ĐẠI HỌC QUỐC GIA TP.HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC BÁCH KHOA
KHOA ĐIỆN-ĐIỆN TỬ
BỘ MÔN KỸ THUẬT ĐIỆN TỬ

Embedded System Design

A Basic Tutorial for MPLAB IDE

1

References

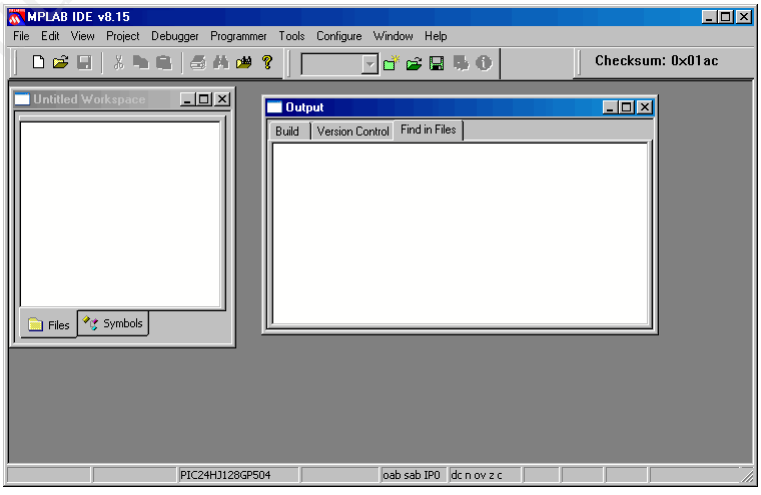
- Materials
  - Microchip, "MPLAB IDE User's Guide", Elsevier Newnes, 2009
- Websites
  - http://www.microchip.com

PIC KIT

Bộ môn Kỹ Thuật Điện Tử - ĐHBK

MPLAB

- MPLAB® IDE DESKTOP



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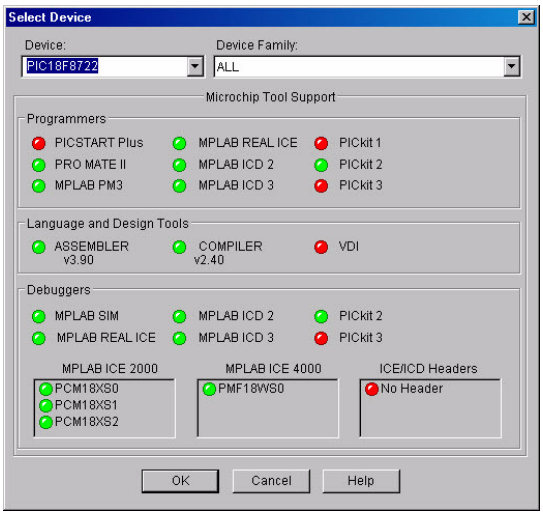
How to use

All projects will have these basic steps:

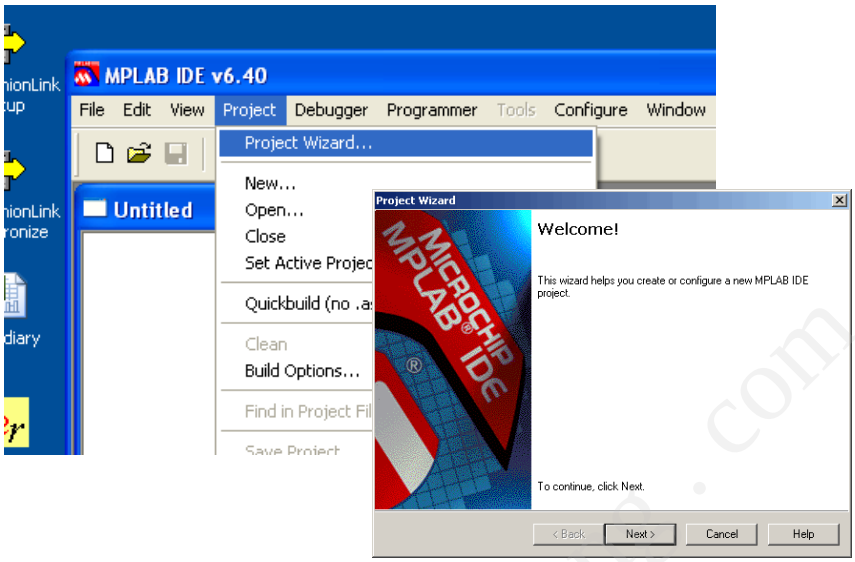
1. Select Device – Chọn thiết bị
2. Create Project – Tạo dự án
3. Select Language Tools – Chọn ngôn ngữ
4. Put Files in Project – Đặt file vào dự án
5. Create Code – Tạo mã chương trình
6. Build Project – Xây dựng dự án
7. Test Code with Simulator – Kiểm tra mã với phần mềm mô phỏng

