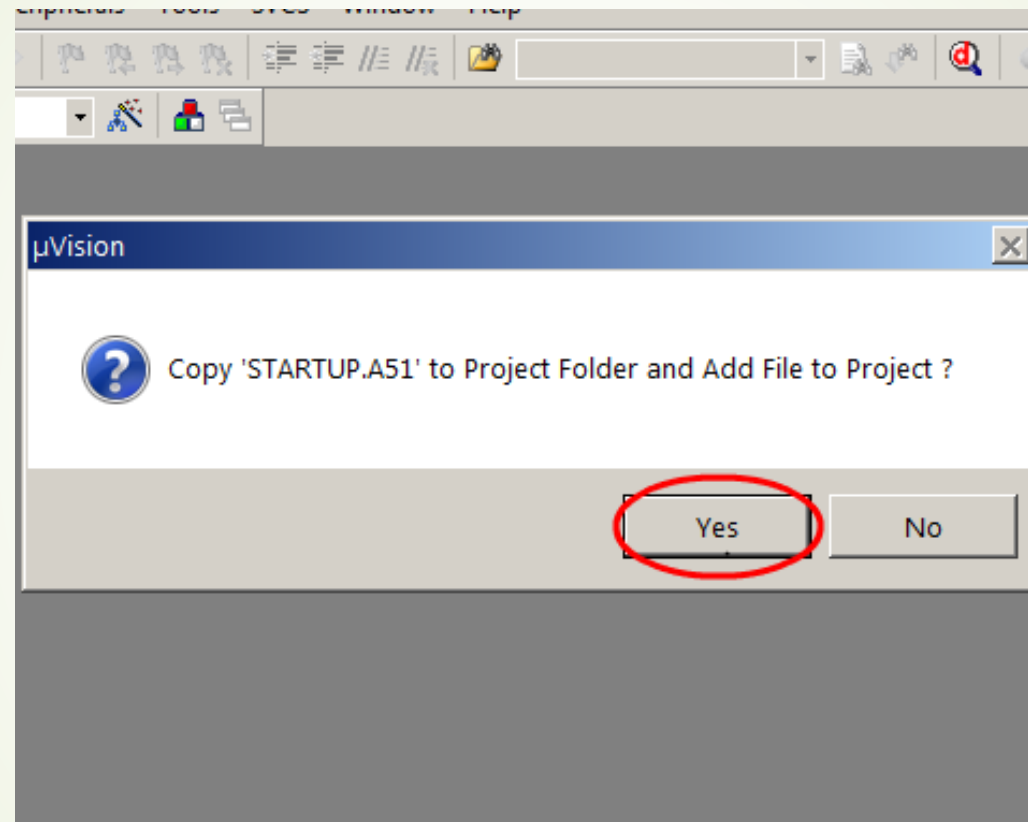
Step - 03

7



when prompted, select proper device that you're using (i-e ATMEL
→ AT89C51)

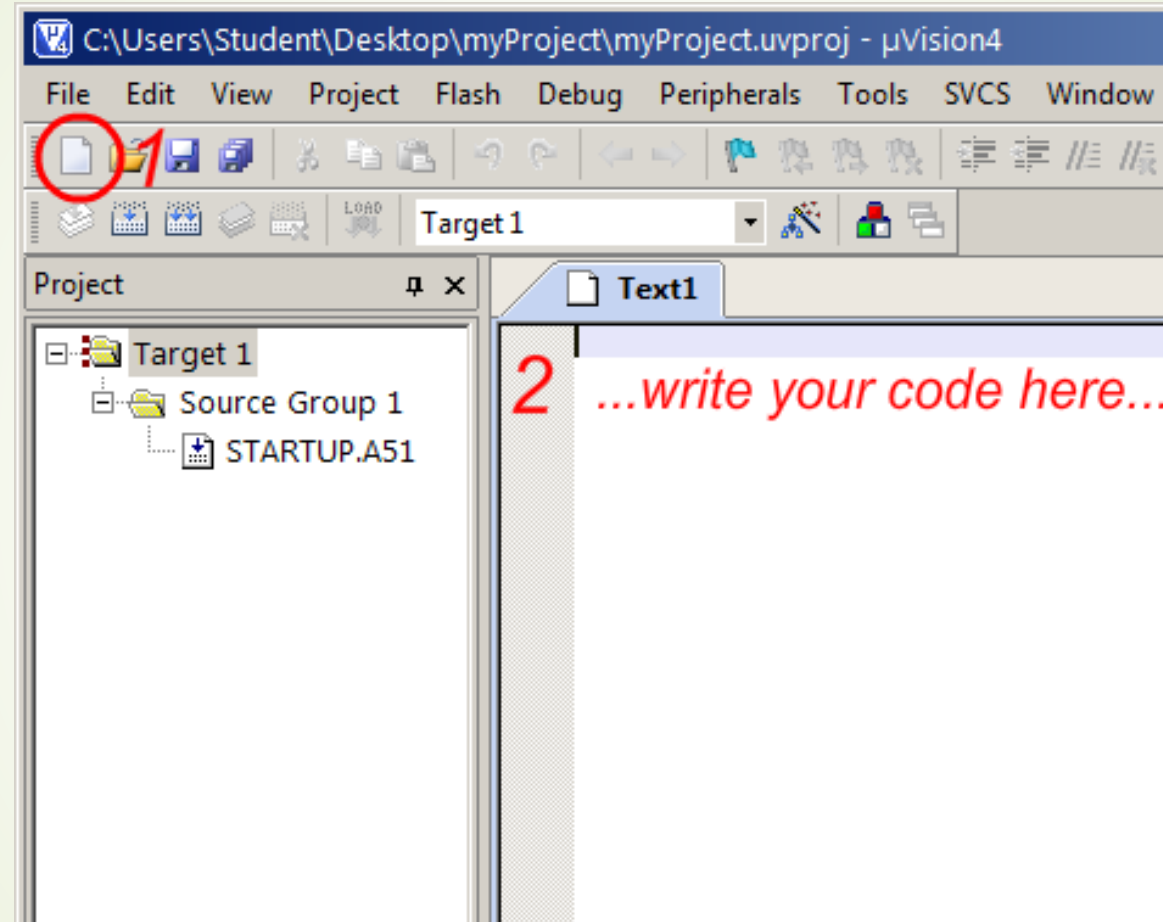
Step - 04



When prompted, select YES

Step - 05

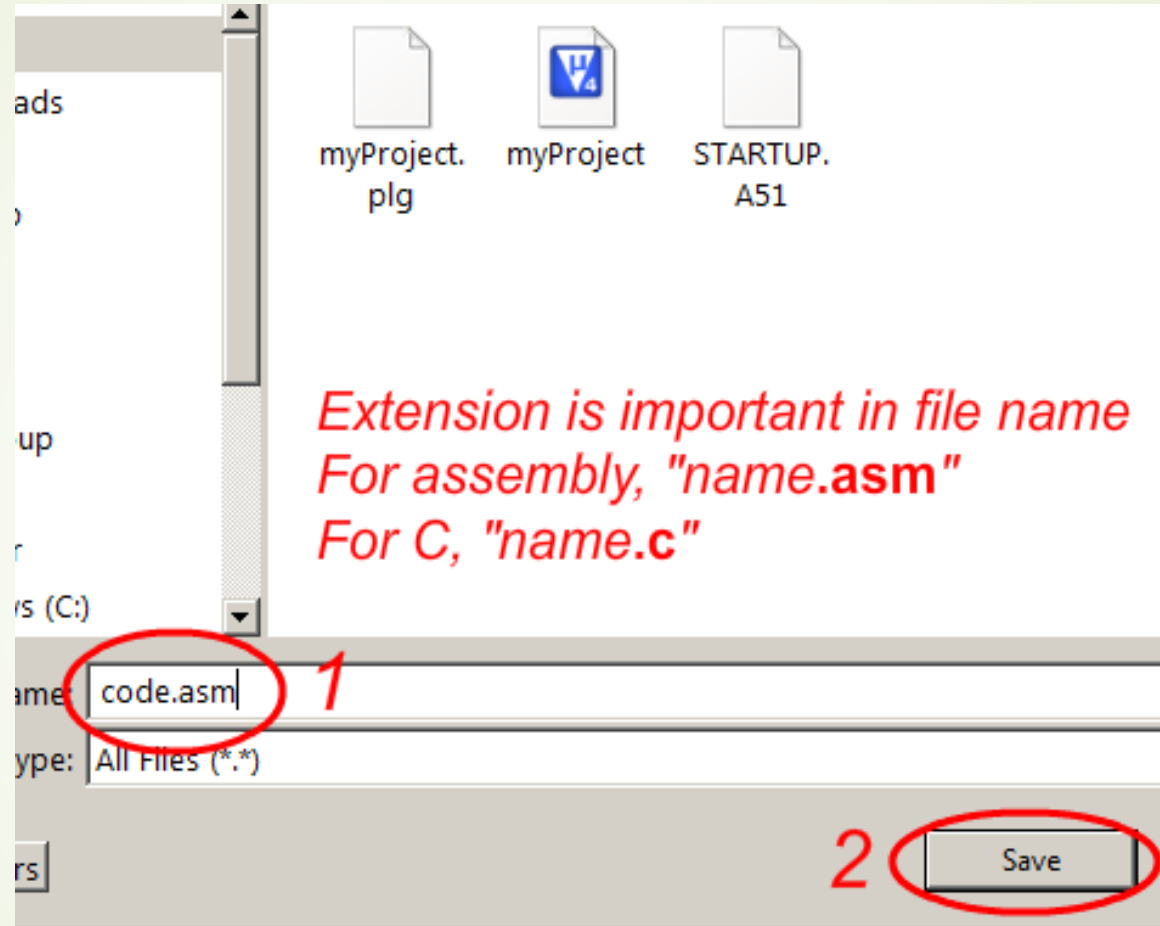
9



Click NEW button and write your code (Assembly or C language)

