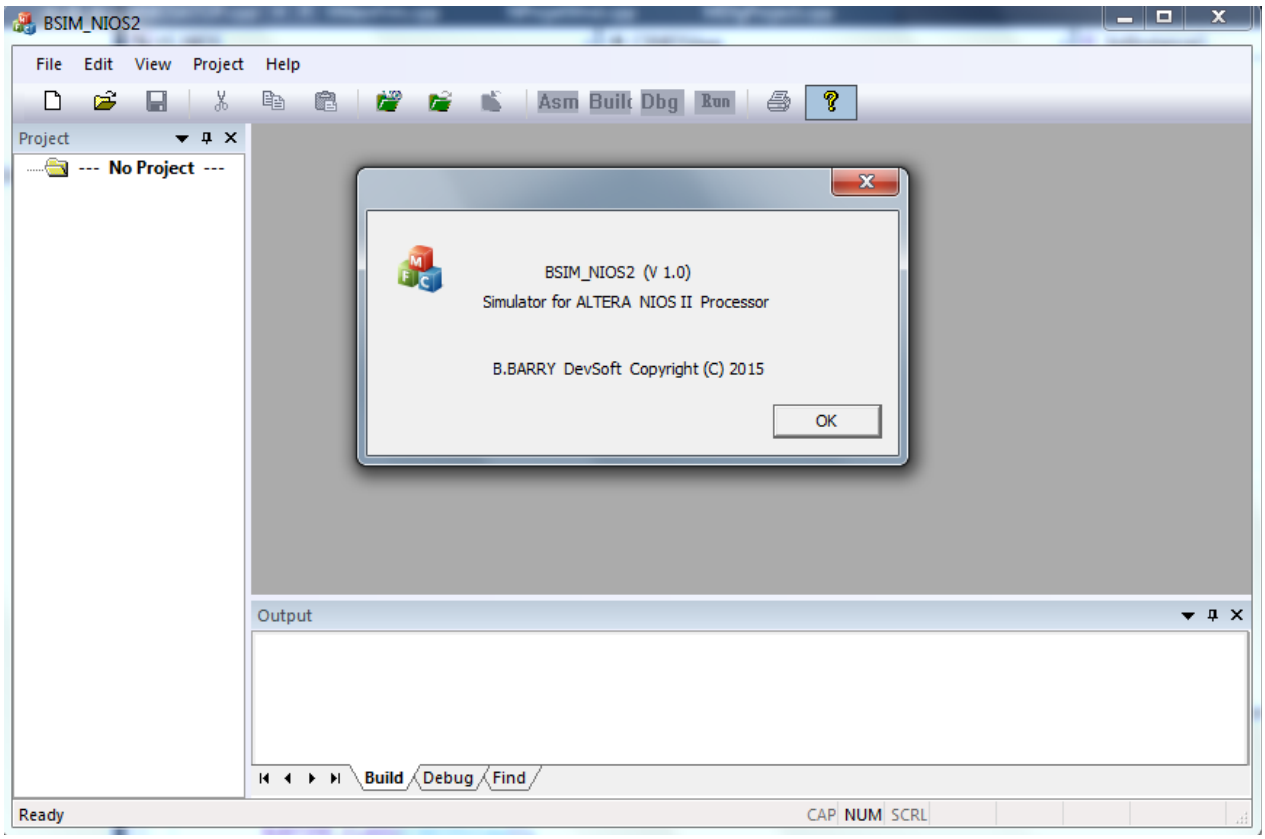
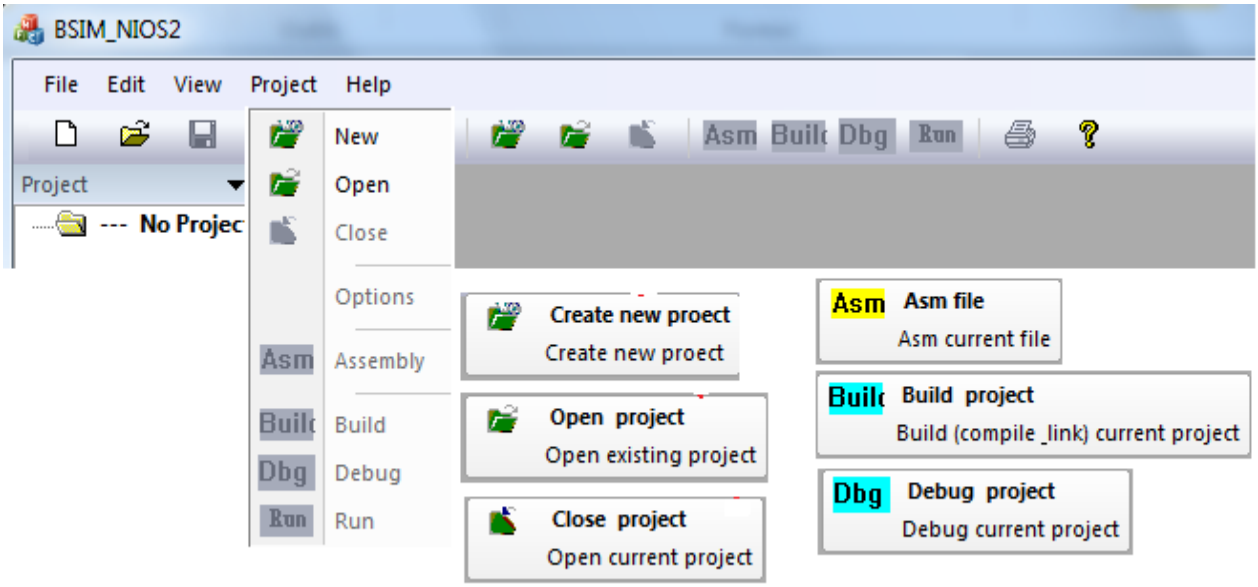
NIOS II
SIMULATOR

