MICROCAMP Quick Start
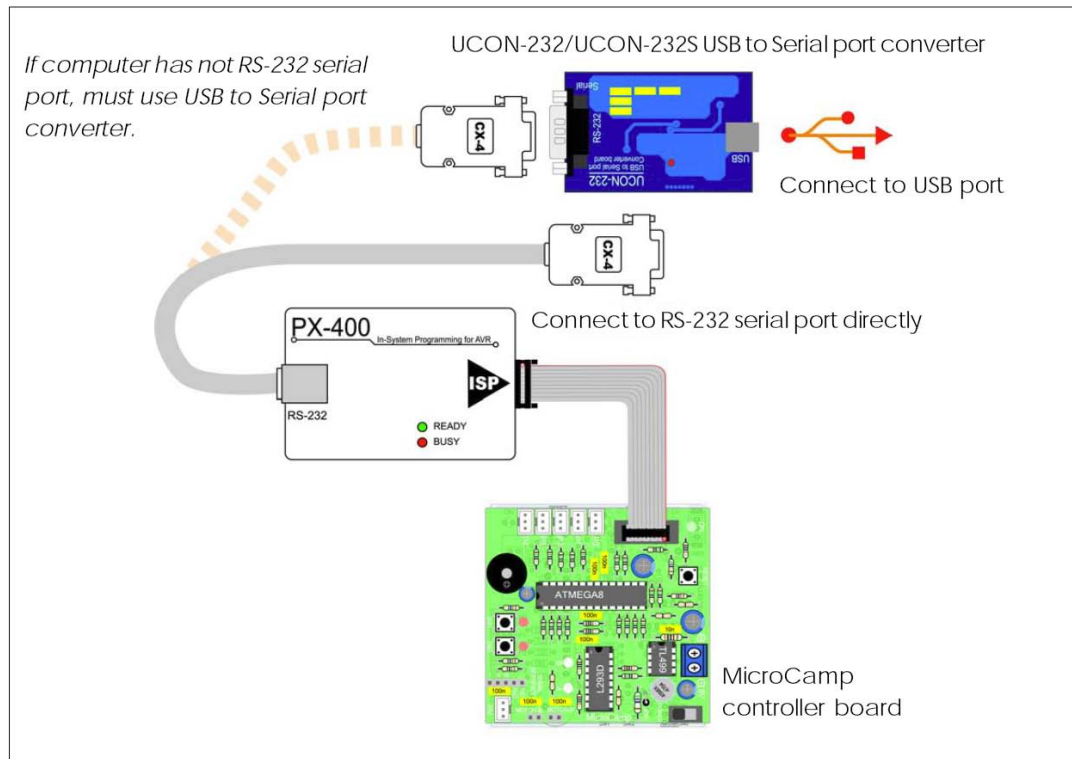
Once you have assembled the Microcamp Robot, follow the below step by step instructions to quick start your programming for the Microcamp board.

1) **Ensure the following are in place :**
   1. PX-400 is plugged into your Computer's Serial port or via a USB to Serial Device (ucon232s is higher recommended)