Step - 06

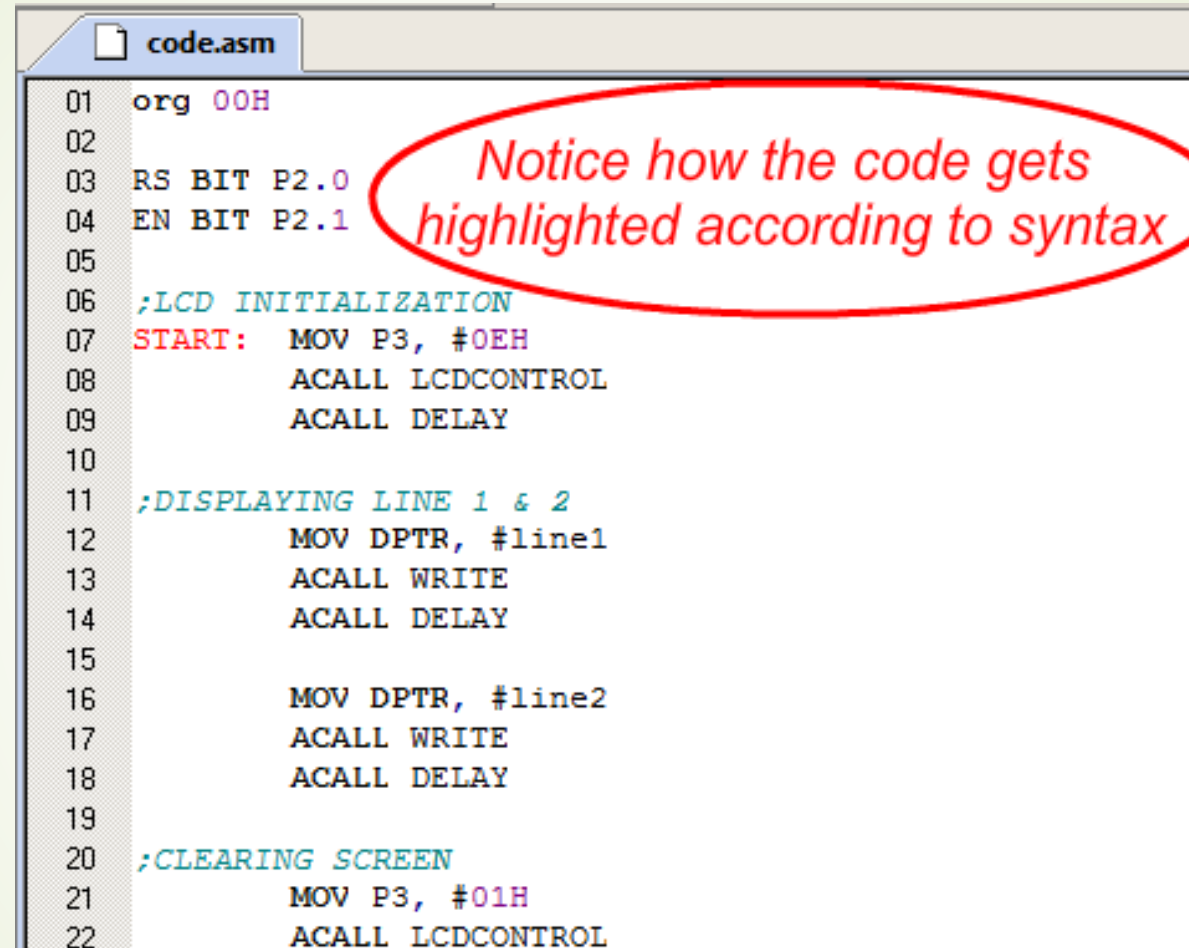
10



SAVE the file with proper extension as above

Step - 07

11



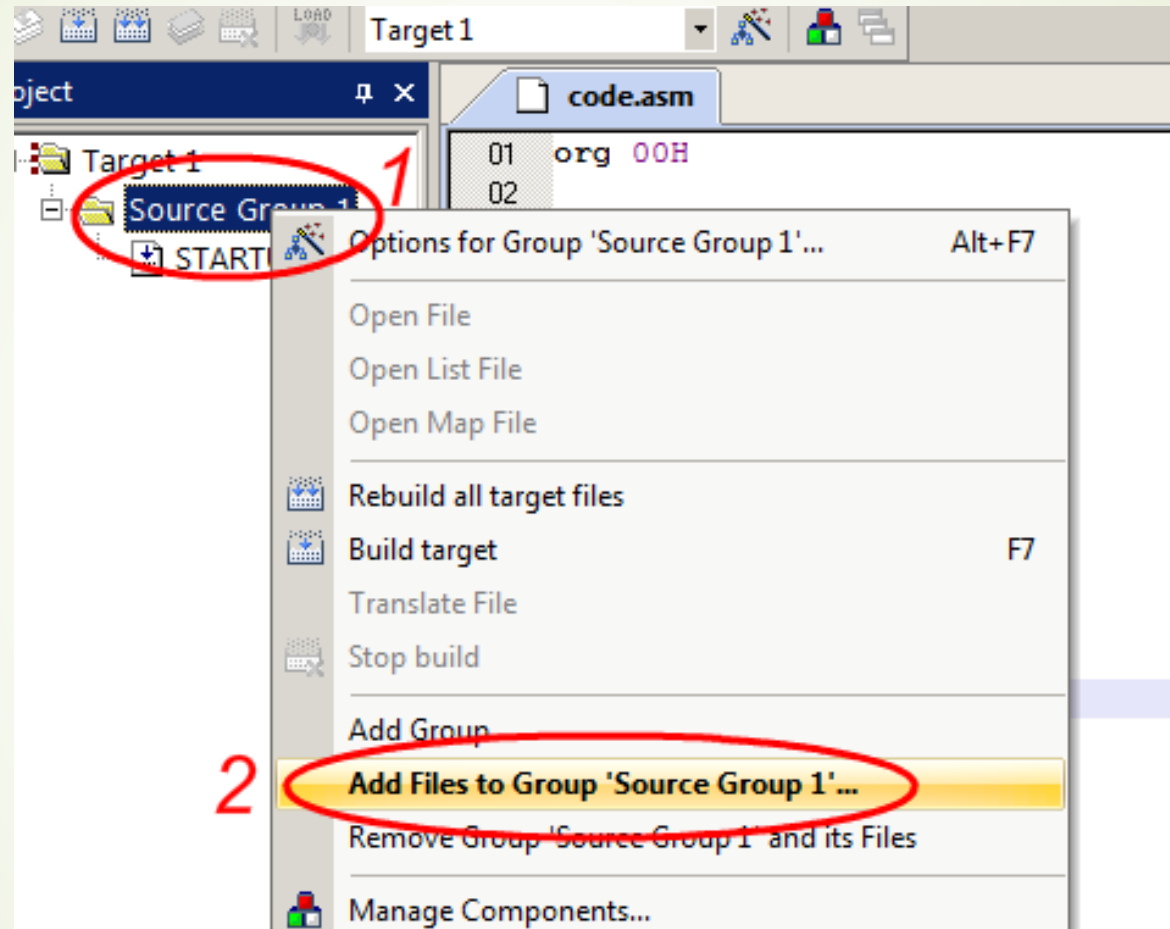
code.asm

```
01 org 00H
02
03 RS BIT P2.0
04 EN BIT P2.1
05
06 ;LCD INITIALIZATION
07 START: MOV P3, #0EH
08         ACALL LCDCONTROL
09         ACALL DELAY
10
11 ;DISPLAYING LINE 1 & 2
12         MOV DPTR, #line1
13         ACALL WRITE
14         ACALL DELAY
15
16         MOV DPTR, #line2
17         ACALL WRITE
18         ACALL DELAY
19
20 ;CLEARING SCREEN
21         MOV P3, #01H
22         ACALL LCDCONTROL
```

Notice how the code gets highlighted according to syntax

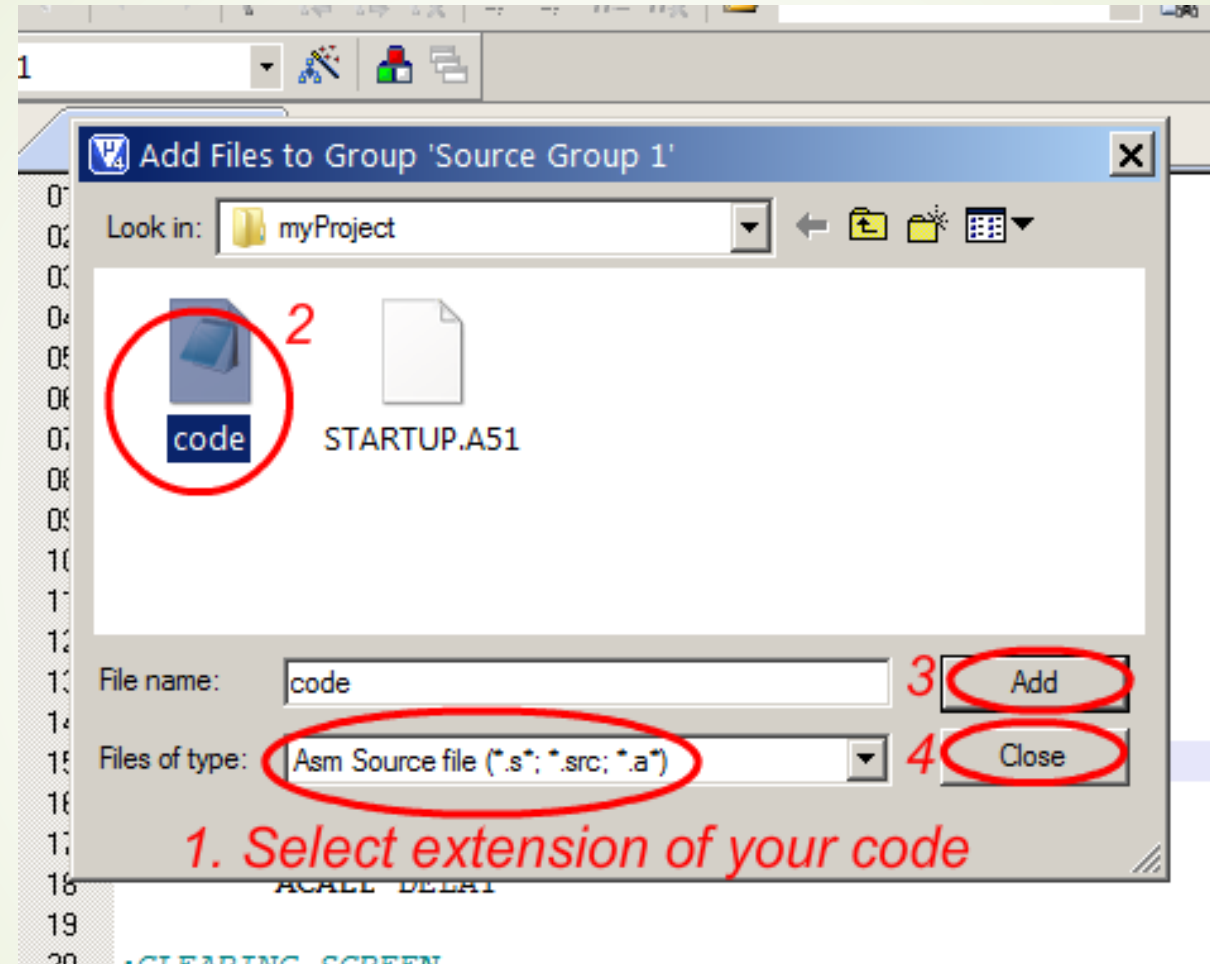
The code you have written gets highlighted

