

Experiment Number 1

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Branch ::	CSE - IoT	Sec/Grp ::	1/A
Semester ::	5 th	Date ::	2 nd Sept, 2021
Subject ::	Embedded System Lab	CODE ::	CSD-333

1. Aim :

To examine and use MP Lab assembler and simulator.

2. Task :

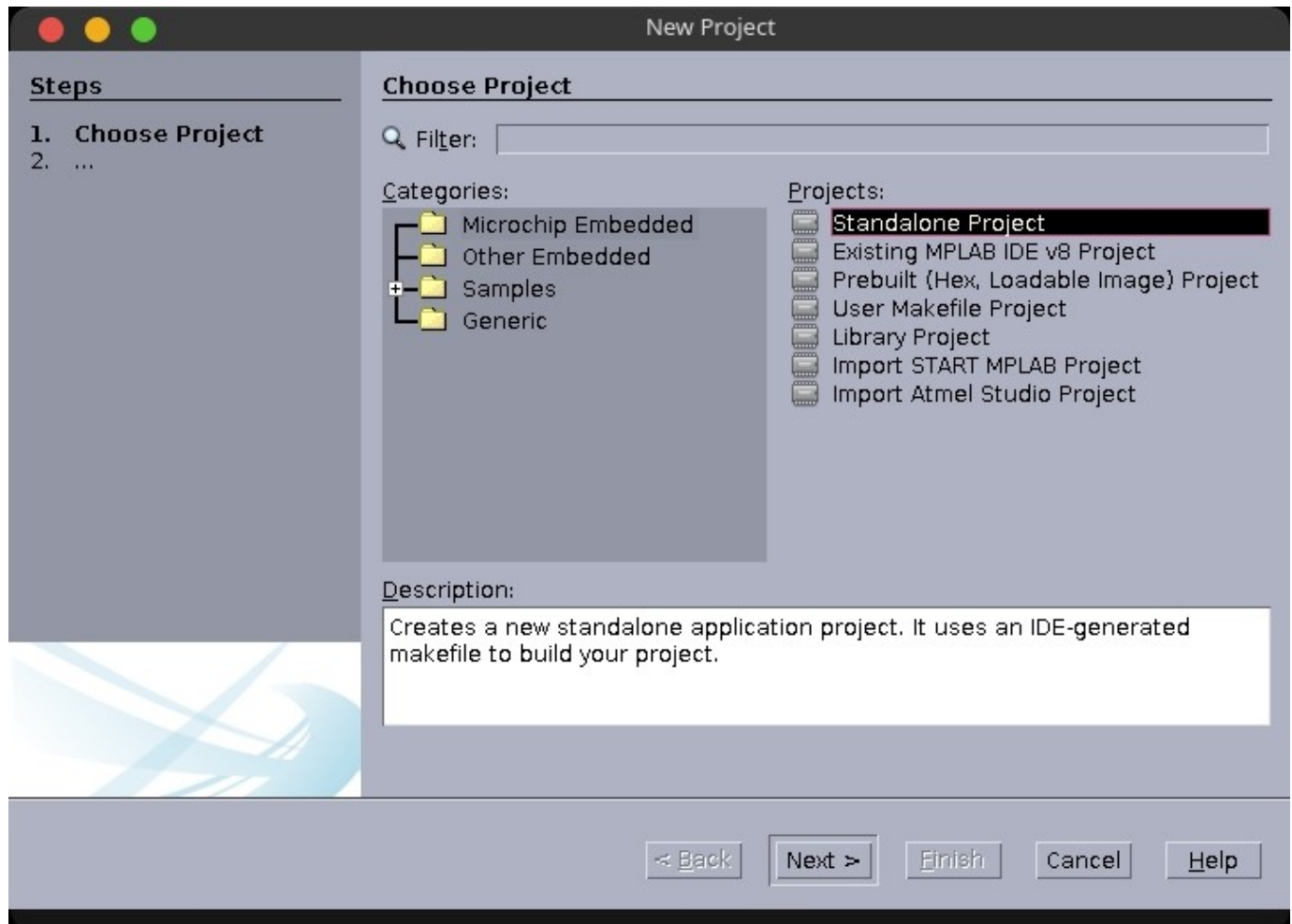
Write an assembly program to move value 80H to working register-WREG then from to WREG move it to file location 30H .