PRESENTATION

Program file : BSIM_NIOS2_WIN.exe



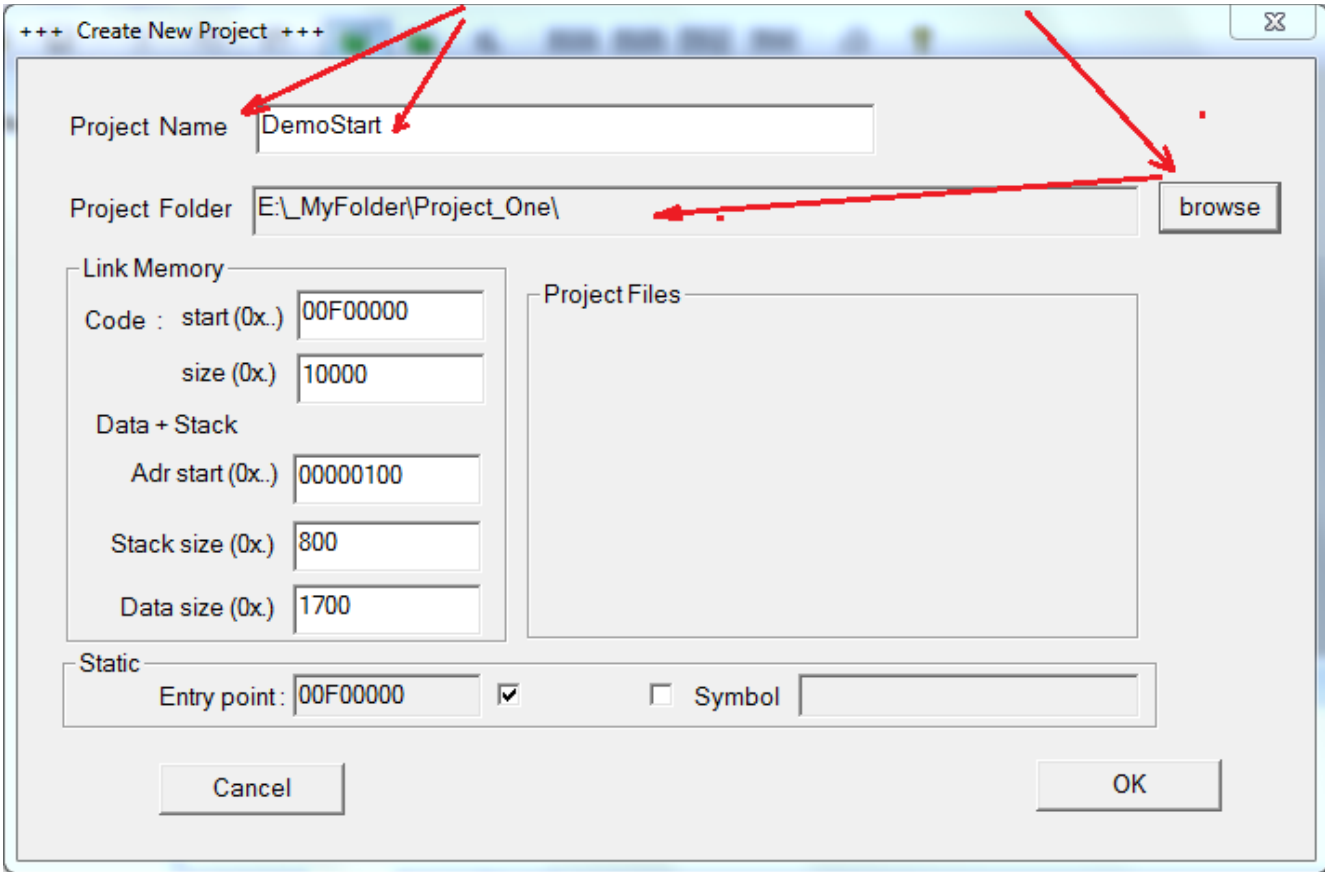
MAIN TOOLBAR



1.1 CREATING NEW PROJECT

Use the menu <Project>/<New> (or button on Toolbar). The following window appears :

- Use the <Browse> button to select a folder.
- Fill in the <Project Name> field.
- You can modify the parameters of <Link Memory> or keep the default values.