Step – 08 [Most Important]



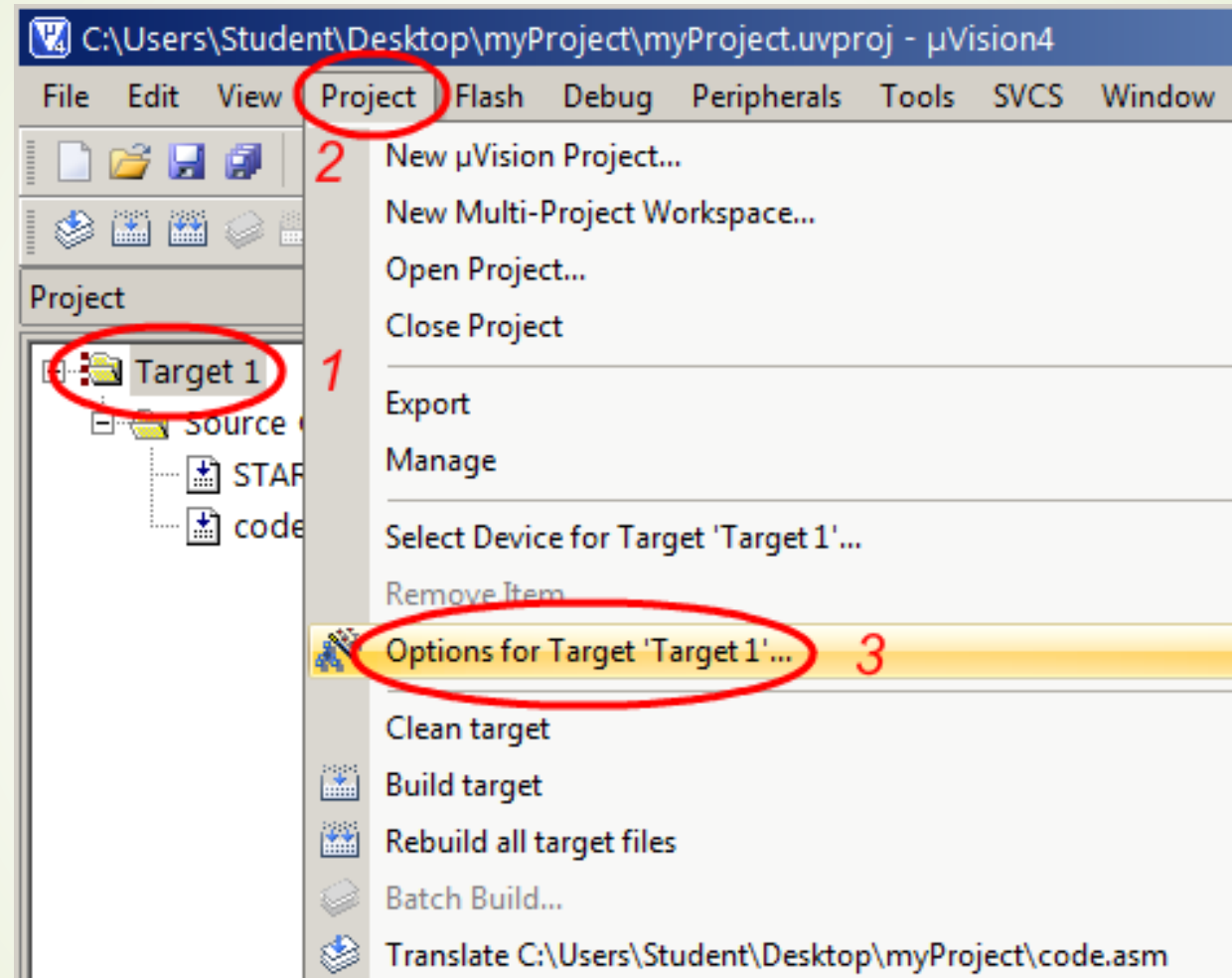
Right click SOURCE GROUP 1 as shown

Step – 09 [Most Important]



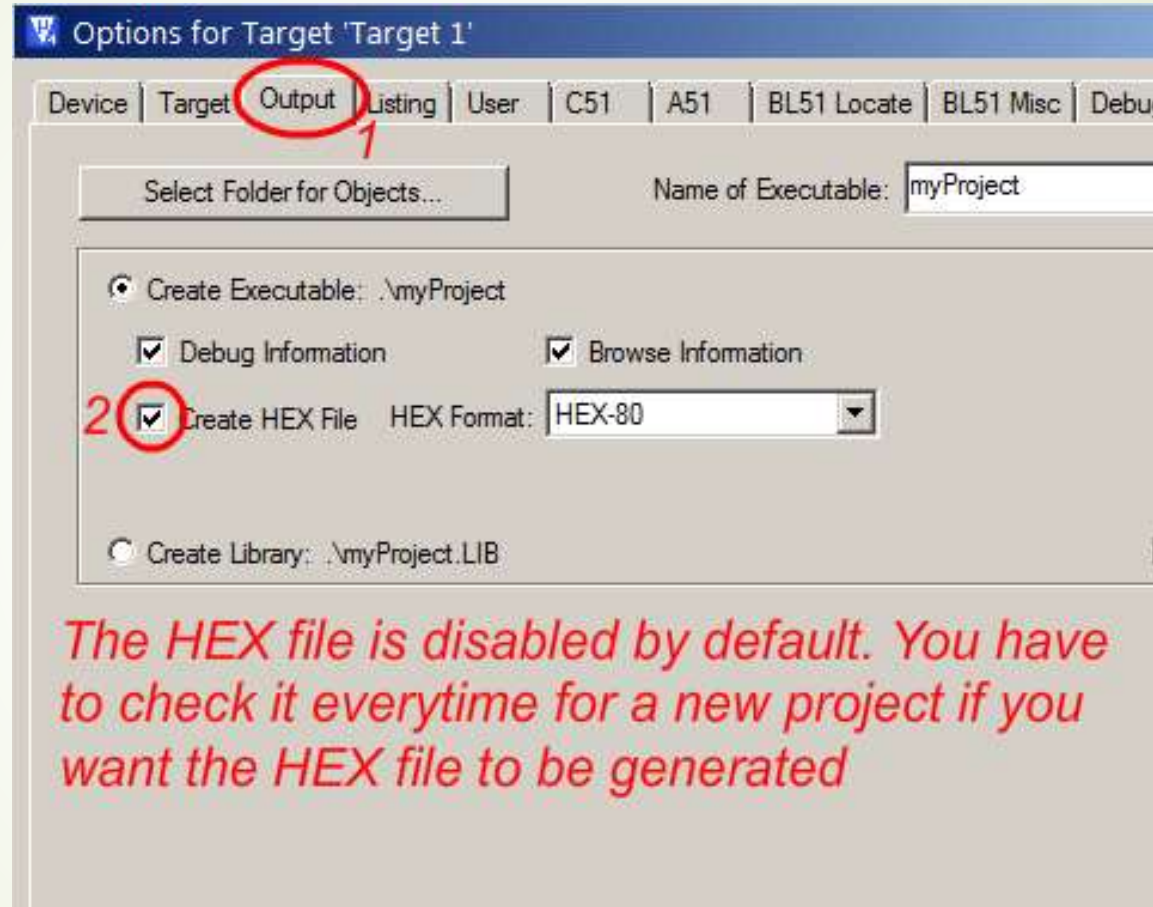
Add the code you have written into the Project workspace

Step – 10 [Most Important]



Go to options for the project

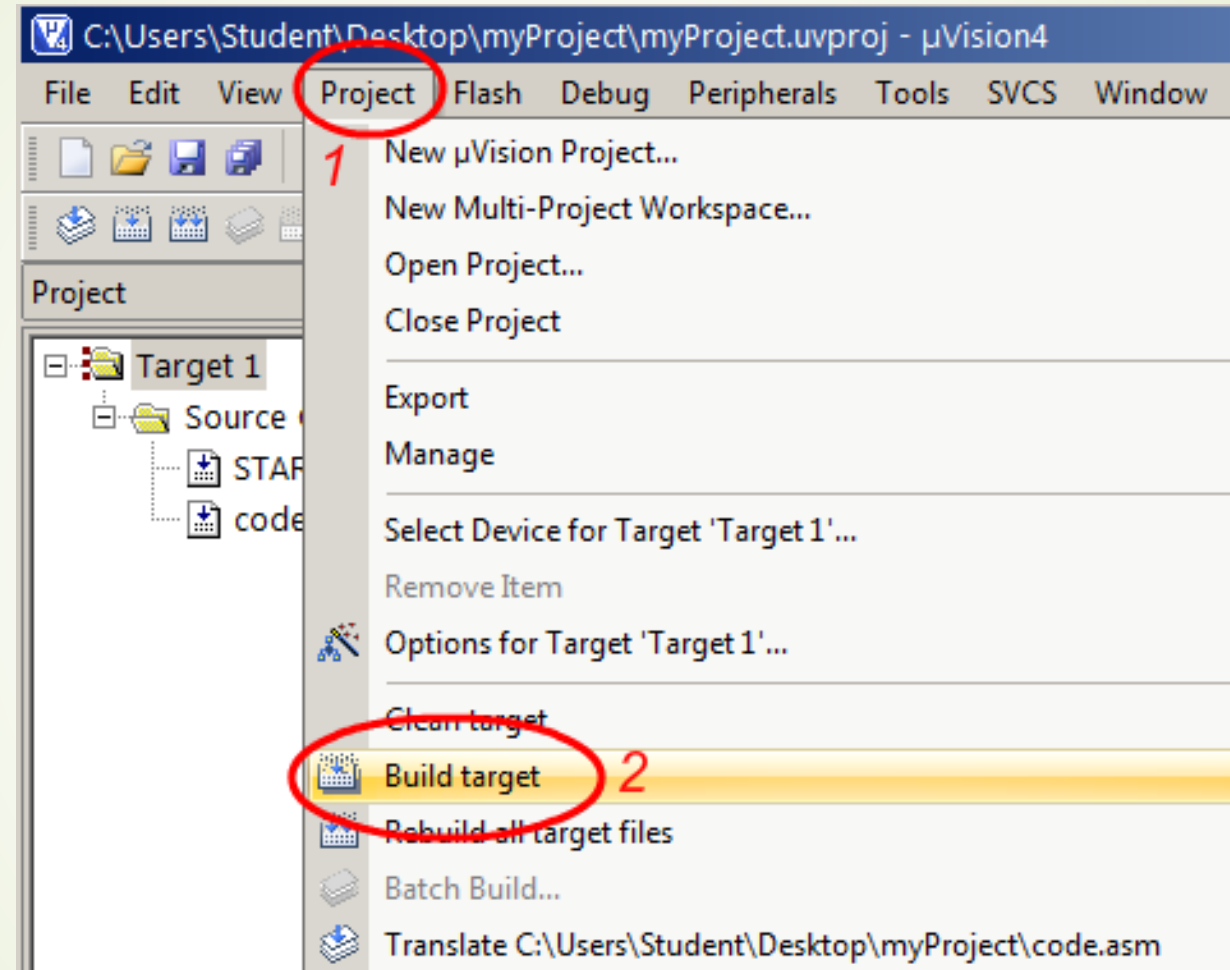
Step – 11 [Most Important]