1. Select Device

- Choose *Configure>Select Device.*



2. Create Project



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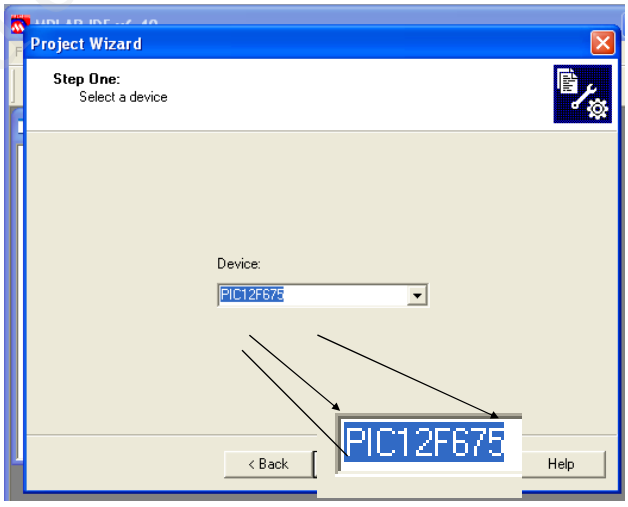
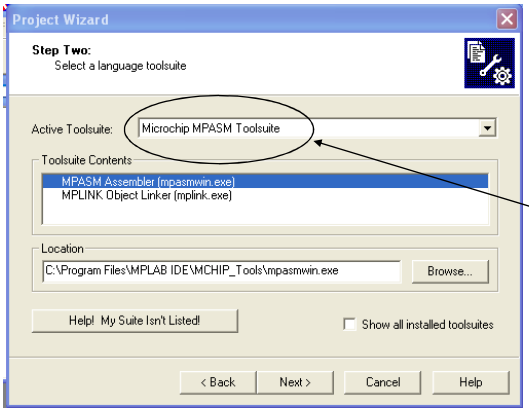
2. Create Project



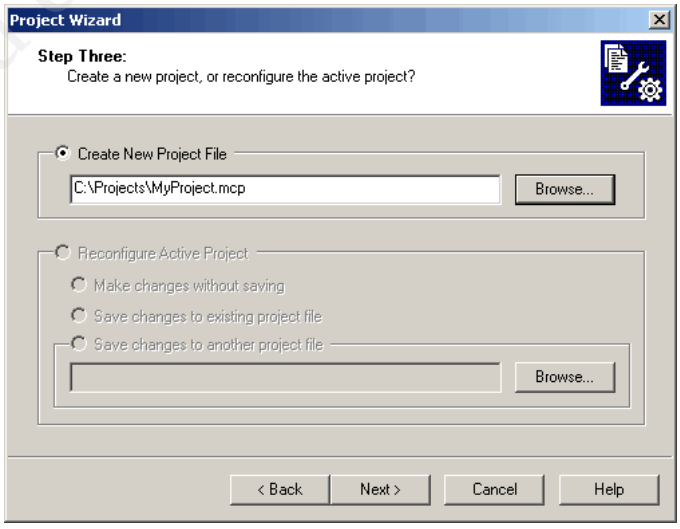
Bộ môn Kỹ Thuật Điện Tử - ĐHBK

3. Select Language Tools



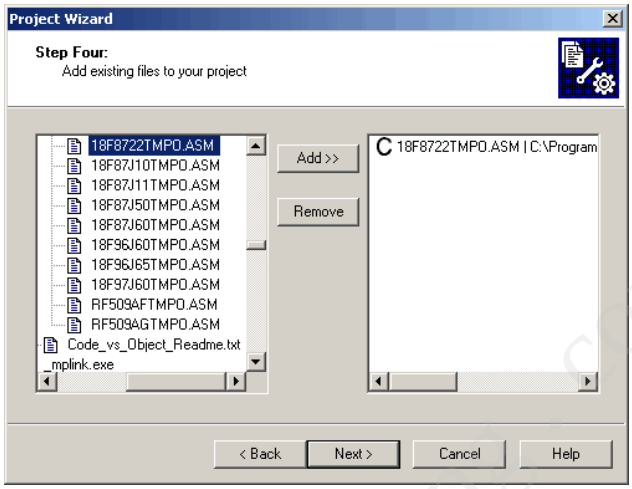
you should select
the assembler tools
(We do not provide basic)