3. Algorithm :

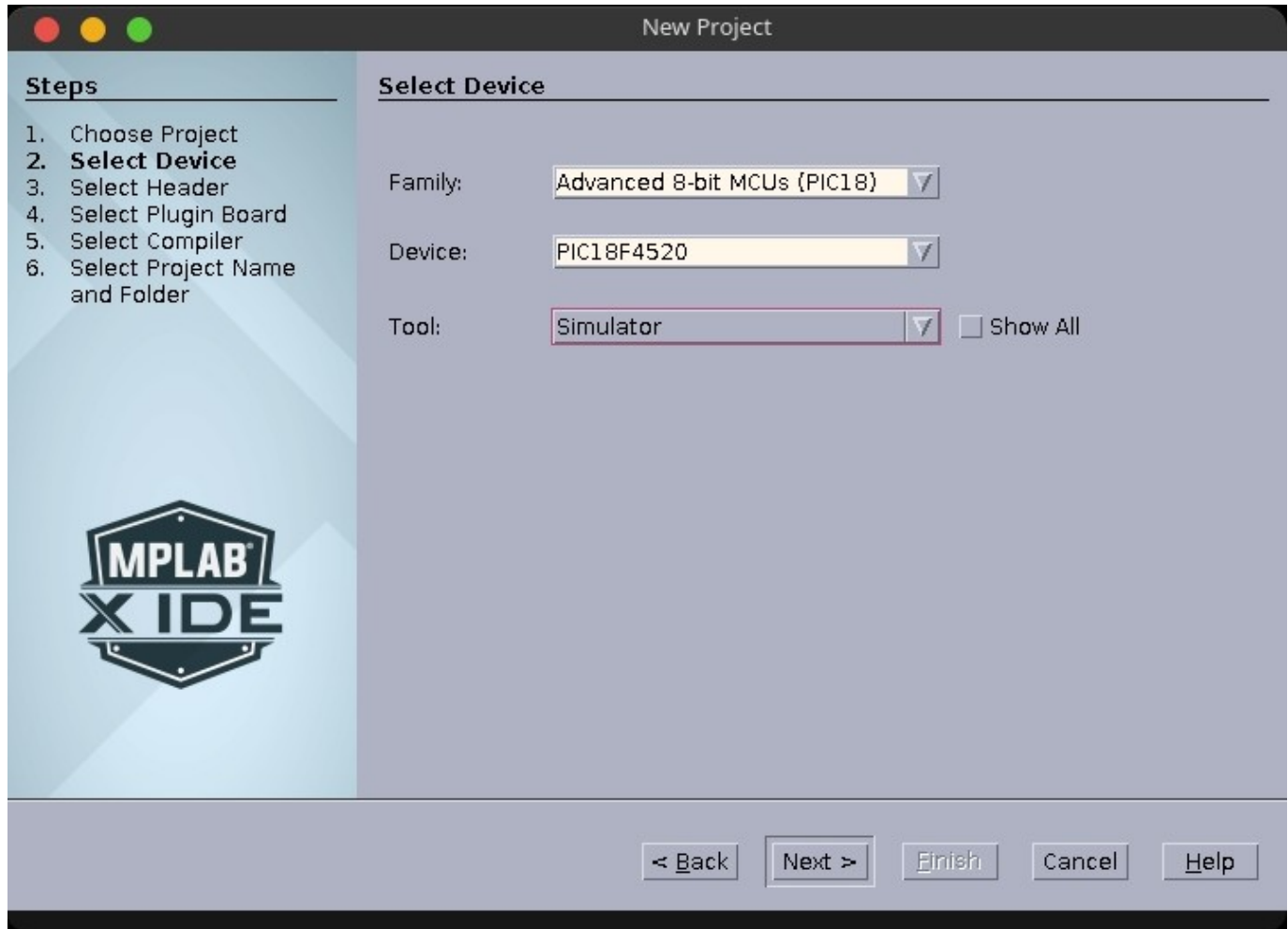
1. Move 80H at WREG
2. Move 80H from WREG to file location 30H

4. Steps / Source Code :

1. Make a new project



2. Choose Device



The image shows the 'New Project' wizard in MPLAB X IDE, specifically the 'Select Device' step. On the left, a 'Steps' list shows the progression: 1. Choose Project, 2. Select Device (highlighted), 3. Select Header, 4. Select Plugin Board, 5. Select Compiler, and 6. Select Project Name and Folder. The MPLAB X IDE logo is also visible. The main area contains three dropdown menus: 'Family' set to 'Advanced 8-bit MCUs (PIC18)', 'Device' set to 'PIC18F4520', and 'Tool' set to 'Simulator'. A 'Show All' checkbox is present next to the 'Tool' dropdown. At the bottom, navigation buttons include '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Steps