Enable HEX file generation

Step – 12

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Build the project

Step – 13

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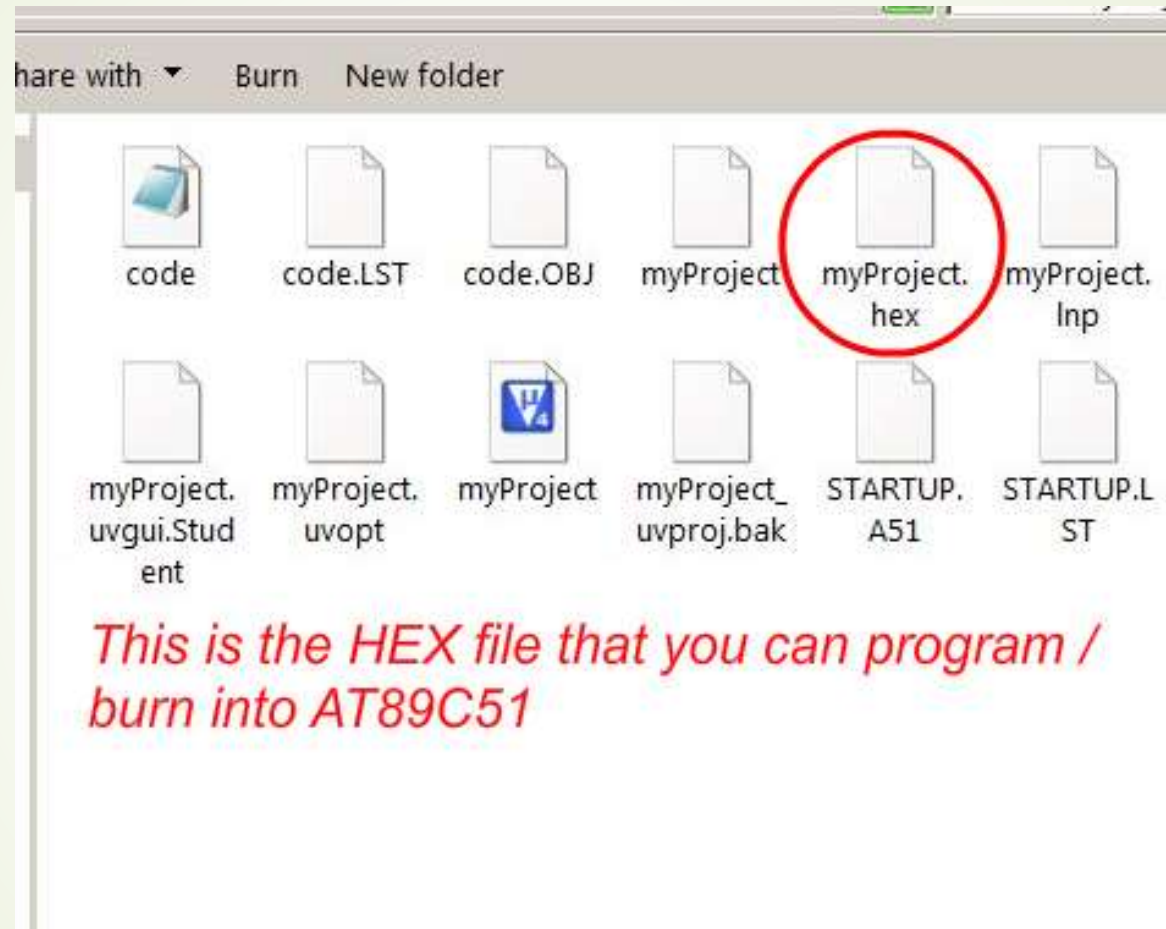
```
asm
04  EN D11 F2.1
05
06  ;LCD INITIALIZATION
07  START:  MOV P3, #0EH
08          ACALL LCDCONTROL
09          ACALL DELAY
10
11  ;DISPLAYING LINE 1 & 2
12          MOV DPTR, #line1
```

Build Output

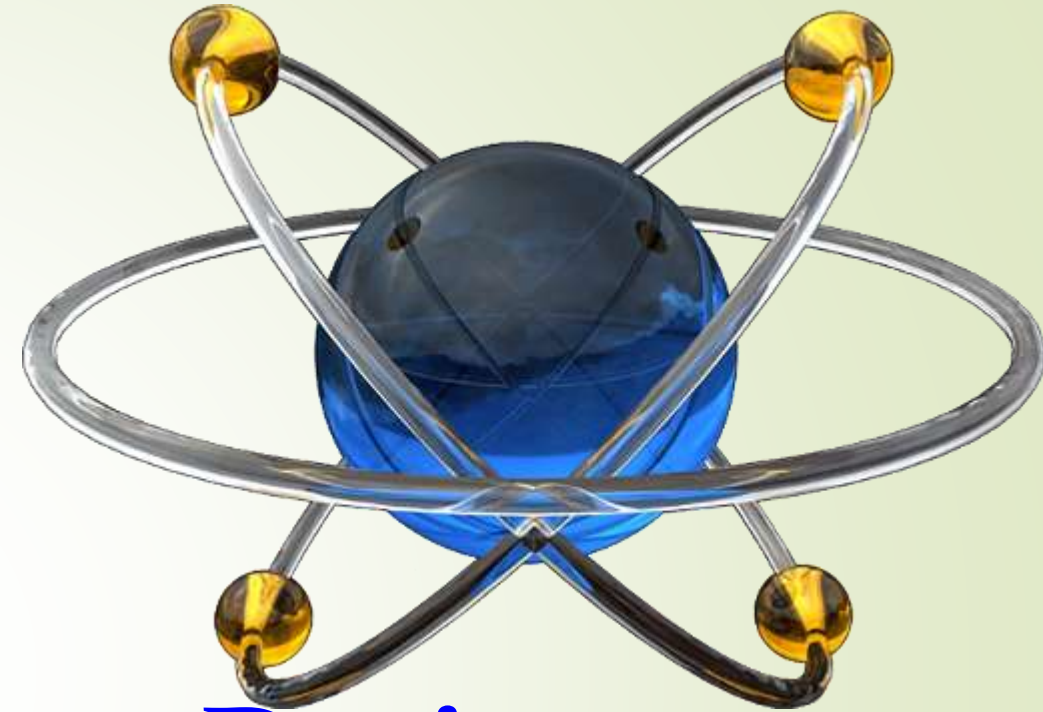
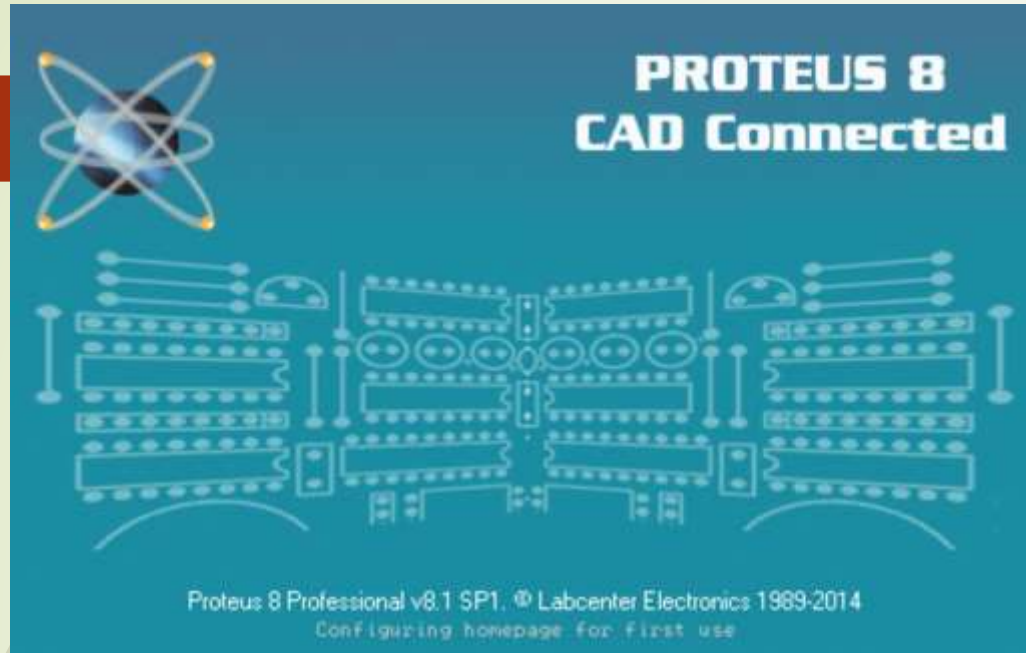
```
SYMBOL:  ?C_START
MODULE:  STARTUP.obj (?C_STARTUP)
*** WARNING L2: REFERENCE MADE TO UNRESOLVED EXTER
SYMBOL:  ?C_START
MODULE:  STARTUP.obj (?C_STARTUP)
ADDRESS: 080AH
Program Size: data=9.0 xdata=0 code=148
creating hex file from "myProject"...
"myProject" - 0 Error(s), 3 Warning(s).
```