- Click <Ok> button to finish.

The files of the project must be added later.

1.2 TYPE FILE OF PROJECT

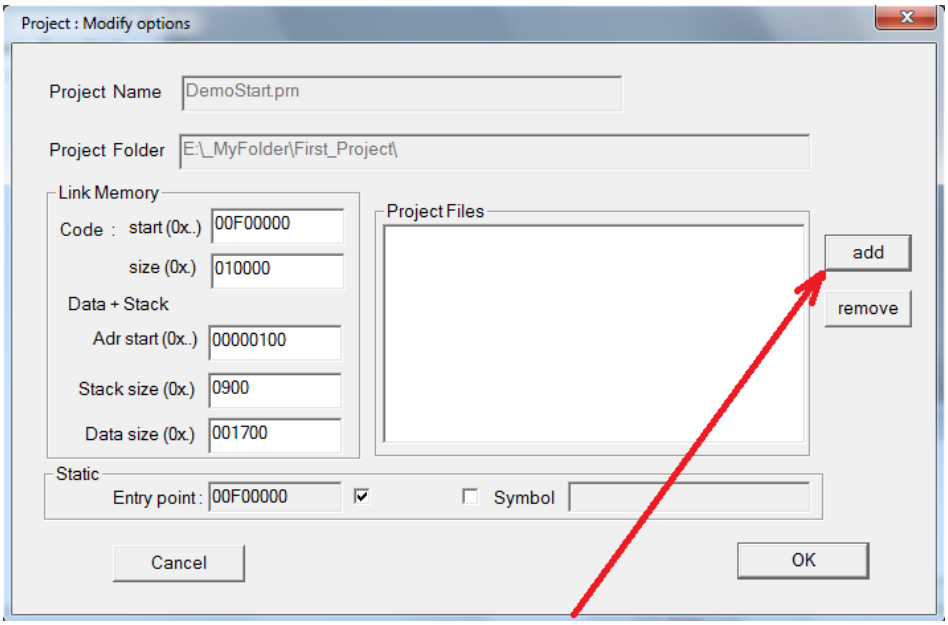
With the menu <File>/<New>, create a file; type your program and save it in assembly file format : "*file_name*"**.asm**

For "*file_name*", use only letters (a/A .. z/Z), figures (0 .. 9) or underscore (_). **Do not use <space> or any special characters.**

