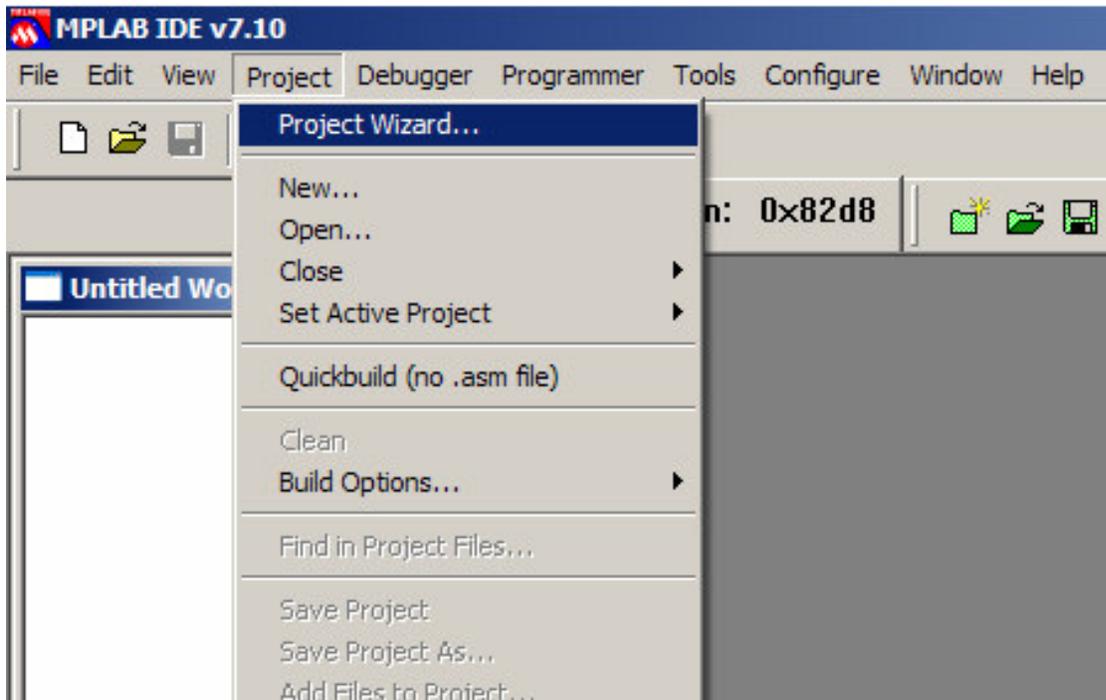


Application Note - MPLAB IDE Guide

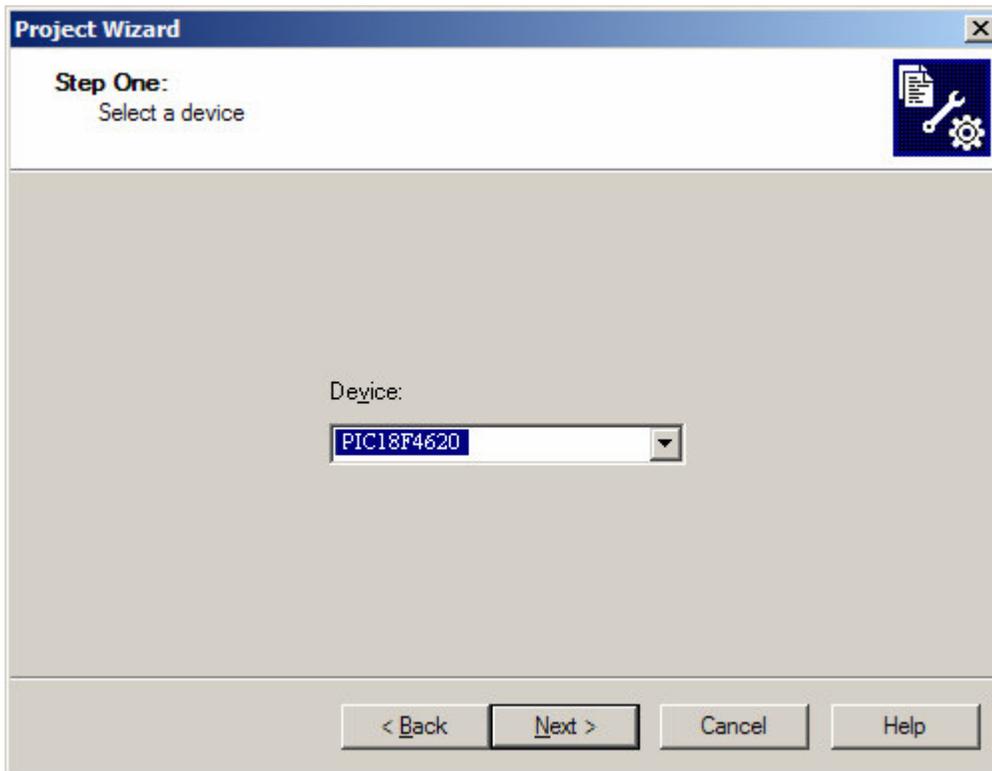
Creating a new project

The easiest way to create a new project is by using the Project Wizard. The followings are the step by step instructions of how to create a new project for your iMicro Controller board.