Notice successful build. Ignore the warnings

Step – 14



Use this HEX file to program your IC



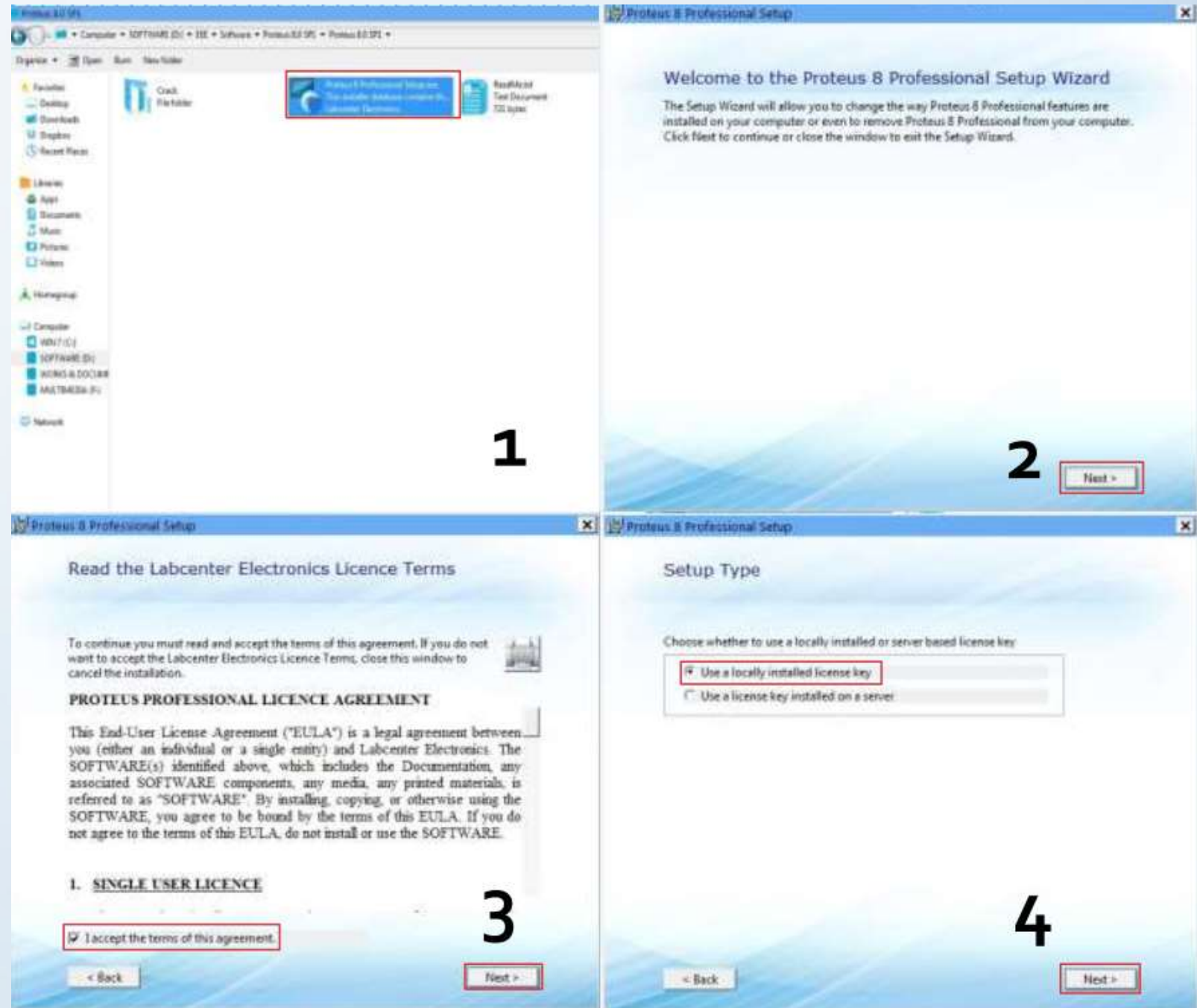
How to Install Proteus Design Suite [Version 8]

PROTEUS



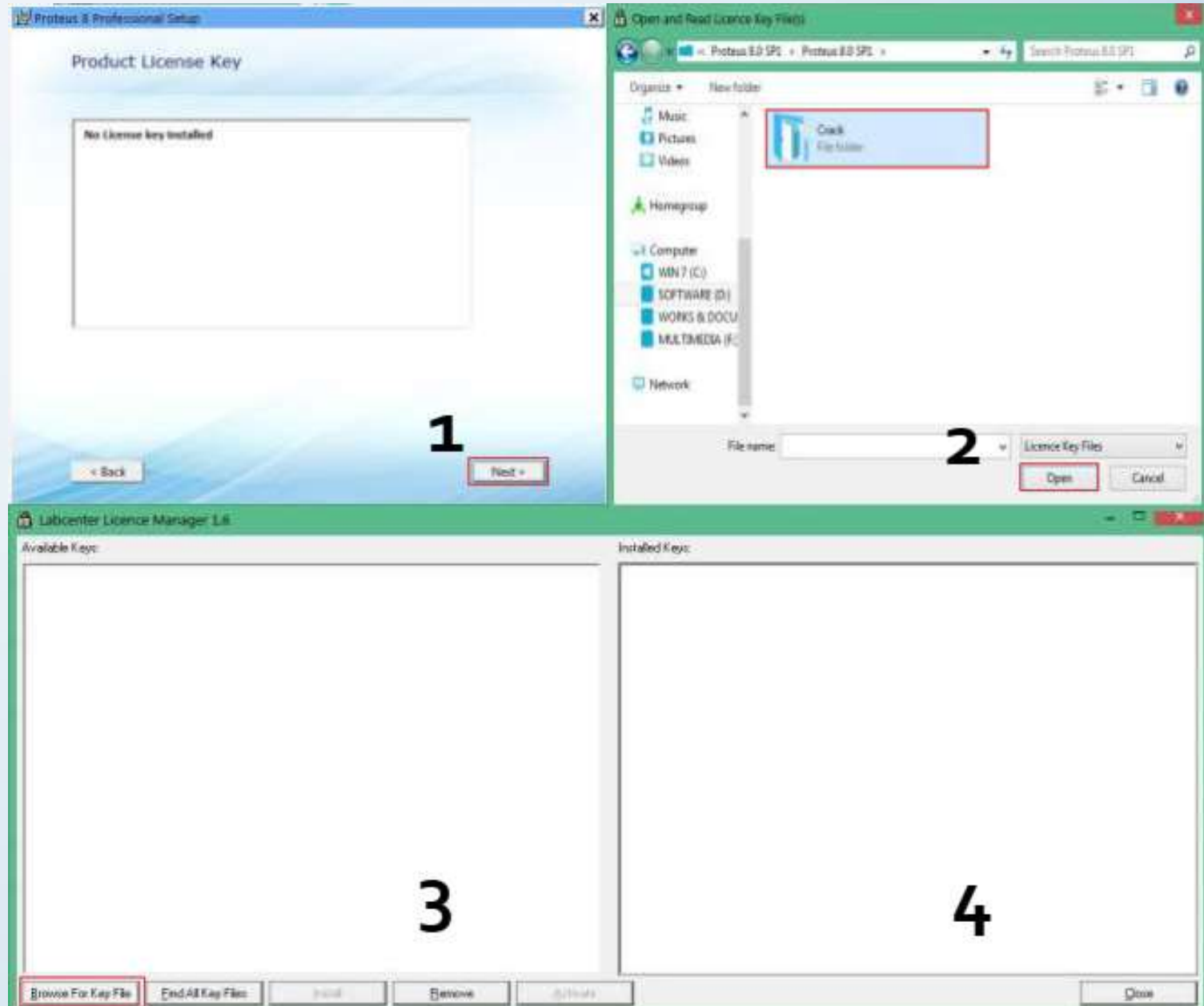
INSTALLATION

- ✓ Click twice on the installation exe file.
- ✓ Click “Next”.
- ✓ On the “License Agreement” page, check “I accept terms of this agreement” and click “Next”.
- ✓ Select “Use locally installed license” and click next.