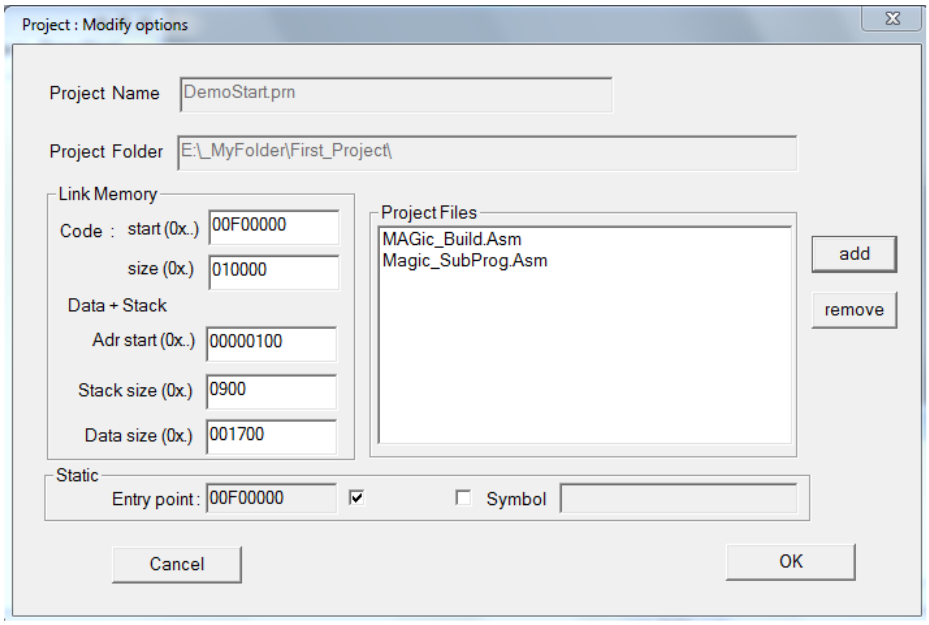
1.3 ADD FILE TO PROJECT

The *"DemoStart"* project have 2 files.

Use the menu <*Project*>/<*Options*> to add files into project :



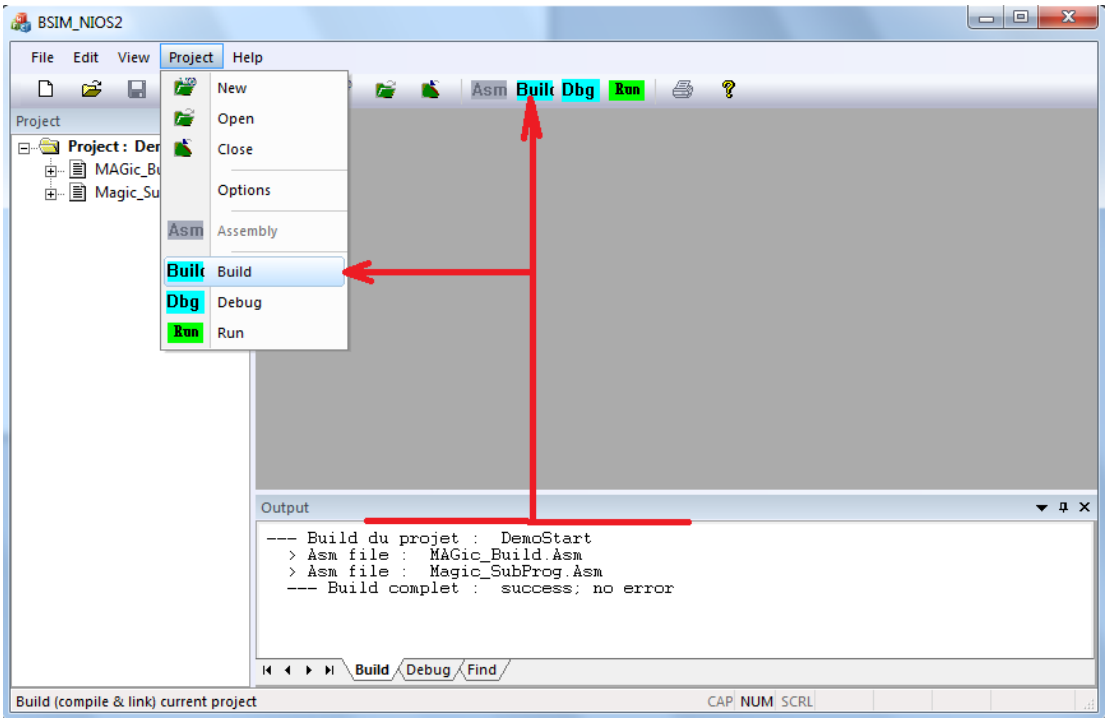
- Click on "add" button to add files
- Select your folder (in this example "*_MyFolder\First_Project_*")
- Select and open your files (one at a time)