   2. The Microcamp Controller board has 4 good AA batteries in its battery compartment.

2) **Installation of WINAVR and AVR STUDIO software**
   1. *Installation of AVR Studio*
      i. Put in the Microcamp CDROM
      ii. Run the "aStudio4b460.exe" file or equivalent
      iii. Follow the onscreen instructions until the installation is complete
   2. *Installation of later version of AVR Studio*
      i. Run the "aStudio4b528.exe" file or equivalent
      ii. Follow the onscreen instructions until the installation is complete
   3. *Installation of WINAVR*
      i. Run the "WinAVR-20050214-install.exe" file or equivalent
      ii. Follow the onscreen instructions until the installation is complete
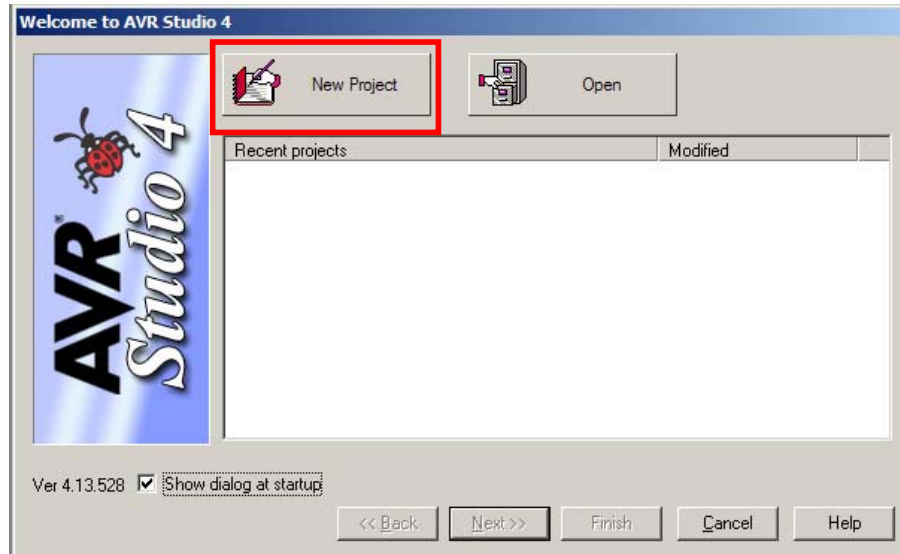
3) COPY all required library files

1. Copy the whole "MicroCamp_include" folder located in the CDROM into the C:\WinAVR-20070525 directory or the directory that WINAVR was installed into.
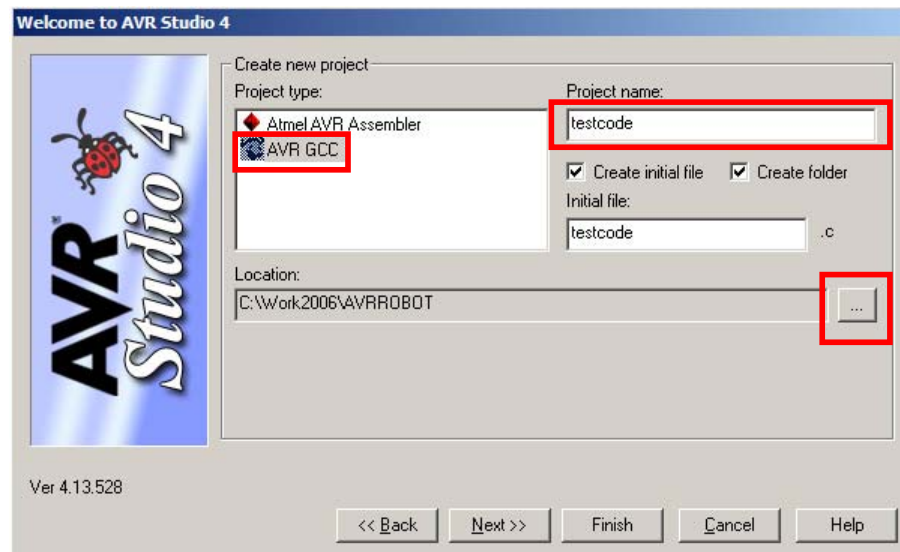
4) Starting AVR Studio

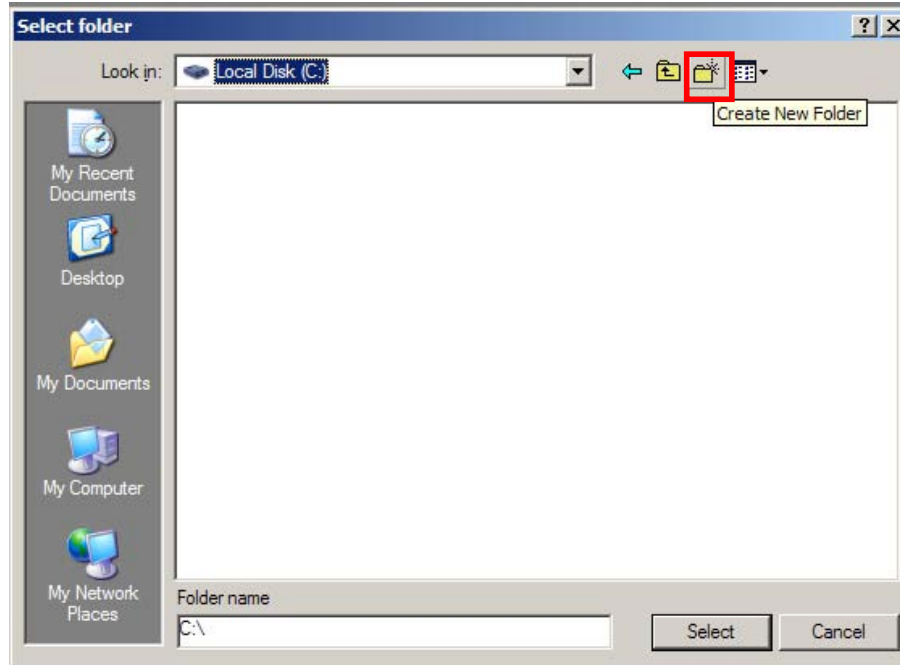1. Double click on the "AVR Studio 4" program icon.