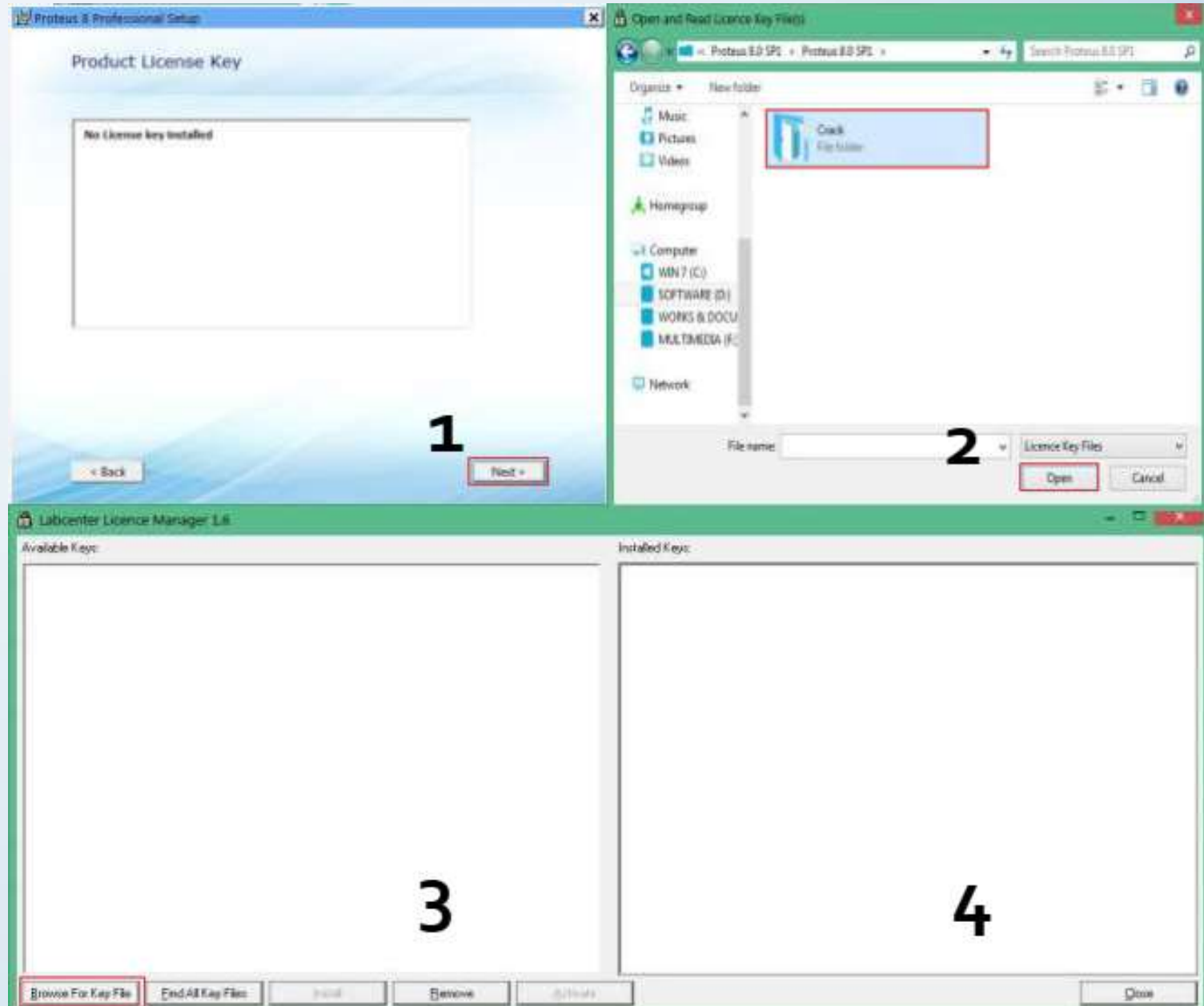
INSTALLATION

- ✓ Click Next to find the License File.
- ✓ After opening the “Labcenter License Manager” window, click on “Browse For Key file”.
- ✓ Go to the specific folder where you have copied all installation folder before starting installation of Proteus.
- ✓ Find the “Crack” named folder there.



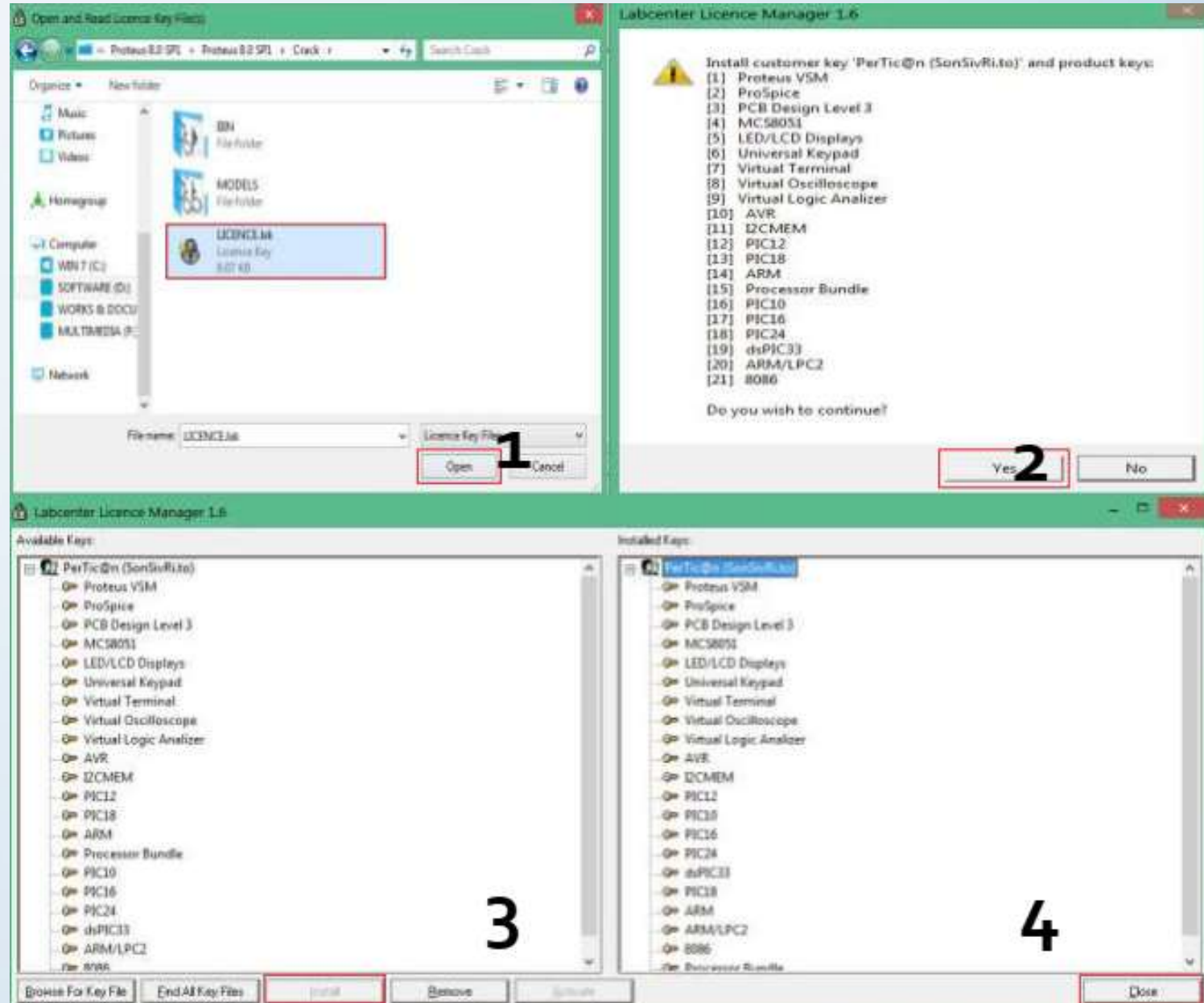
INSTALLATION

- ✓ Click Next to find the License File.
- ✓ After opening the “Labcenter License Manager” window, click on “Browse For Key file”.
- ✓ Go to the specific folder where you have copied all installation folder before starting installation of Proteus.
- ✓ Find the “Crack” named folder there.



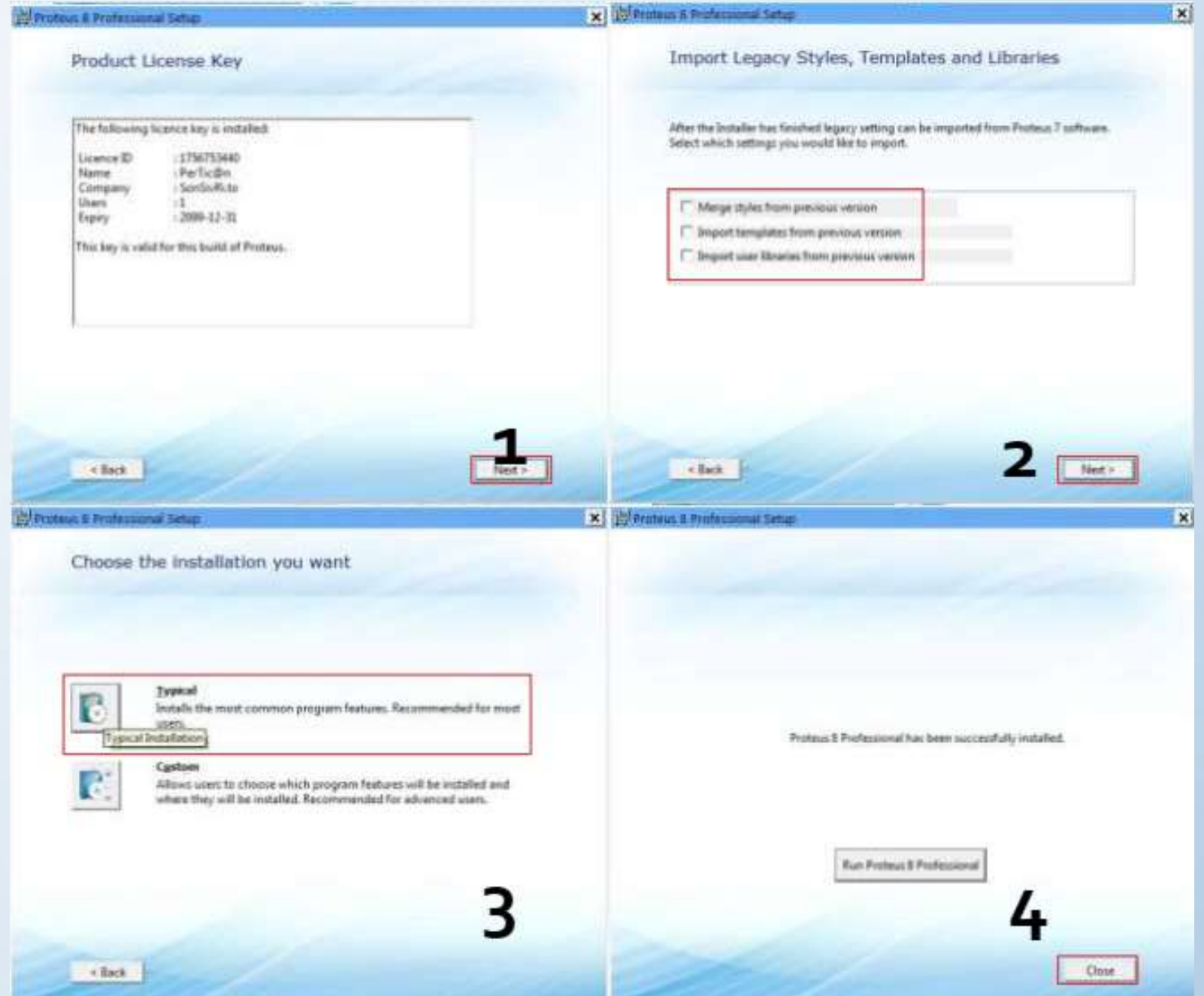
INSTALLATION

- ✓ Select the “license.lxk” file in the “Crack” folder and click to “Open” it.
- ✓ Click Yes and then Click “Install”.
- ✓ Close the License Manager window.