Name your project



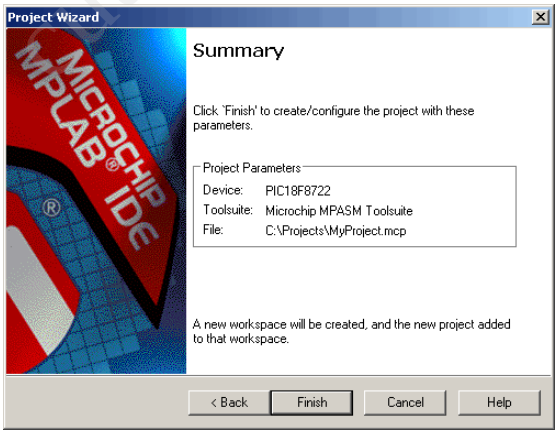
4. Put Files in Project

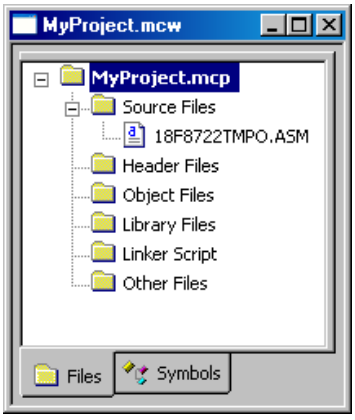
The template files are simple files that can be used to start a project



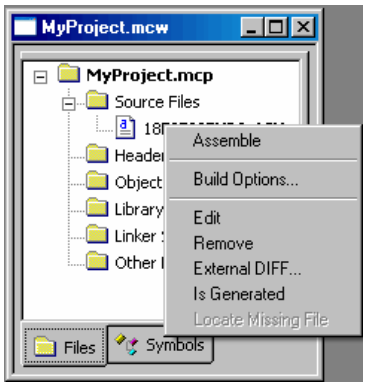
Project wizard - Summary

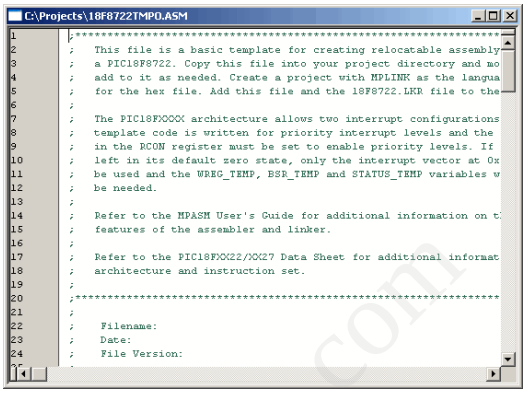
- After pressing the **Finish button, review the Project Window on the MPLAB IDE** desktop





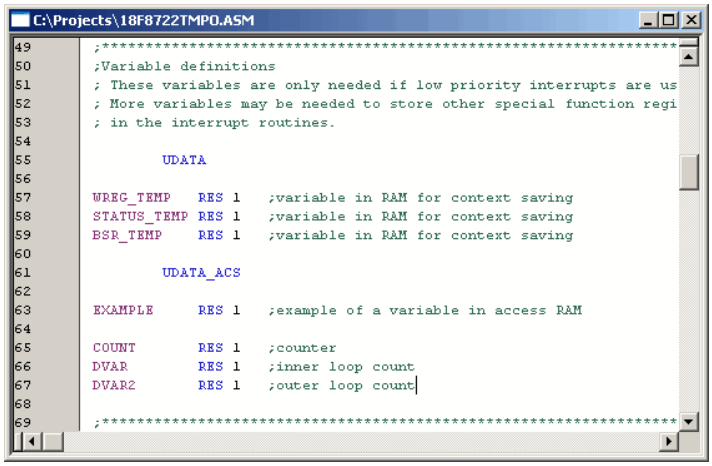
5. Create Code



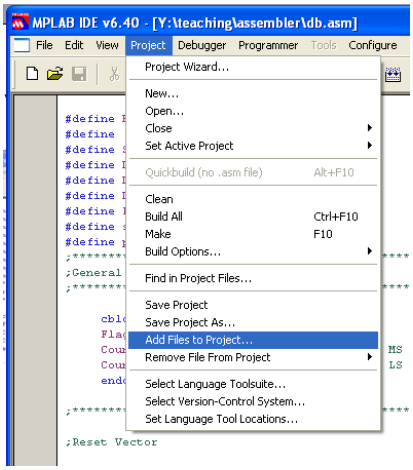


Project context menu (right mouse click)