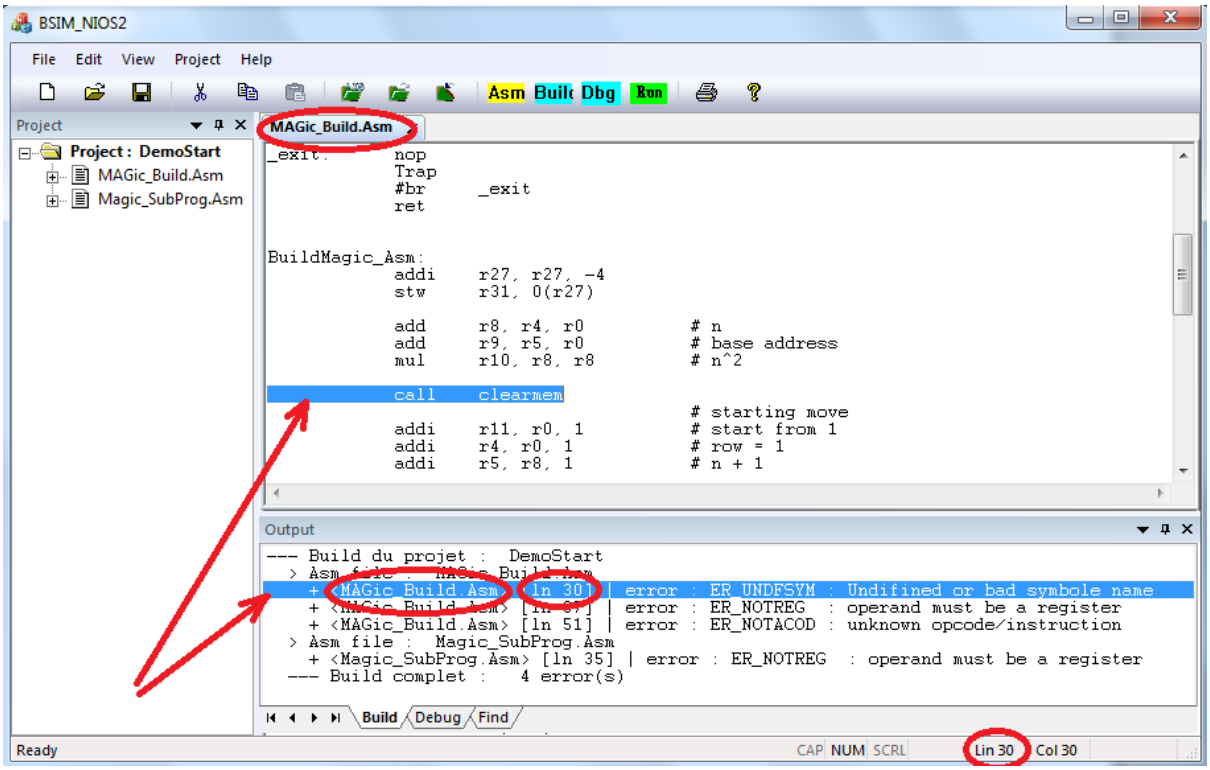
- Click on "Ok" button to finish.

2.1 BUILD PROJECT

Use the menu <*Project*>/<*Build*> to assemble and build project.



If the build generate errors, double-click in the message in *"Output"* window; this will edit the file and highlight the line with error.