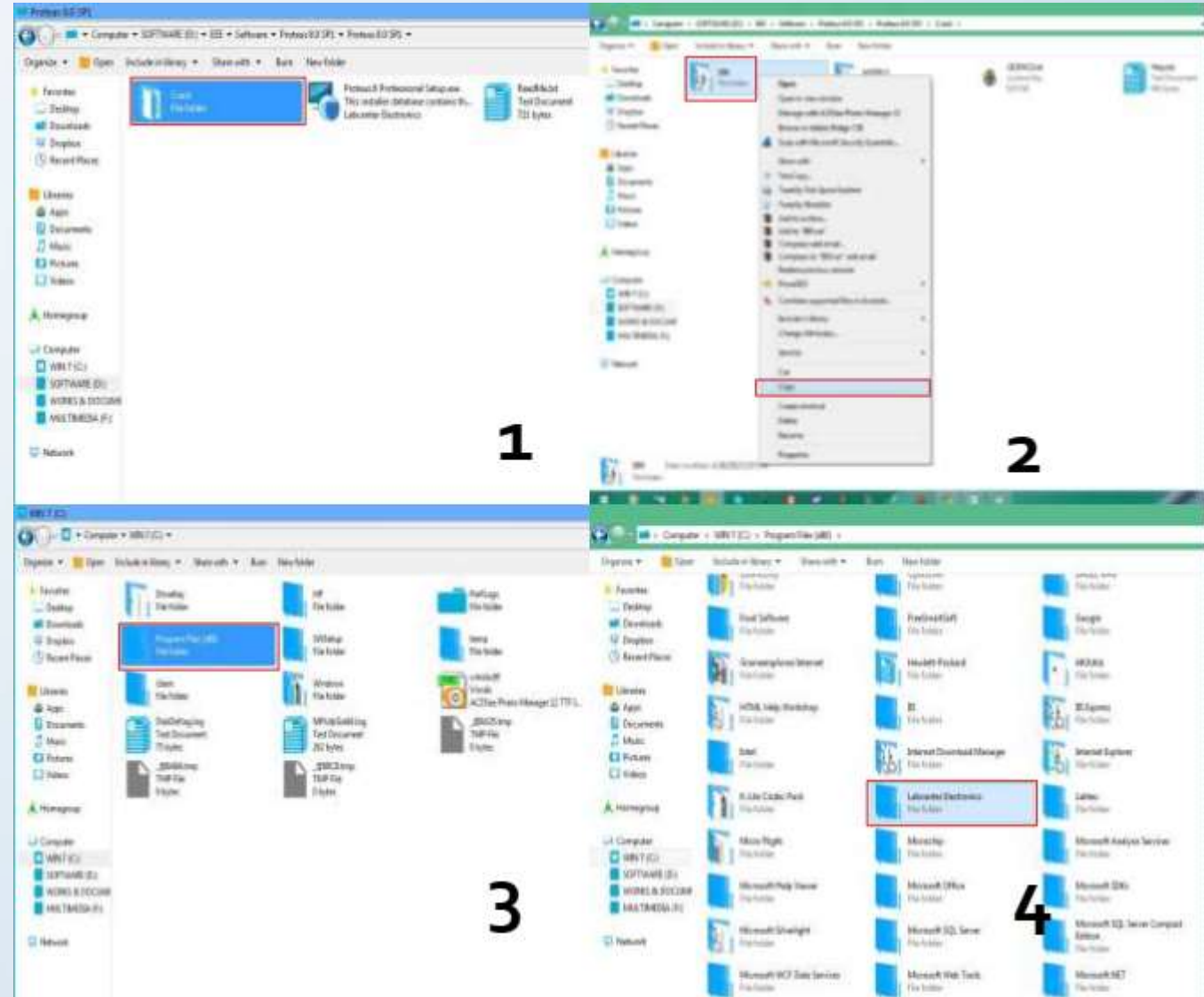
INSTALLATION

- ✓ If the license file is installed perfectly, you will see a window like 1.
- ✓ If you have any previous version of Proteus, then check all these 3 boxes and click “Next”. If it is the first time of your Proteus using, leave all three box uncheck and Click “next”.
- ✓ Click “Typical”.
- ✓ Proteus Installation will be started now. After 2/3 minutes, the installation will be done. **DO NOT RUN Proteus Now !** Click “Close”.



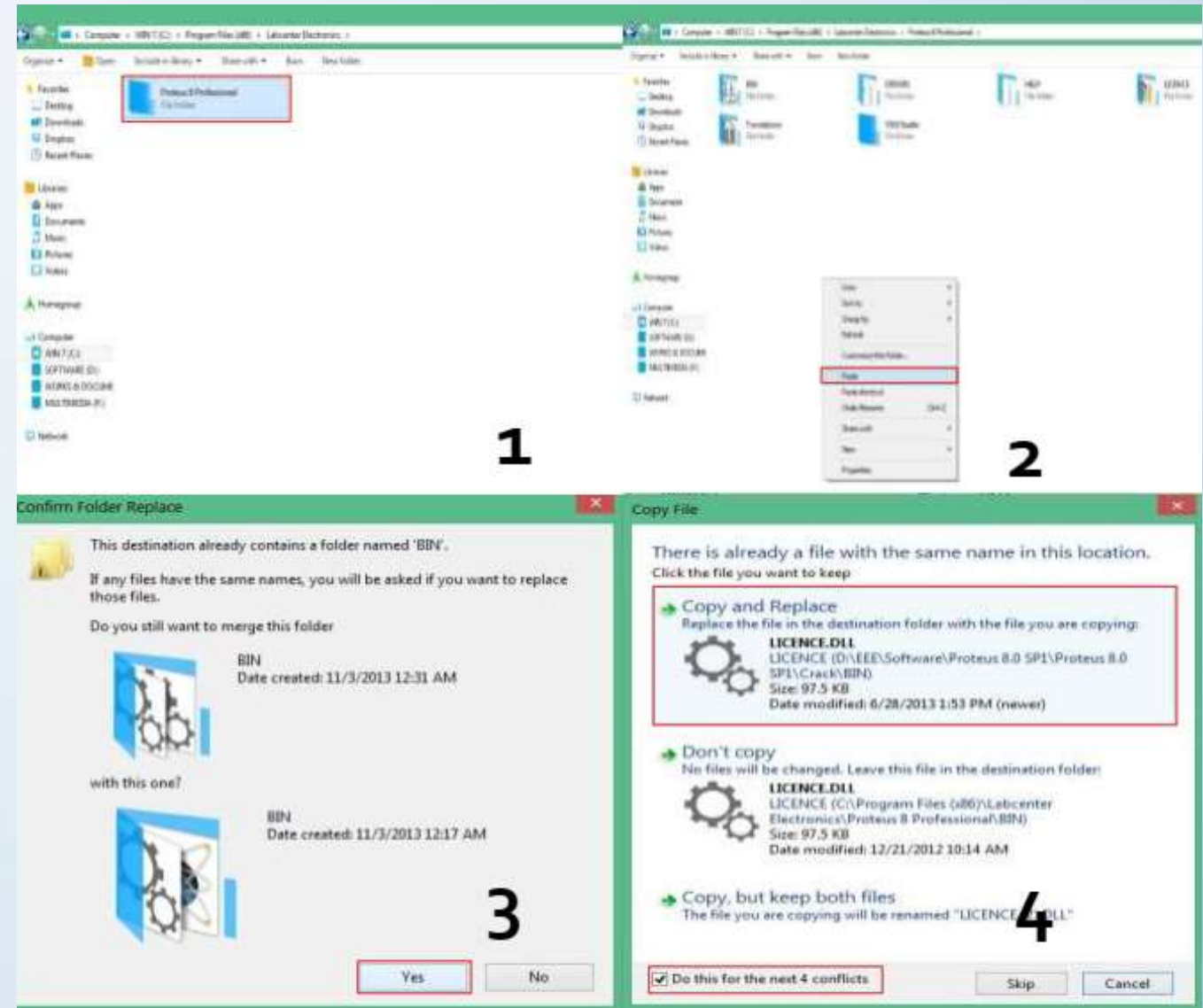
CRACK Installation

- ✓ To crack the installed software, to the “Crack” folder again.
- ✓ There should be a folder named “BIN”.
- ✓ Now, go to “C:\Program Files
- ✓ Labcenter Electronics\Proteus 8 Professional” (32bit) Or, “C:\Program Files (x86)\Labcenter Electronics\Proteus 8 Professional” (64 bit)— and pasted that BIN folder there.