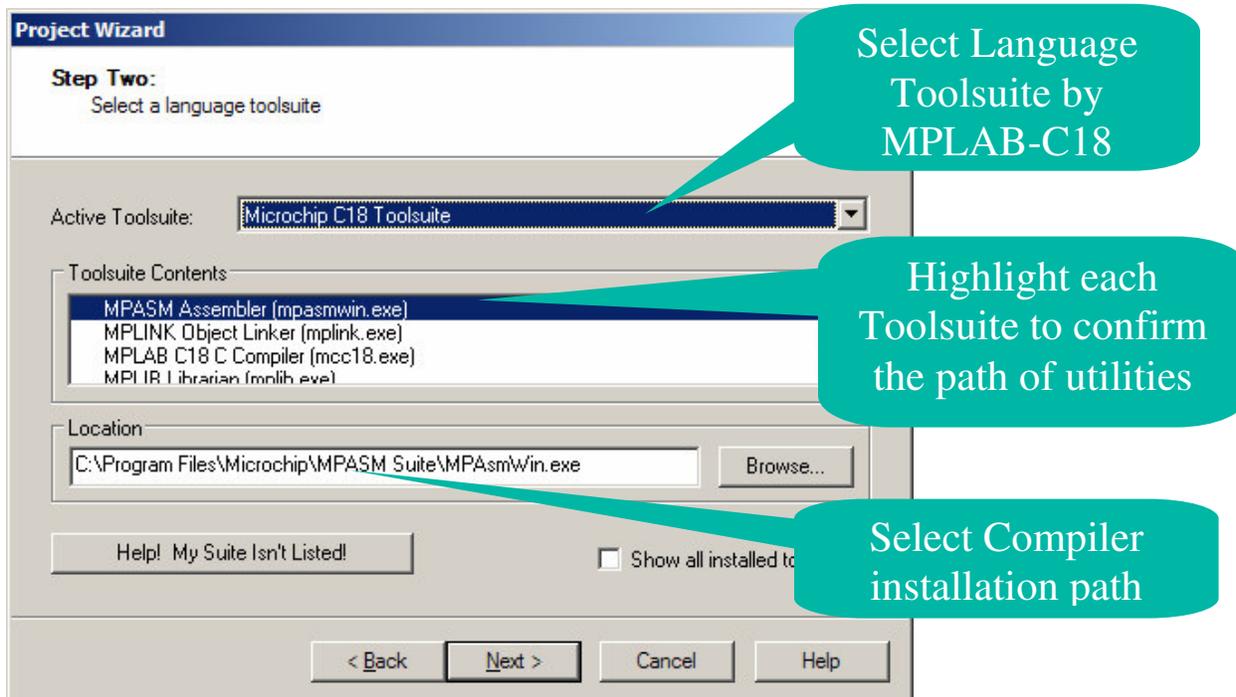
1. From the project menu, choose Project Wizard.



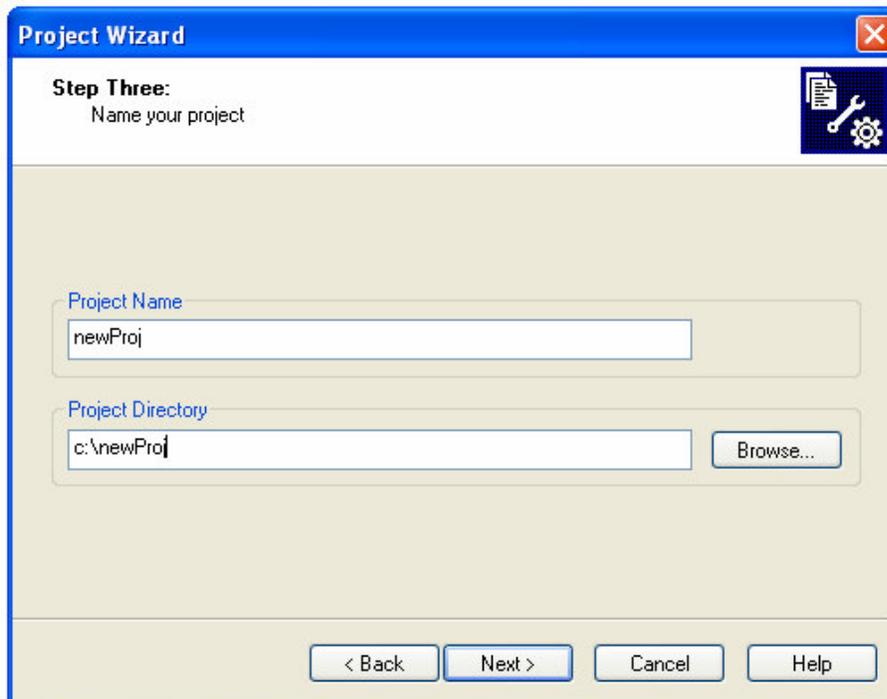
2. Press Next and Select the device. For iMicro Controller board, the device is *PIC18F4620*.