1. Choose Project
2. **Select Device**
3. Select Header
4. Select Plugin Board
5. Select Compiler
6. Select Project Name and Folder

Select Device

Family: Advanced 8-bit MCUs (PIC18) ▾

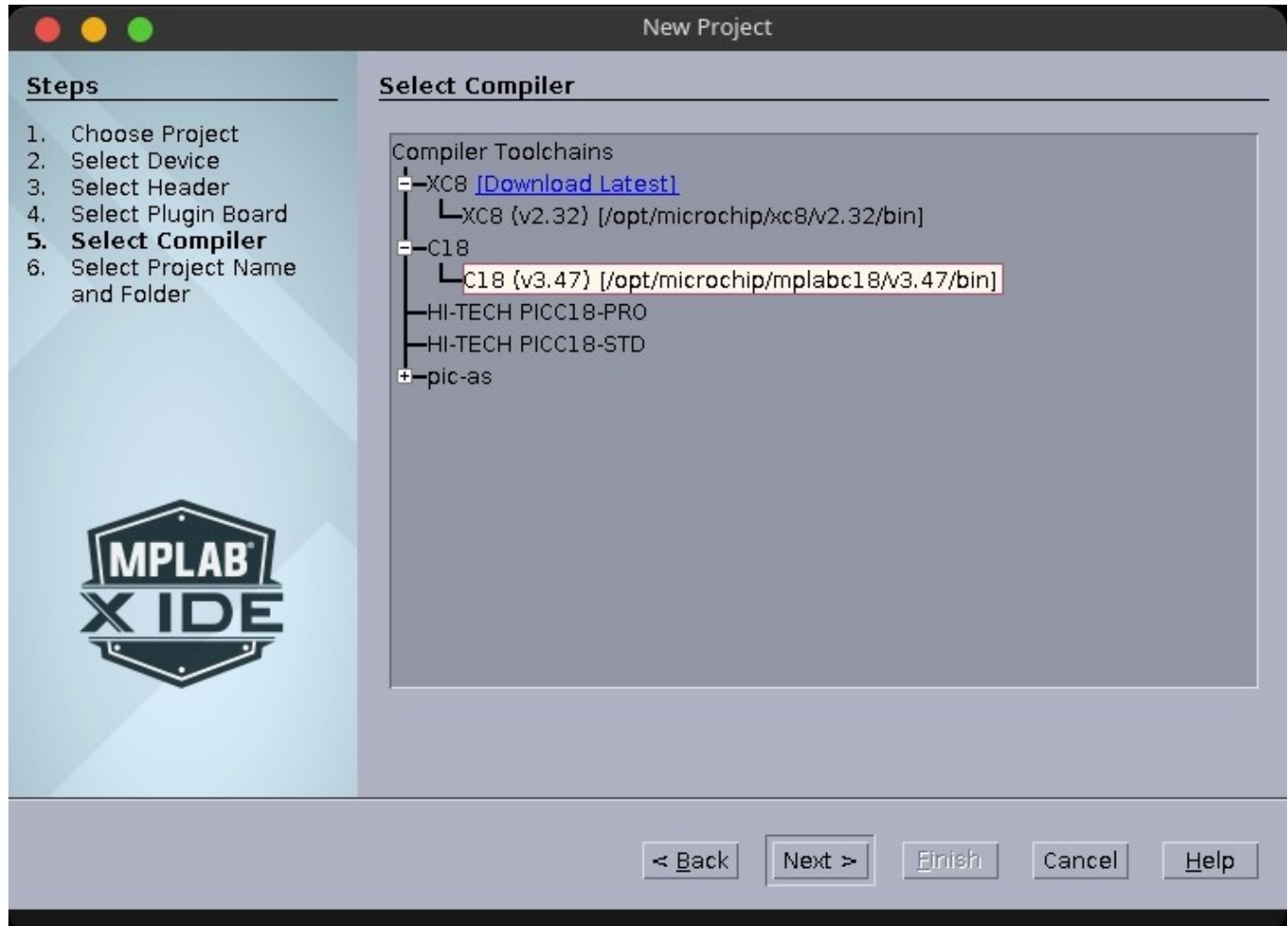
Device: PIC18F4520 ▾

Tool: Simulator ▾ ☐ Show All

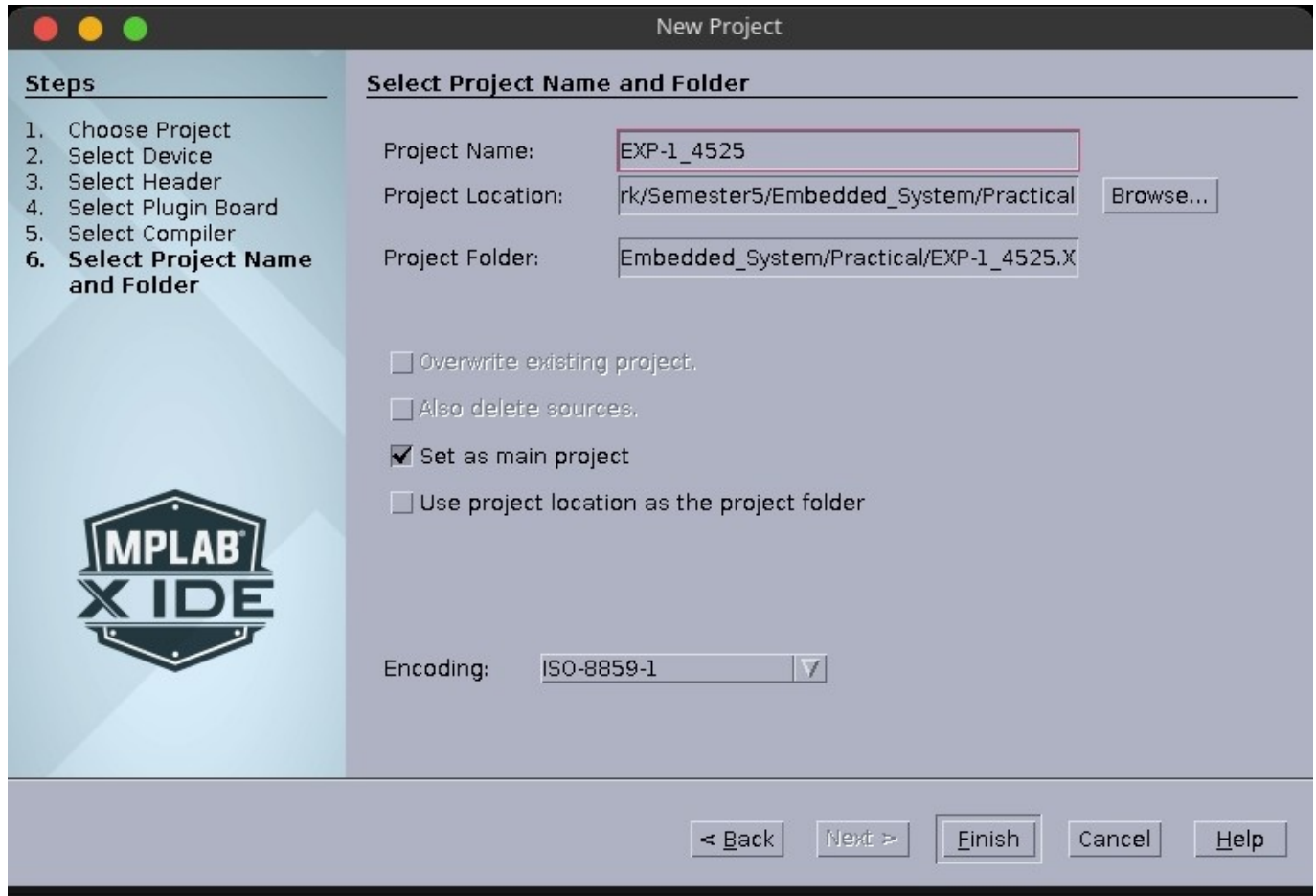
MPLAB X IDE

< Back Next > Finish Cancel Help

3. Choose Compiler



4. Set Project Name



The image shows the 'New Project' wizard in MPLAB X IDE. The window has a title bar with standard OS window controls. On the left, a 'Steps' panel lists six steps, with the sixth step, 'Select Project Name and Folder', highlighted. Below the steps is the MPLAB X IDE logo. The main area is titled 'Select Project Name and Folder'. It contains three text input fields: 'Project Name' with the value 'EXP-1_4525', 'Project Location' with the value 'rk/Semester5/Embedded_System/Practical', and 'Project Folder' with the value 'Embedded_System/Practical/EXP-1_4525.X'. A 'Browse...' button is next to the Project Location field. Below these fields are four checkboxes: 'Overwrite existing project.' (unchecked), 'Also delete sources.' (unchecked), 'Set as main project' (checked), and 'Use project location as the project folder' (unchecked). At the bottom of the main area is an 'Encoding' dropdown menu set to 'ISO-8859-1'. The bottom of the window features a row of five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

New Project

Steps

1. Choose Project
2. Select Device
3. Select Header
4. Select Plugin Board
5. Select Compiler
6. **Select Project Name and Folder**

Select Project Name and Folder

Project Name:

Project Location:

Project Folder:

☐ Overwrite existing project.