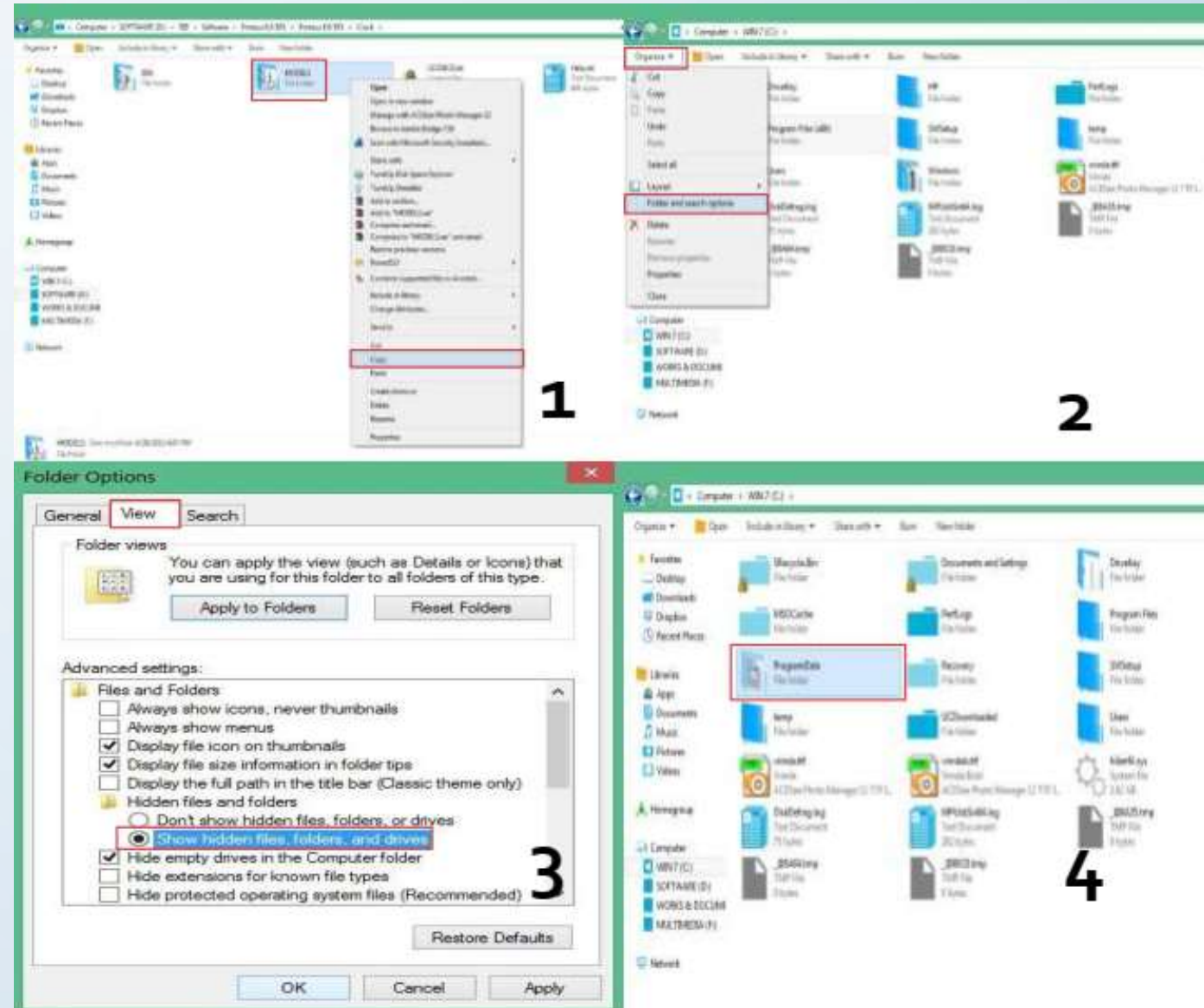
CRACK Installation

- ✓ Click “Yes” while pasting the BIN file at “Confirm Folder Replace” window.
- ✓ Check “Do this for the next 4 conflicts” option and click on “Copy and Replace” option.
- ✓ If any other permission seeking window pops up, just click “okay/yes”.



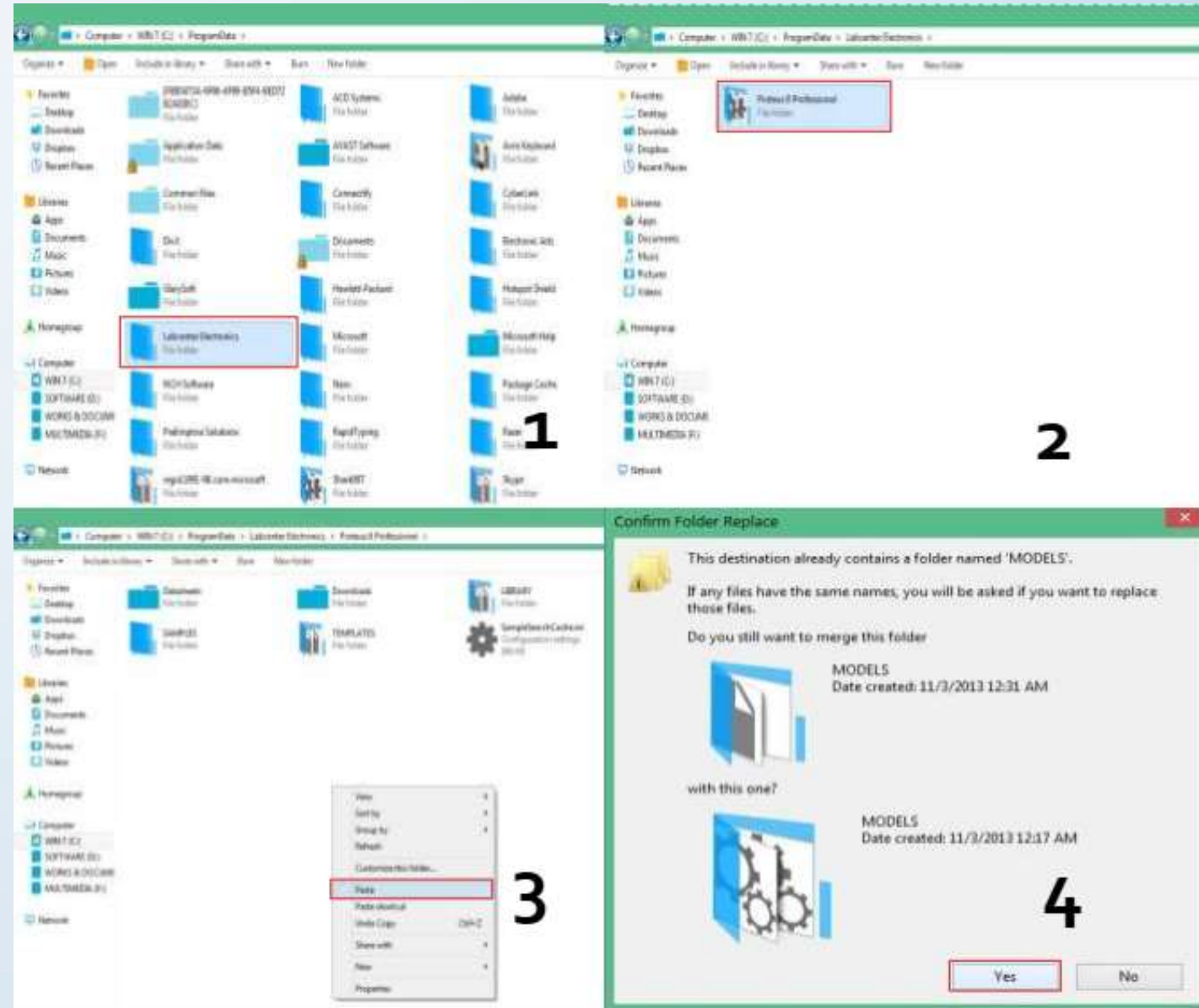
CRACK Installation

- ✓ After being done with cypypasting BIN folder, now come to the previous Crack folder and Copy “MODELS” folder.
- ✓ The location of pasting this “MODELS” folder is hidden by default. You will have to make it visible to past MODELS.
- ✓ Go to “*Organize>Folder and search option > Folder Option >View*”.
- ✓ Select “*Show hidden files, folder and drives*” and click “OK”, the close the window.
- ✓ Now if you go to your “C” drive, you will see “Program Data” folder.



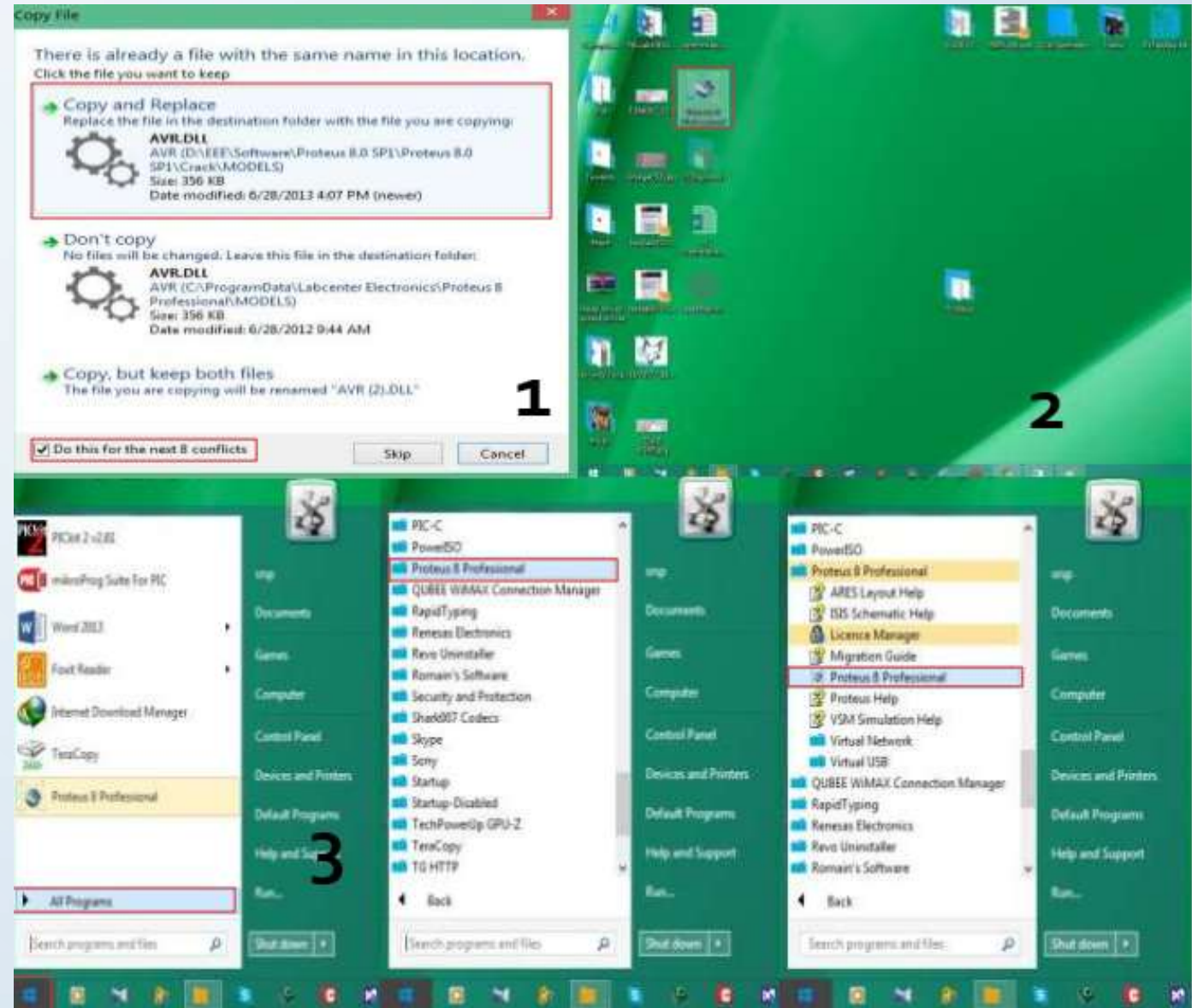
CRACK Installation

- ✓ Now go to this link location
“*C:\ProgramData\Labcenter Electronics\Proteus 8 Professional*”
and paste that MODEL folder on there.
- ✓ Click “Yes” if “Confirm Folder Replace” window shows up.



CRACK Installation

- ✓ Check the “Do this for the next 8 conflicts” box and click on “Copy and Replace”.
- ✓ Now you can run the software by clicking on the Shortcut of “Proteus 8 Professional” created on your desktop.
- ✓ You also can lunch is from Start Menu.



Proteus – Launching Window

- ✓ Enjoy the Professional Version of Proteus , absolutely in FREE !