5. Create Code – Add variables



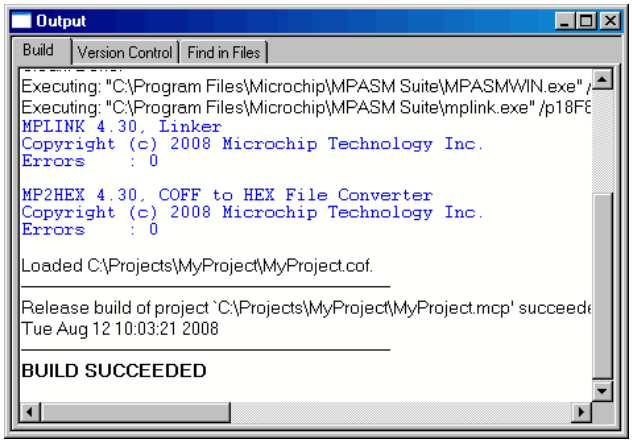
Add to project



- Once the file is saved you can add it to your project

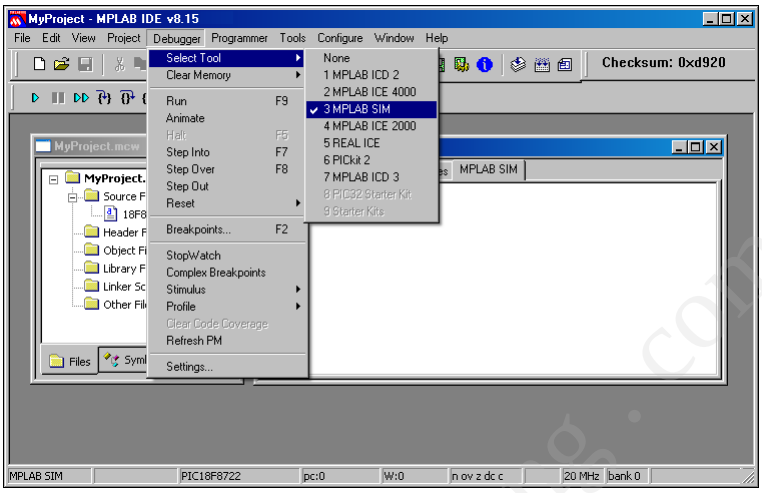
6. Build Project

- *Project>Build All*
- Select *Project>Build Options>Project and click on the* ***MPASM Assembler tab.***
- Select "Output" from the "Categories" drop-down list.



