

# PROGRAMMING A PIC

1. Open MPLAB IDE from the desktop icon or go to Start | Programs | Microchip MPLAB IDE | MPLAB IDE
2. Go to Project | Project Wizard.

## PROJECT WIZARD

### STEP 1:

Choose the device (PIC) you're using. Probably the 16F84A.

### STEP 2:

These fields should already be set to....

#### Active Toolsuite:

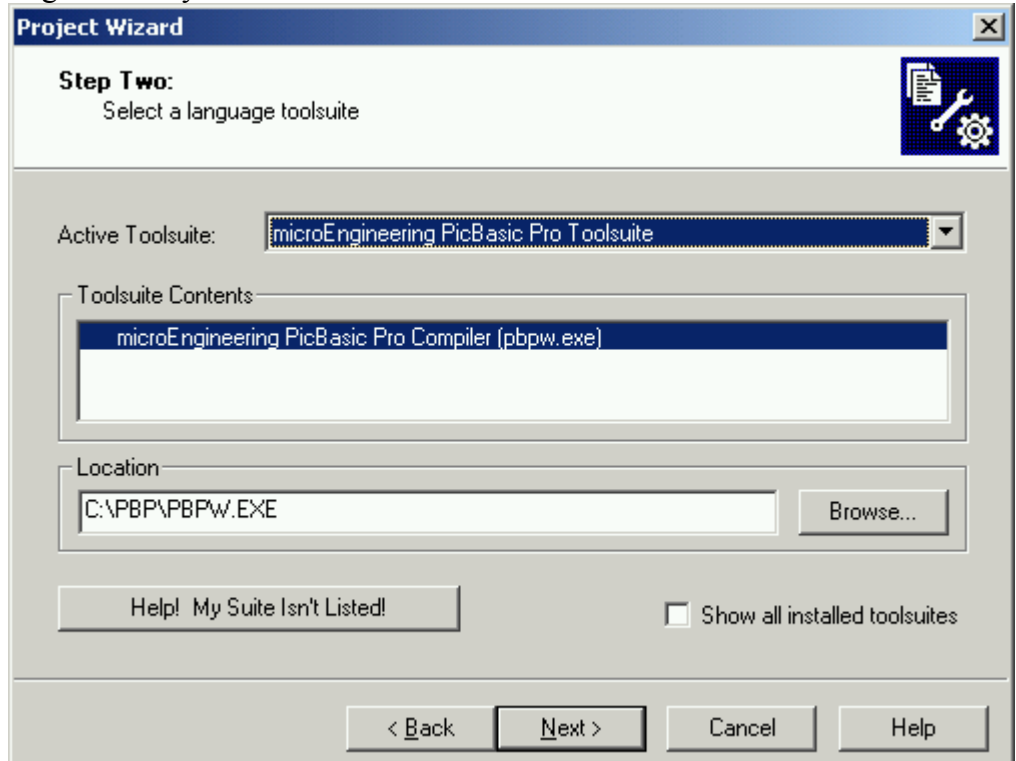
microEngineering PicBasic Pro Toolsuite

#### Toolsuite Contents:

microEngineering PicBasic Pro Compiler (pbpw.exe)