2. After the AVR Studio software starts, you will see this window
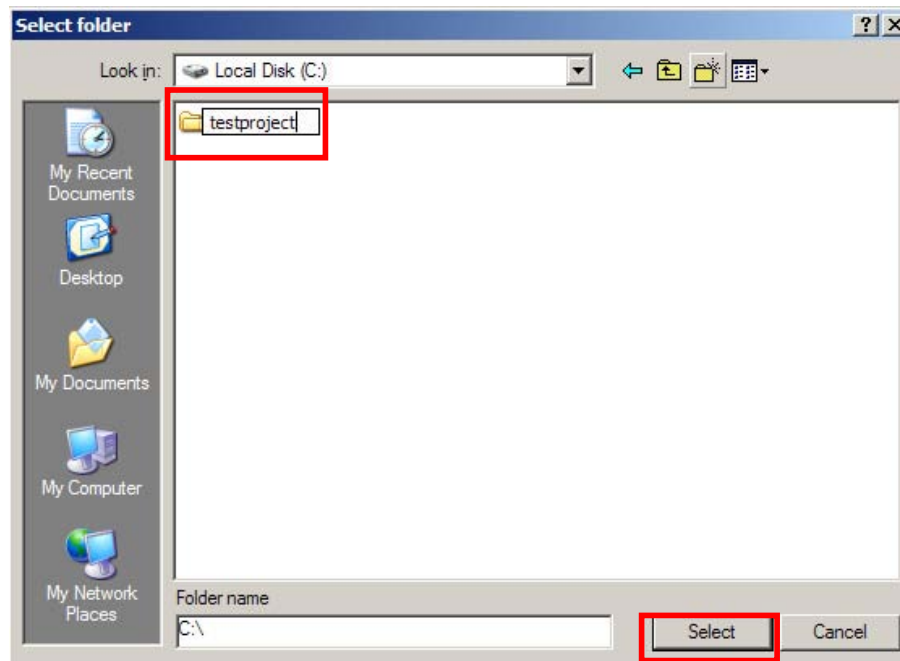3. Click on the "**New Project**" Button

4. Choose **AVR GCC** and type in the project name as **"testcode"**
5. Click on the "..." to chose your project folder

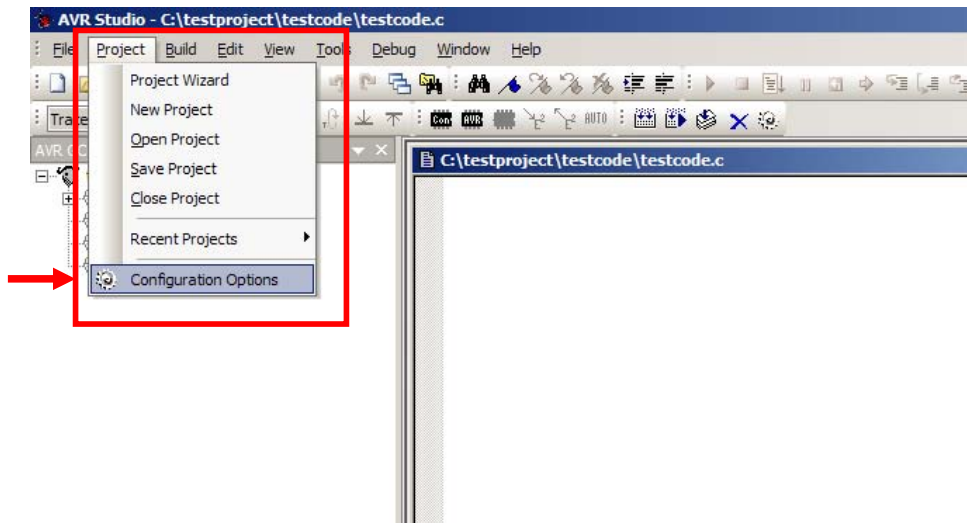6. Click on the "Create New Folder" icon to create a new folder.