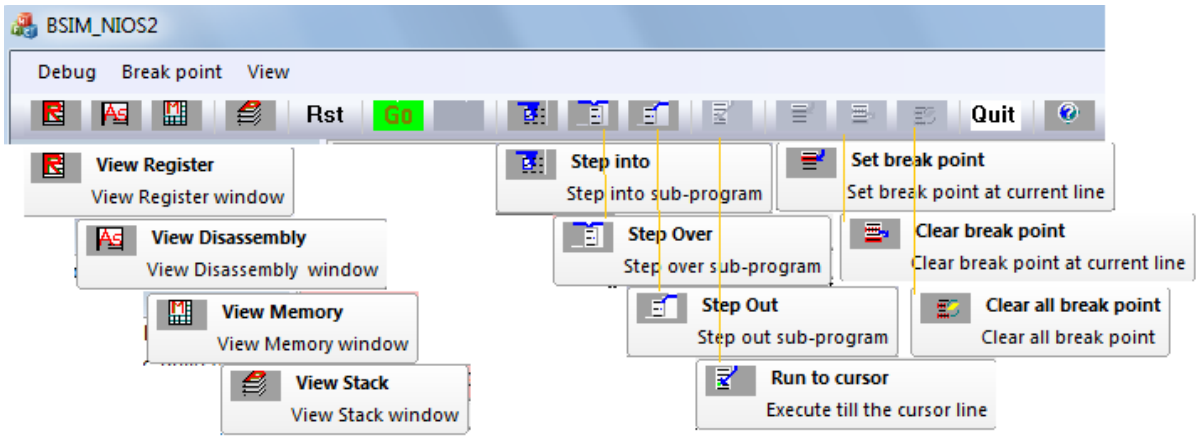


2.2 EXECUTE AND DEBUG PROJECT

Use the menu <*Project*>/<*Debug*> or

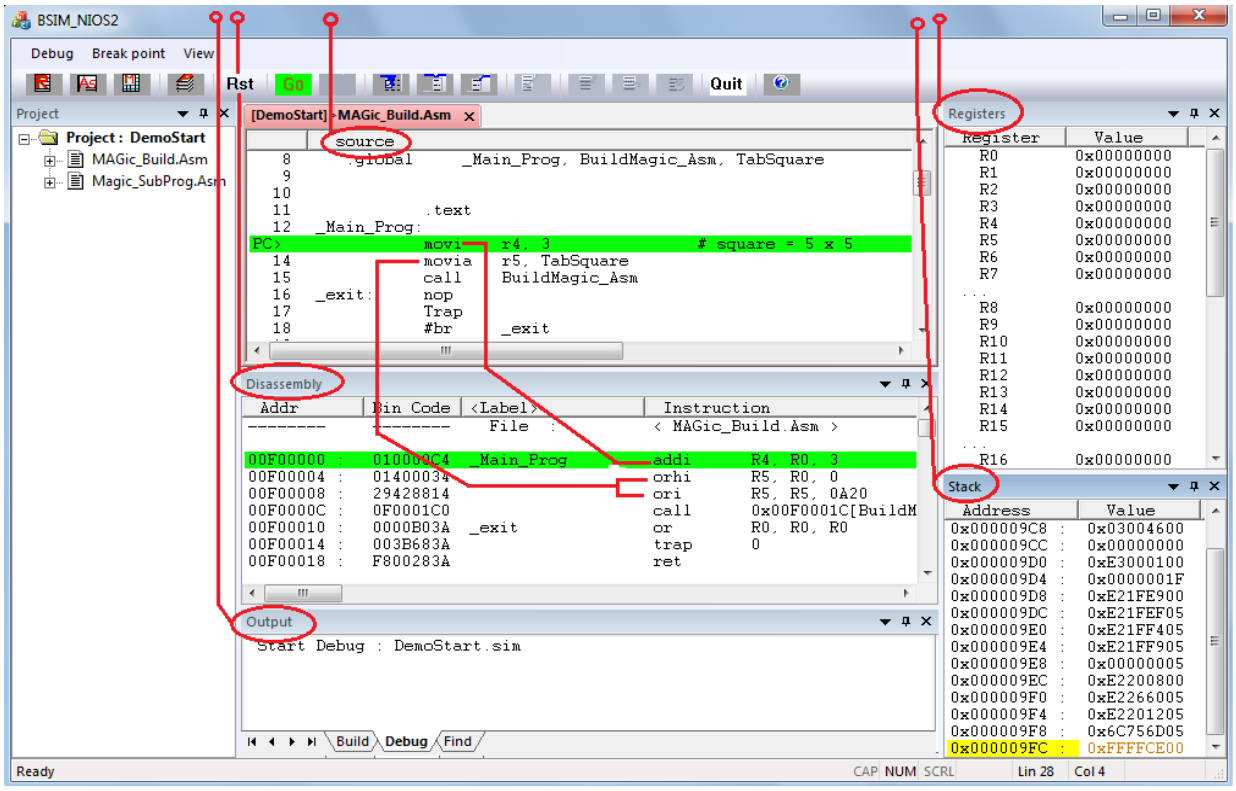
button to enter in *"Debug"* mode.

Debug mode use a new menu and a new tool bar.



When the program counter is in a line with *"call"* instruction, the menu or button *"Step Into"* execute the line and stop in the first line of the sub-program; the menu or button *"Step Over"* execute the line and all sub-program then stop at the line next the call.