#### Location:

C:\PBP\PBPW.EXE

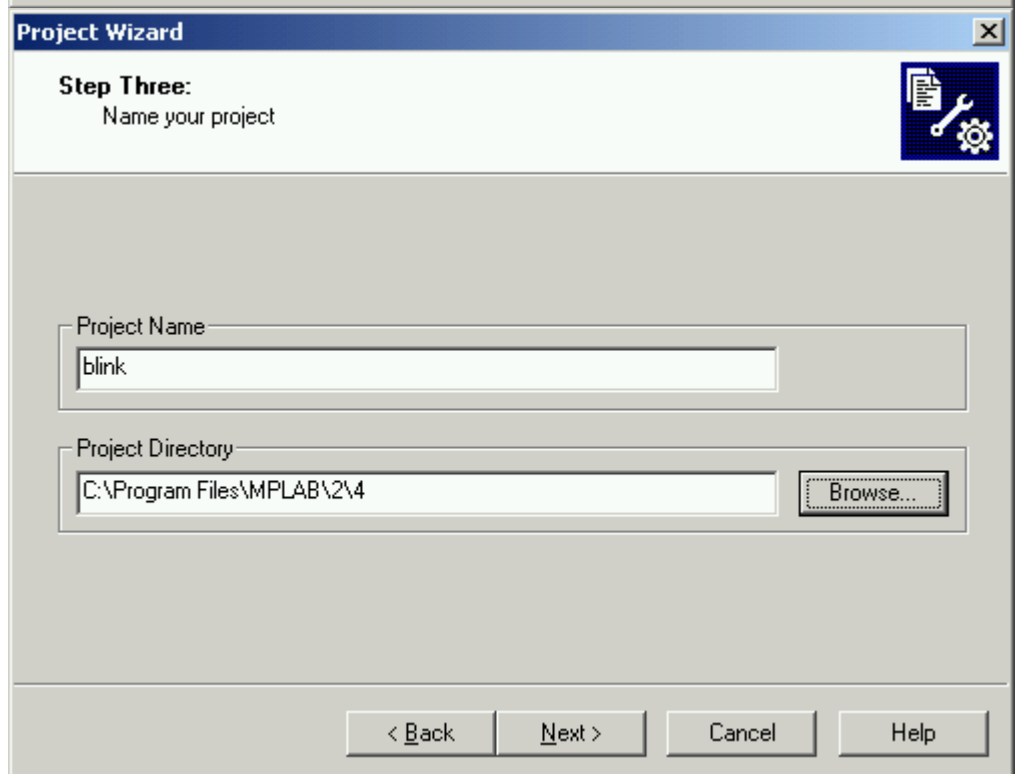


The screenshot shows the 'Project Wizard' dialog box at 'Step Two: Select a language toolsuite'. The 'Active Toolsuite' dropdown is set to 'microEngineering PicBasic Pro Toolsuite'. Below it, the 'Toolsuite Contents' list shows 'microEngineering PicBasic Pro Compiler (pbpw.exe)'. The 'Location' field contains 'C:\PBP\PBPW.EXE' with a 'Browse...' button to its right. At the bottom, there is a 'Help! My Suite Isn't Listed!' button, a checkbox for 'Show all installed toolsuits', and navigation buttons for '< Back', 'Next >', 'Cancel', and 'Help'.

### STEP 3:

**Project Name:** 8 or less characters

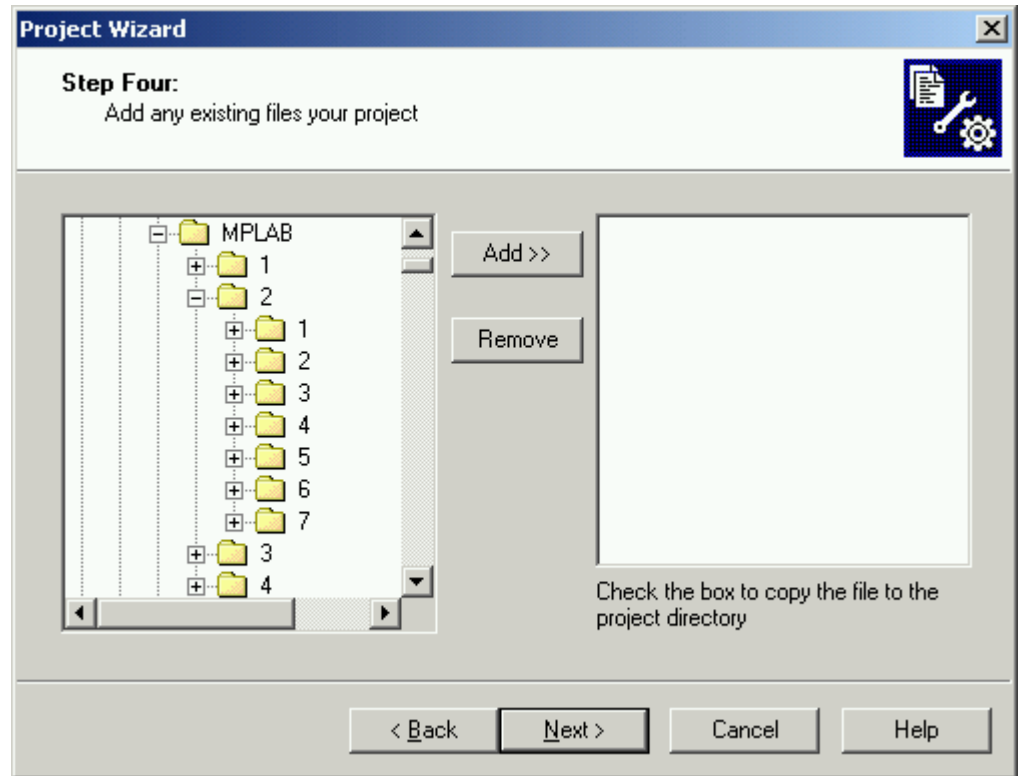
**Project Directory:** Where to save the files that go in your project. You can save this to your U: drive or C:\Program Files\MPLAB\<10s of group number>\<1s of group number>. For example, if you're group 24, save it to c:\Program Files\MPLAB\2\4



The screenshot shows the 'Project Wizard' dialog box at 'Step Three: Name your project'. The 'Project Name' field contains 'blink'. The 'Project Directory' field contains 'C:\Program Files\MPLAB\2\4' with a 'Browse...' button to its right. At the bottom, there are navigation buttons for '< Back', 'Next >', 'Cancel', and 'Help'.