7. Type in **"testproject"** as the folder
8. Double Click on it
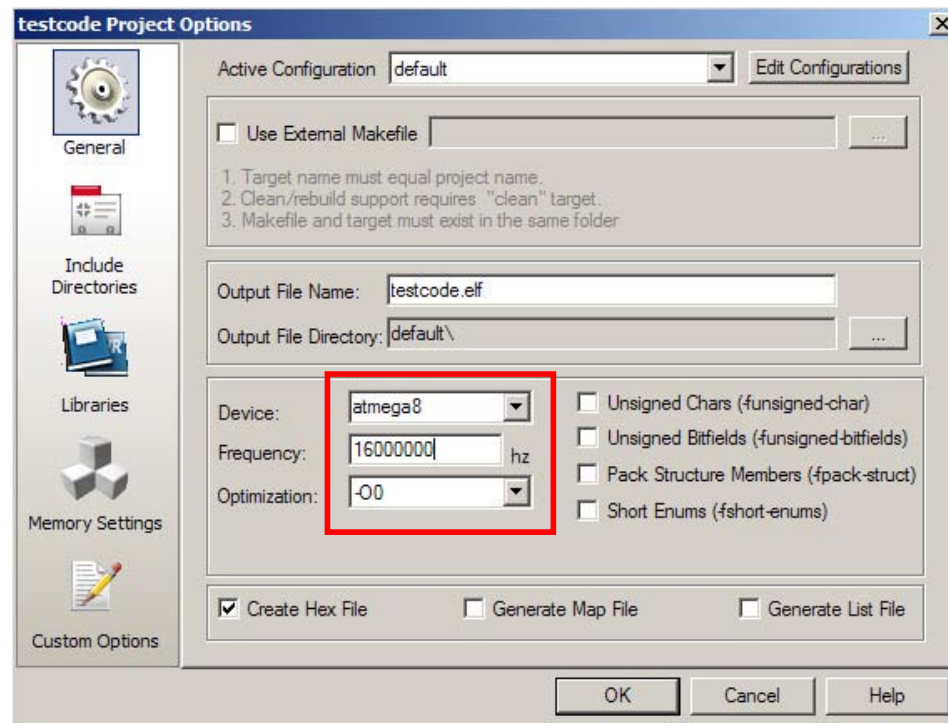9. Click on the **Select** button
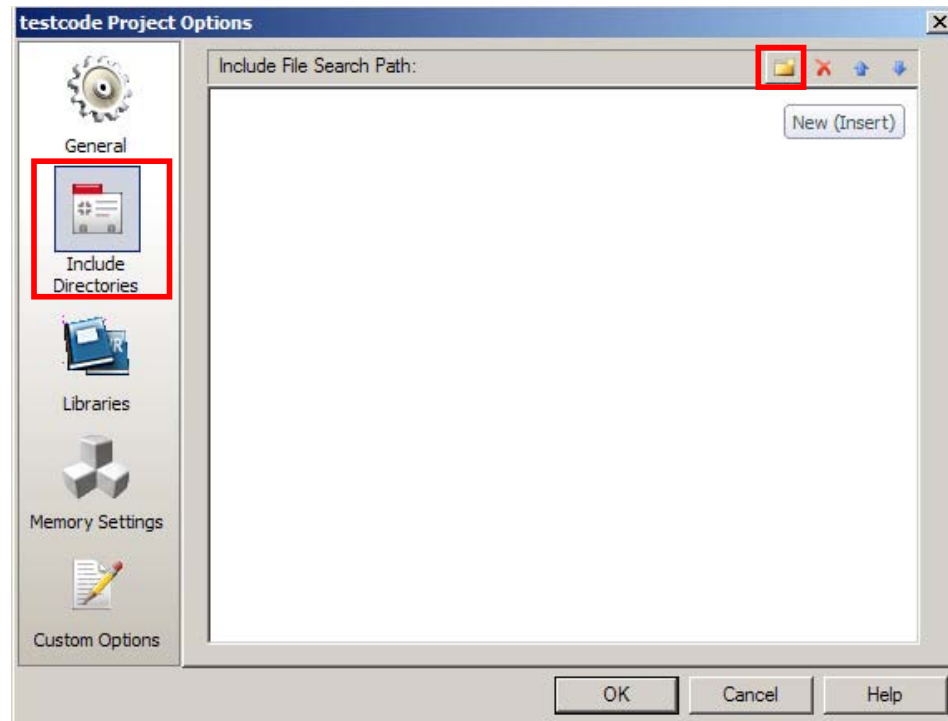
10. Click on the **"Finish"** Button