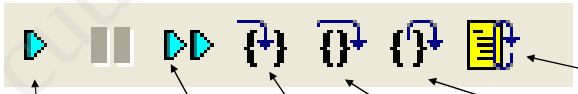
7. Test Code with Simulator

- *Debugger>Select Tool*



7. Test Code with Simulator

Simulator toolbar



reset

step out of routine

step over routine

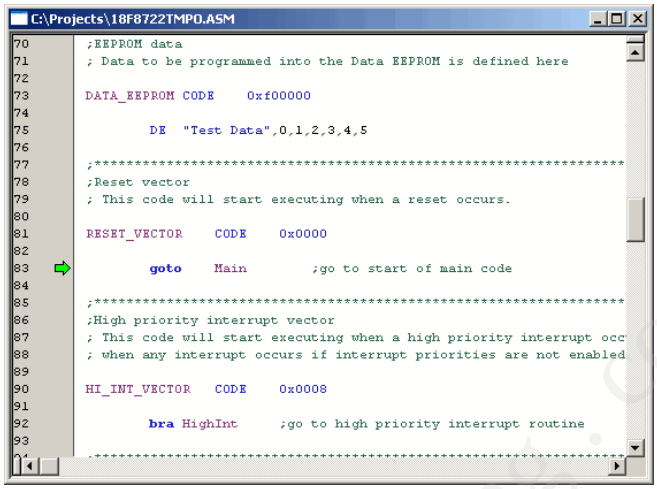
step into

animate

run

7. Test Code with Simulator

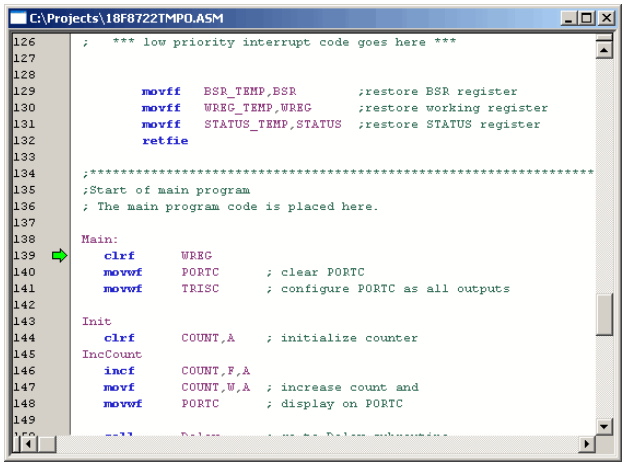
- Select *Debugger>Reset>Processor Reset*



Code after processor reset

7. Test Code with Simulator

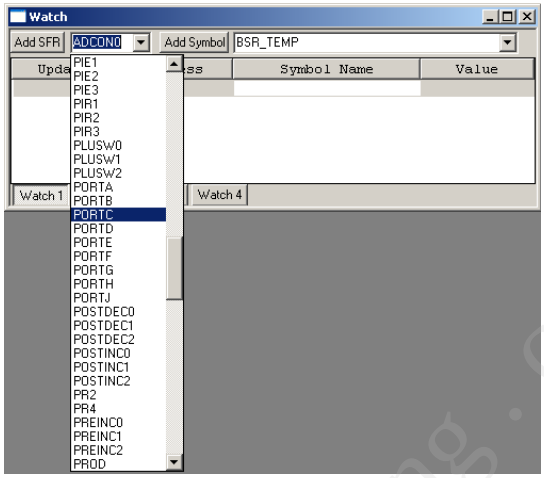
- Select *Debugger>Step Into to single step to the code* at Main.



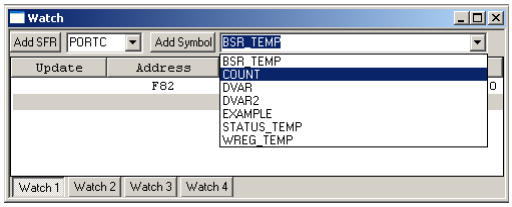
Code after step into

7. Test Code with Simulator

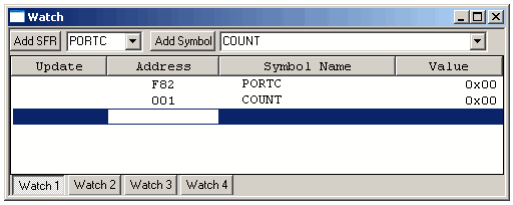
- Select *View>Watch to bring up an* empty Watch window.



7. Test Code with Simulator



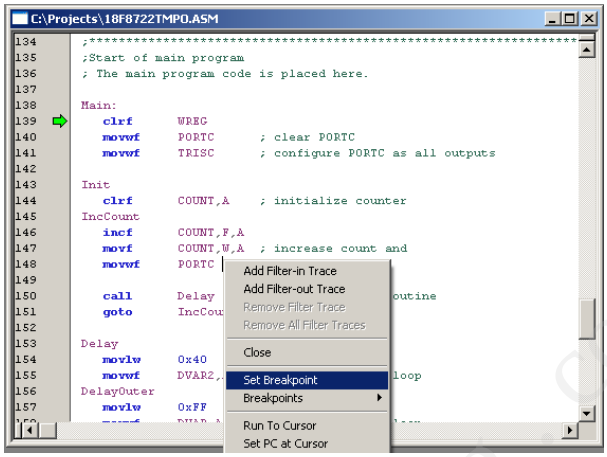
Watch – select variable “count”



Watch – reset values

7. Test Code with Simulator

- To set a breakpoint, put the cursor on the line and click the right mouse button



Debug context menu (right mouse click on line)

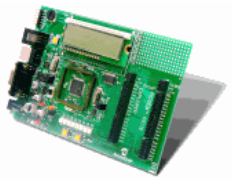
Debug and Emulator

MPLAB REAL ICE In-Circuit Emulator System

MPLAB PICkit 3 for debugging and programming

PICkit™ 2 Debug Express and the PICkit 2 Starter Kit

PIC18F4XK20 Starter Kit



PICDEM PIC18F8722

Starter Kit PIC18F46J50