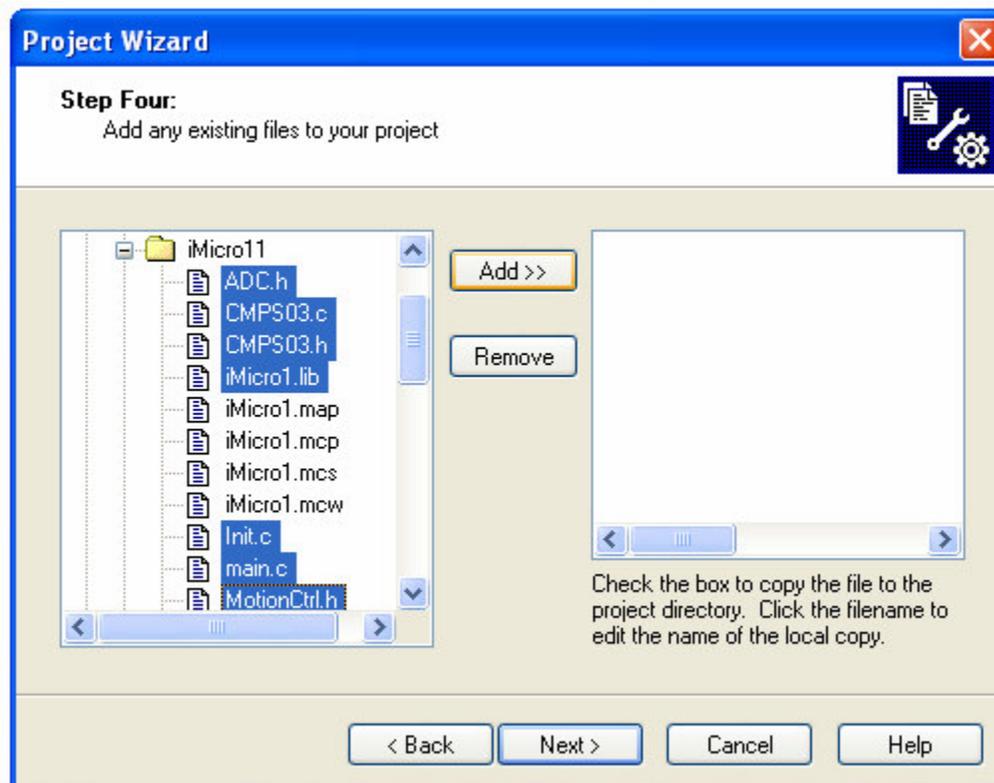
3. Then select the language toolsuite as *Microchip C18 Toolsuite*.