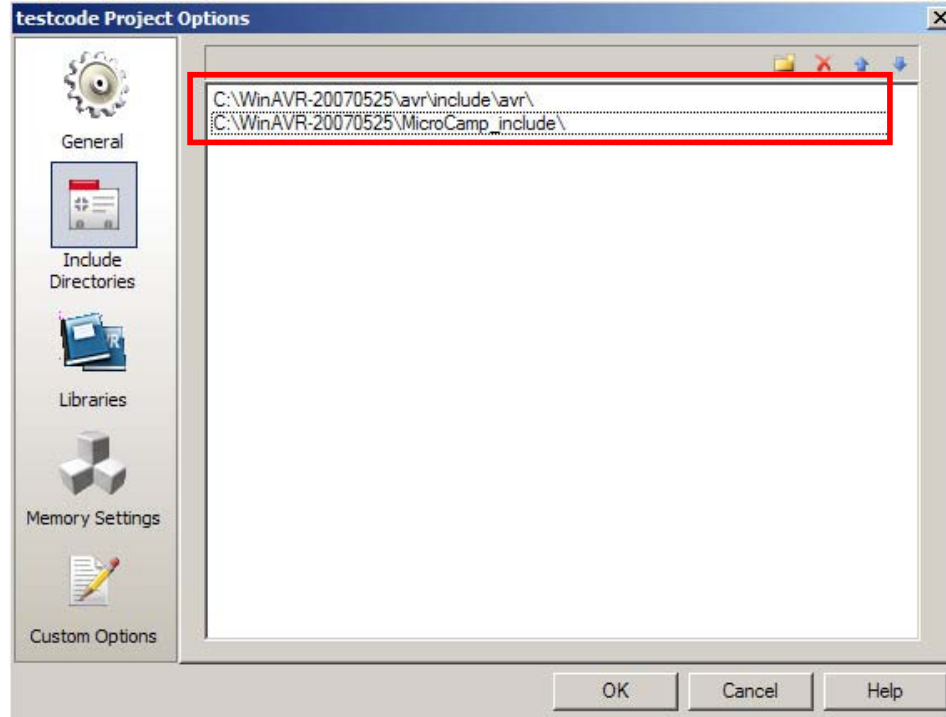11. Click on "**Project**" tab, followed by the "**Configuration Options**"