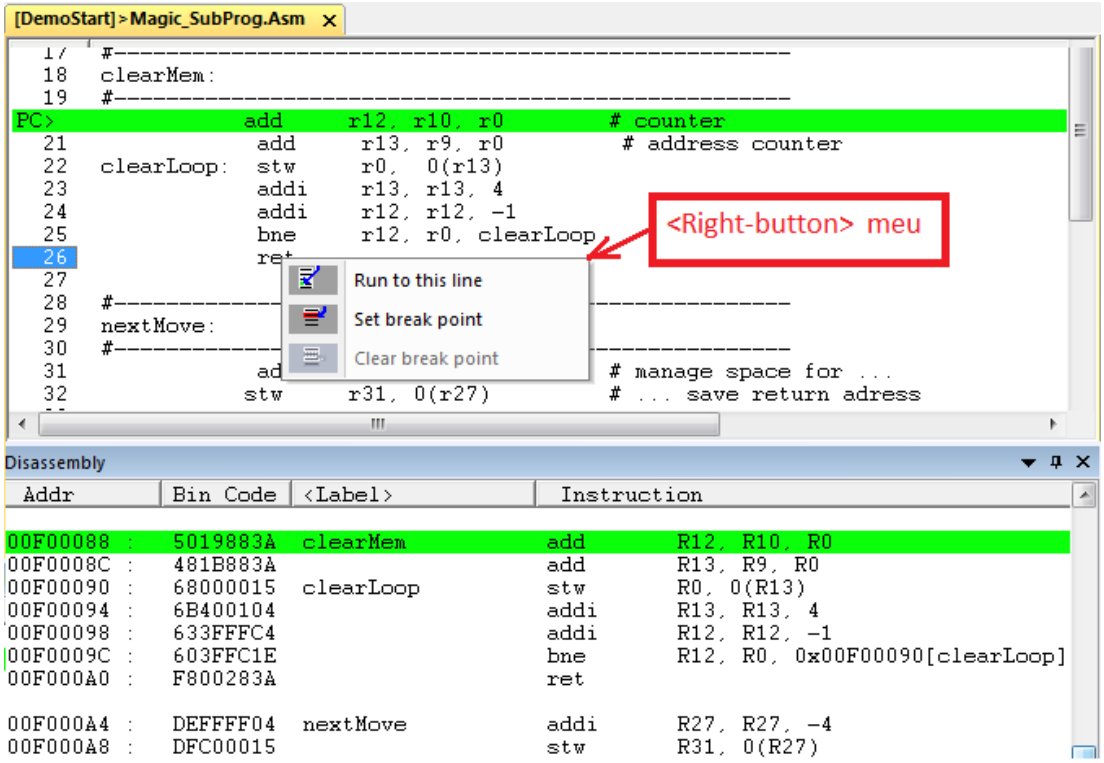
Debug mode display source file, deassembly, register, stack and memory window. Instruction in deassembly window may differ from instruction in source file.



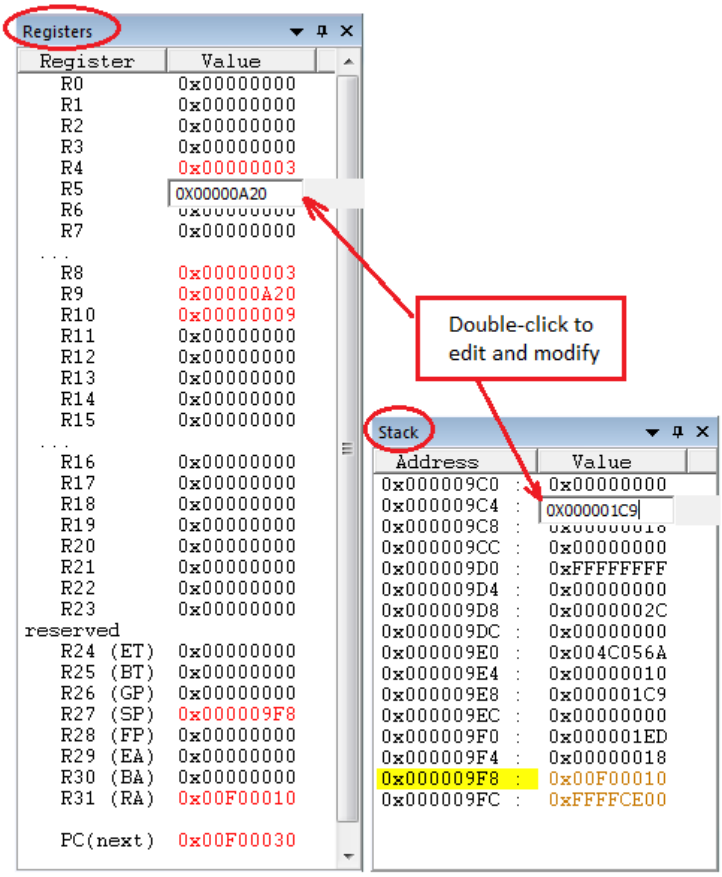
The highlighted line (in green) is the current program counter and the **next instruction** to be executed.