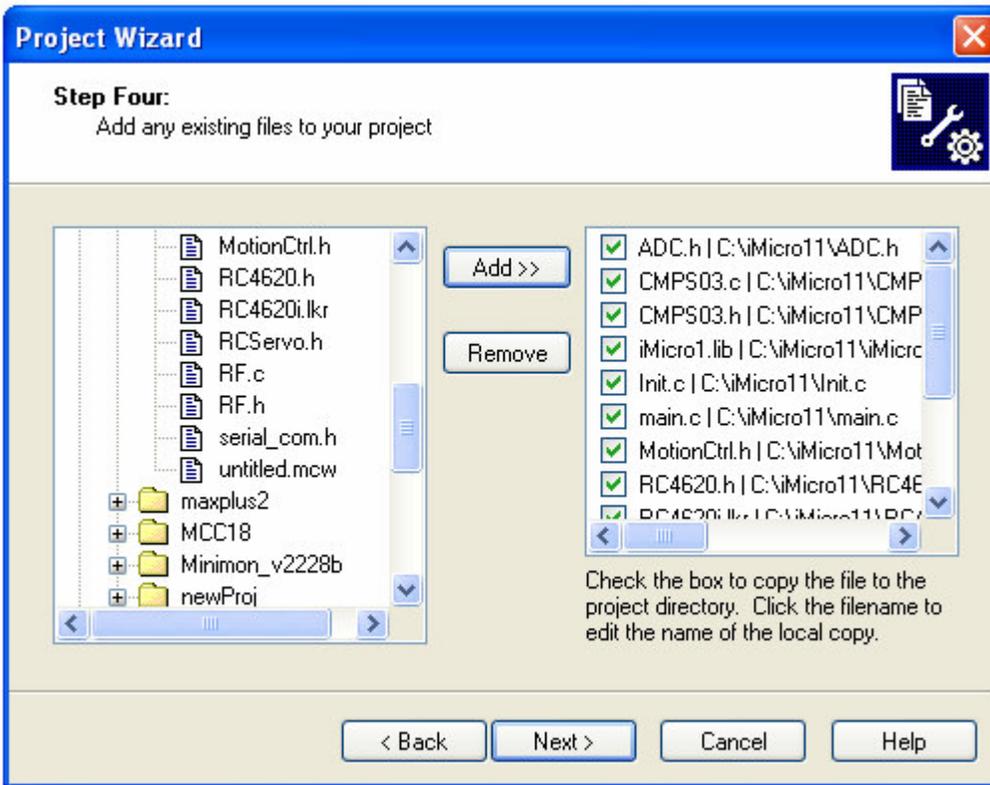
4. Name your project and specify the project directory.



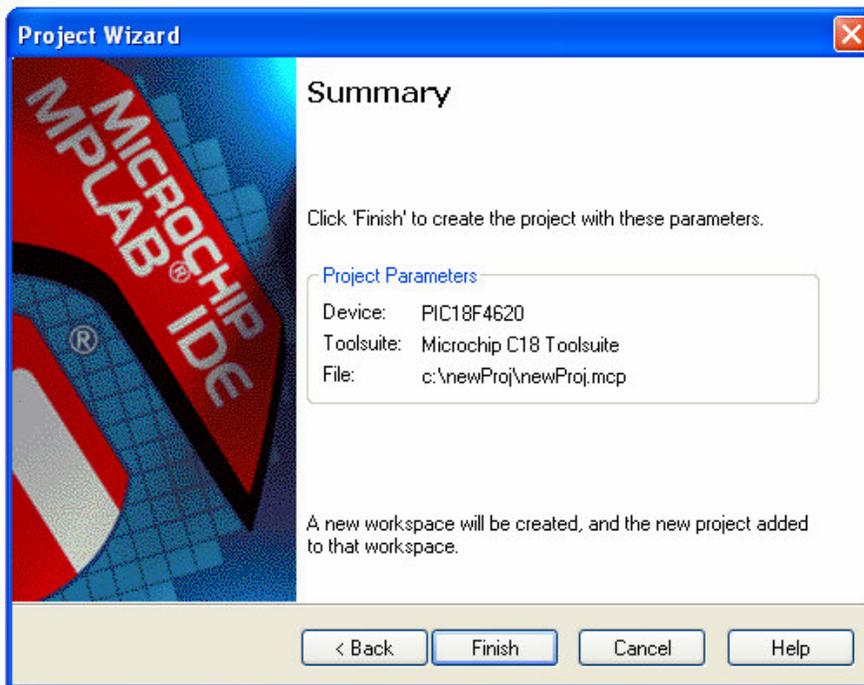
5. Add all the .c, .h, .lib and .kr files from iMicro11 folder into your newProj.



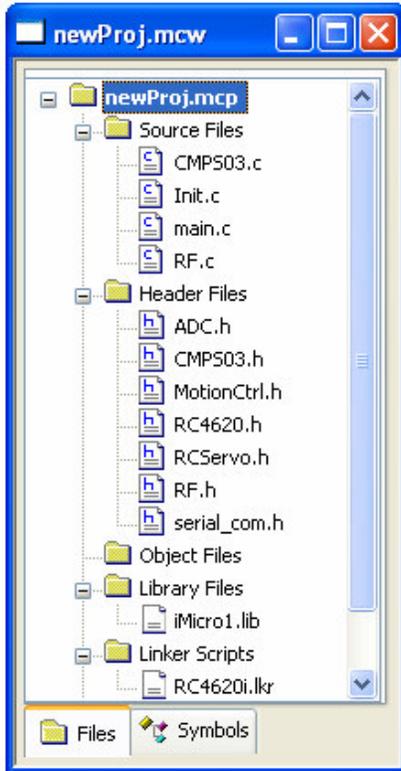
6. Check all the checkboxes so that all the files are copied into a newProj folder.