12. Choose the Device as "**atmega8**"
13. Put "**16000000**" in the hz box

14. Choose the **"Include Directories"** ICON
15. Click on the **"New (Insert)"** button

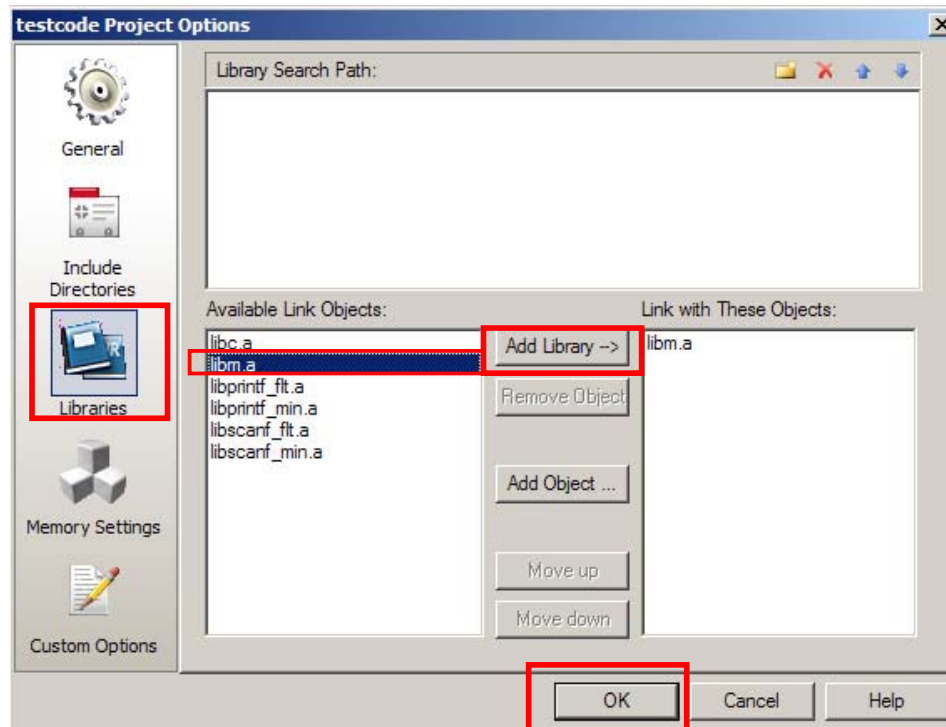16. Choose the following 2 directories :

17. Choose the **"Include Directories"** ICON
18. Select the "**libm.a**" file on the left "**Available Link Objects**"
19. Click on the "Add Library" button
20. "**libm.a**" will then be added into the "**Link with These Objects**"
21. Click on the **"OK"** button.

5) Entering your Program Code:

      1.

```
#include <in_out.h>
#include <sleep.h>
#include <motor.h>
#include <analog.h>


void main()
{
        while(1)
        {
                forward(100);
                sleep(200);
                backward(100);
                sleep(200);
        }

}
```
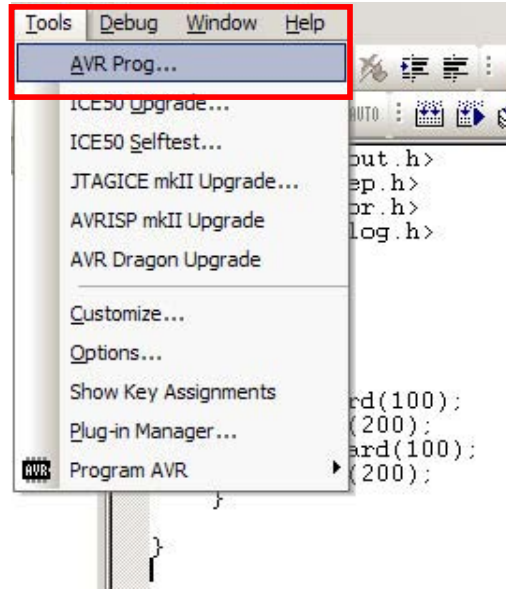
2. Press the "F7" key to compile.
3. You should see something like "Build Succeeded with 3 warning …."
4. It is ok to have some warning after your build but if you encounter any errors, you will need to recheck your code or if all your include directories are correct.

6) Programming your Microcontroller Board

1. Make sure that your Microcamp Controller board is plugged into the PX-400 and the PX-400 to your computer.
2. Turn on the Microcamp controller board.
3. Click on the "Tools" and then AVR Prog tab

4. Click on the Browse button and select the HEX file, which is the compiled file from your project folder's default directory.
5. Choose ATmega8 under the Device Selection
6. Lastly Click on the "Program" button under the Flash section.
7. A Progress bar will show the downloading of the code to the Microcamp Controller Board.
8. Run the Microcamp board to confirm that the code is successfully downloaded.