## STEP 4:

If you had already created a .bas file (the type of file where your code is written), you could add it here. If you haven't written your code yet, just hit Next.



**NOTE** – An alternative to steps 3-5 below is to use the Microcode Studio editor to create and edit your code. Microcode provides in-line help, interactive syntax checking, and development tools that help you minimize errors.

### 3. Go to File | New

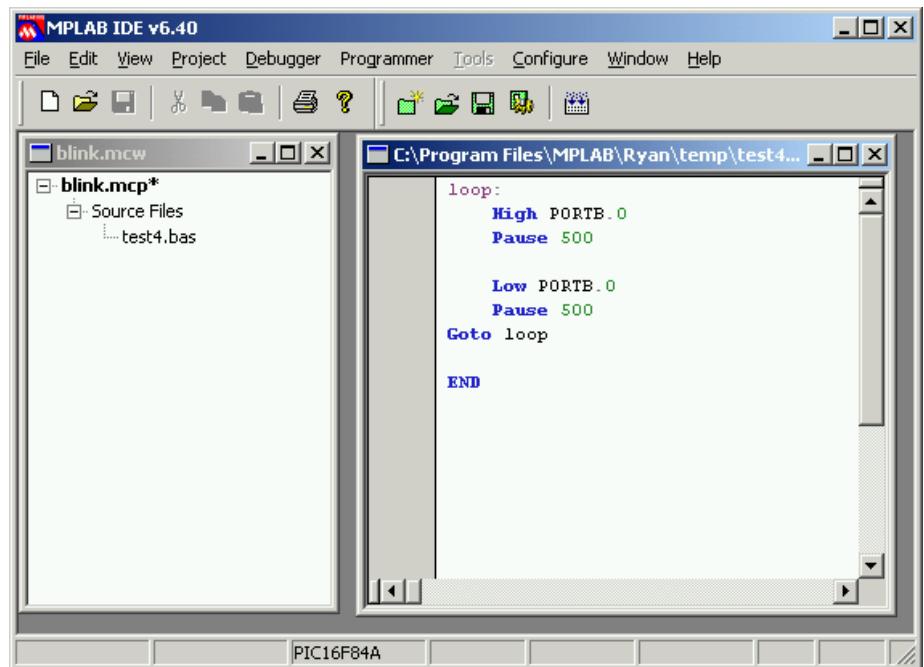
This opens a new window in which to write your code. Before writing any code, however...

### 4. Go to File | Save As...

Browse to the folder in which you created your project (Step 3 of the Project Wizard). Save your file with the same name as the project but add .bas to the end. For example, blink.bas. It won't add .bas automatically, so remember to add it yourself.


### 5. Write your code!

In the empty window, write your PicBasic code.



### 6. Go to Project | Add Files to Project...

Browse to the folder where you just saved your .bas file and open that.

7. After writing your code, compile it. Either go to Project | Compile, hit F10, or click on the  icon.

8. An Output window describing the results of the compilation is displayed. If there were no errors in your code, it will tell you that the BUILD SUCCEEDED. If you had an error, it will say BUILD FAILED and indicate which line number(s) the ERROR was on. If you had errors, go back and fix them (start with the lowest line number). If you get an error about it not being able to find MPASMWIN, follow the MPASMWIN instructions below.

9. Go to Configure | Configuration Bits (if the Configuration Bits window is not visible already ). Make sure the following settings are selected:

- **Oscillator:** XT
- **Watchdog Timer:** On
- **Power Up Timer:** On
- **Code Protect:** Off

If you are using a PIC other than the PIC16F84, make sure other settings are set properly for your application. These settings need to be checked after every compile cycle.

10. Go to Programmer | Select Programmer | PICSTART Plus

11. Go to Programmer | Enable Programmer

12. Put your PIC in the PICSTART Plus programmer. Lift the handle of the ZIF socket, and put your PIC in so that pin 1 (top left) is at the top left of the socket. Push the handle back down to lock the PIC in place.

13. Go to Programmer | Program

14. Click Yes on the warning window.

15. Wait until the progress bar on the bottom of the screen stops moving and the ACTIVE LED on the PICSTART Plus programmer turns off.

16. Take out your PIC and close MPLAB IDE.

## MPASMWIN Instructions

Follow this only if you get the error in step 8...

1. Go to Start | Settings | Control Panel | System | Advanced | Environment Variables
2. Choose Path from the System Variables and Edit...
3. Add to the end of the current Variable Values “;C:\MPASM” (don’t delete any of the others!)
4. After adding this, you will need to restart you computer for it to take effect.