2.3 DEBUG WINDOWS

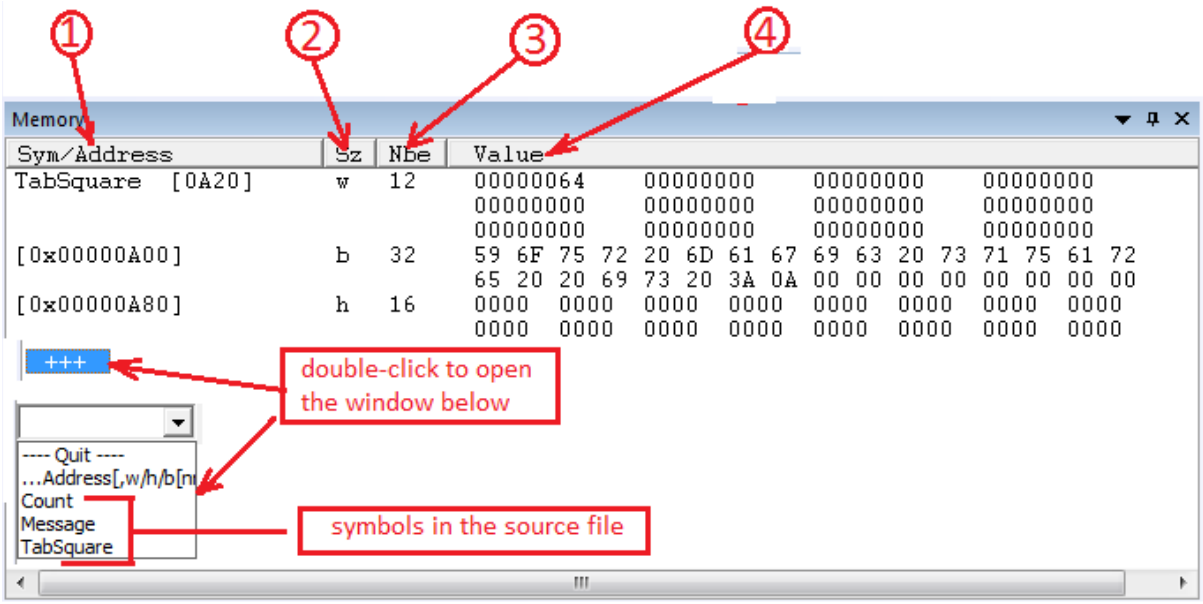
- Source file window



- Registers and stack windows


Registers
Register
Value
R0 0x00000000
R1 0x00000000
R2 0x00000000
R3 0x00000000
R4 0x00000003
R5 0X00000A20
R6
R7 0x00000000
R8 0x00000003
R9 0x00000A20
R10 0x00000009
R11 0x00000000
R12 0x00000000
R13 0x00000000
R14 0x00000000
R15 0x00000000
R16 0x00000000
R17 0x00000000
R18 0x00000000
R19 0x00000000
R20 0x00000000
R21 0x00000000
R22 0x00000000
R23 0x00000000
reserved
R24 (ET) 0x00000000
R25 (BT) 0x00000000
R26 (GP) 0x00000000
R27 (SP) 0x000009F8
R28 (FP) 0x00000000
R29 (EA) 0x00000000
R30 (BA) 0x00000000
R31 (RA) 0x00F00010
PC(next) 0x00F00030
Double-click to edit and modify
Stack
Address
Value
0x000009C0 : 0x00000000
0x000009C4 : 0X000001C9
0x000009C8 :
0x000009CC : 0x00000000
0x000009D0 : 0xFFFFFFFF
0x000009D4 : 0x00000000
0x000009D8 : 0x0000002C
0x000009DC : 0x00000000
0x000009E0 : 0x004C056A
0x000009E4 : 0x00000010
0x000009E8 : 0x000001C9
0x000009EC : 0x00000000
0x000009F0 : 0x000001ED
0x000009F4 : 0x00000018
0x000009F8 : 0x00F00010
0x000009FC : 0xFFFFCE00

- **Memory window**



1 – Double-click in the last line (**[+++]**) to select a symbol in the program or enter an address. Address may be followed by a size (b, h or w) and a number of values displayed (Nbe).

2 - Double-click in the column to select or change the size of displayed value. **W(or w)** : display a word value (32 bits) in 8 hexadecimal digits. **H(or h)** : display a half-word value (16 bits) in 4 hexadecimal digits. **B(or b)** : display a byte value (8 bits) in 2 hexadecimal digits.

3 - Double-click in the column to select or change the number of displayed value.

4 – Displayed values.