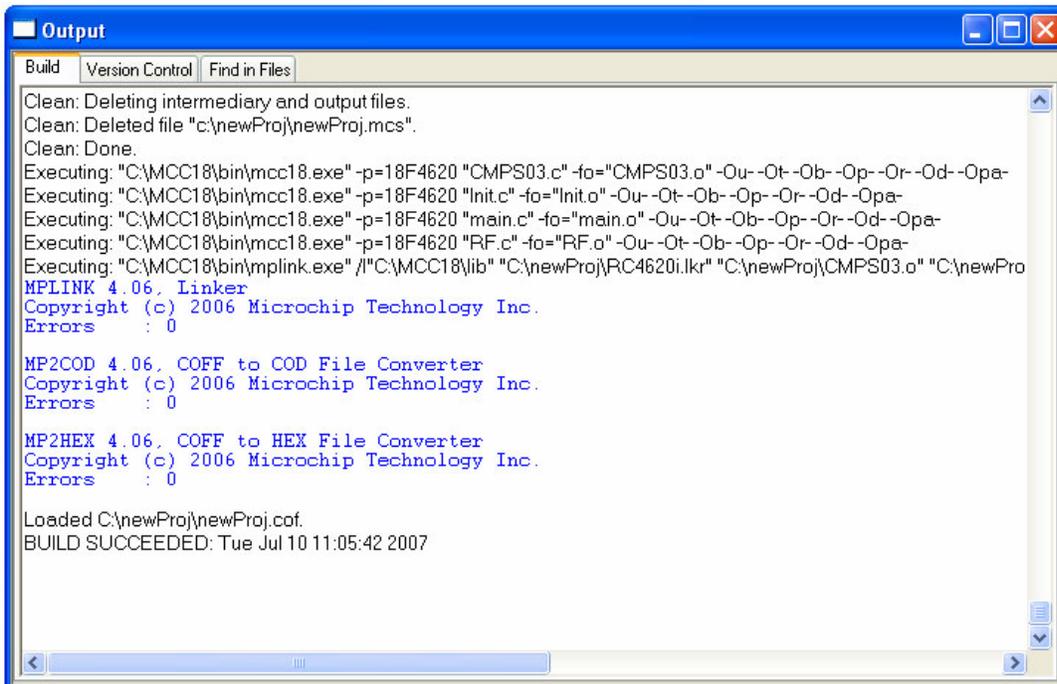
7. Press Next> and a new project is successfully created.



8. Press Finish and you will see the project window as below with all the files under their respective folder.



9. Then Compile the program by pressing Ctrl+F10 or press the button  and you should be able to see the output window as below.



After creating a new project using the above simple steps, you can start your software adventure by adding your own .c and .h files into your newly built project. For all the useful functions provided by iMicro1.lib, please refer to the iMicro_Software Guide.

How to edit the linker file

In our iMicro software, 2 sections of data memory are used to store the variables. As you can see in the linker file (RC4620i.lkr), it is initialized as below:

```
SECTION NAME=LIB_DATA    RAM=gpr1
SECTION NAME=MAIN_DATA  RAM=gpr3
```

Gpr1 is used for data relating to the iMicro library and the grp3 is used to store the user variables.

Declaring the variables

New variables can be declared in the MAIN_DATA section and the proper way of declaring those variables can be seen in main.c as below:

```
#pragma udata MAIN_DATA
    char HeartCount;
    char DelayCounter;
    .
    .                //your new variables
    .
    .
    .
#pragma udata
```

As mentioned above, each data bank can store 256 bytes of data. So if your variable declaration exceeds 256 bytes, the linker will give an error as follow :

MPLINK 4.06, Linker

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Error - section 'MAIN_DATA' has a memory 'gpr3' which can not fit the section. Section 'MAIN_DATA' length=0x000004b2.

Errors : 1

In such case, you will need to create another data section for your extra variables. For example, if grp4 is to used as a new section to store the extra data, you will need to add the following code into the linker file.

```
SECTION NAME=EXTRA_DATA  RAM=gpr4
```

After initialized the section, all the extra data can be declared in the EXTRA_DATA section as follow:

```
#pragma udata EXTRA_DATA
    int test_data[10];
    char sample;
    .
    .                //your extra variables
    .
    .
    .
#pragma udata
```