☐ Also delete sources.

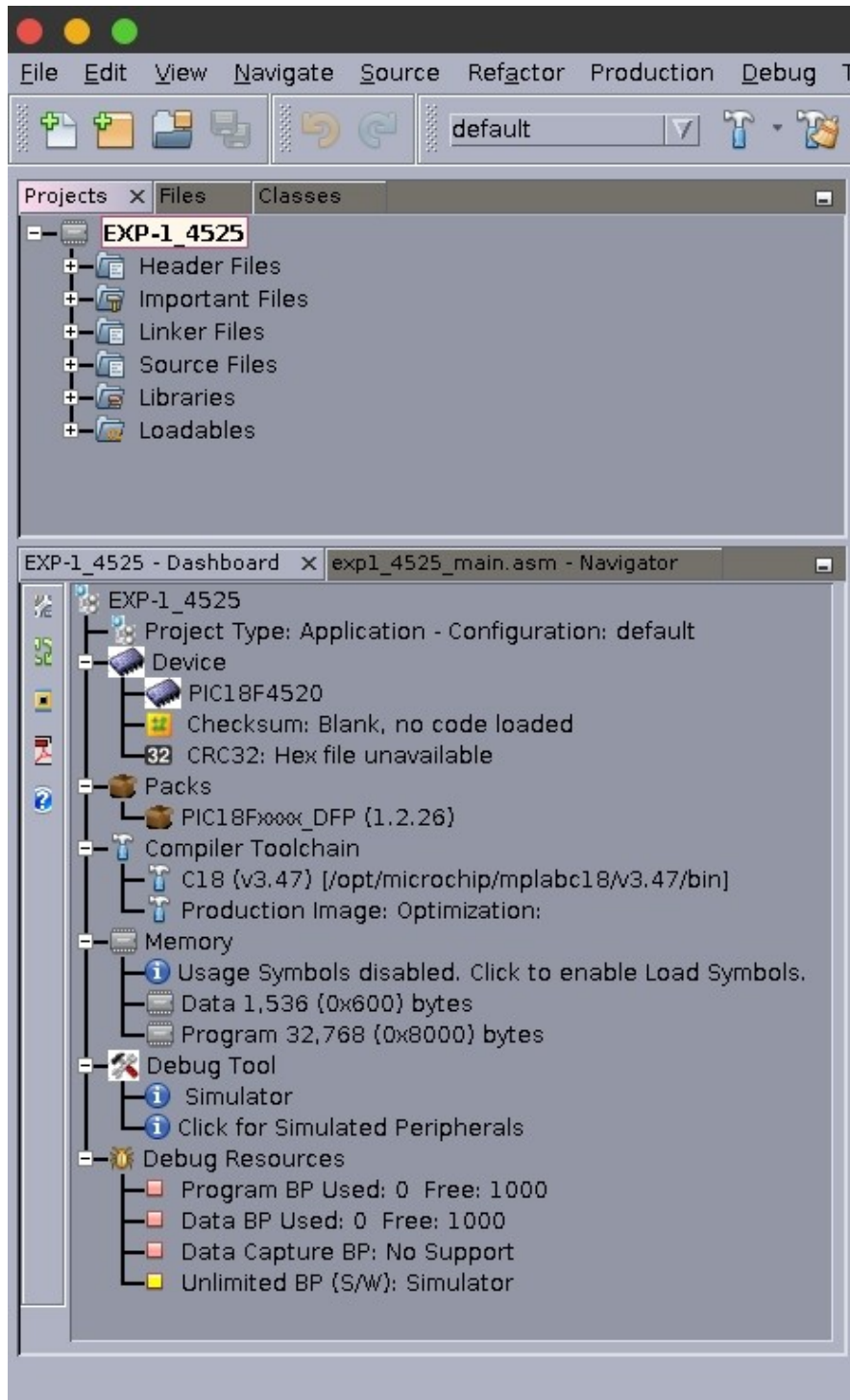
☒ Set as main project

☐ Use project location as the project folder

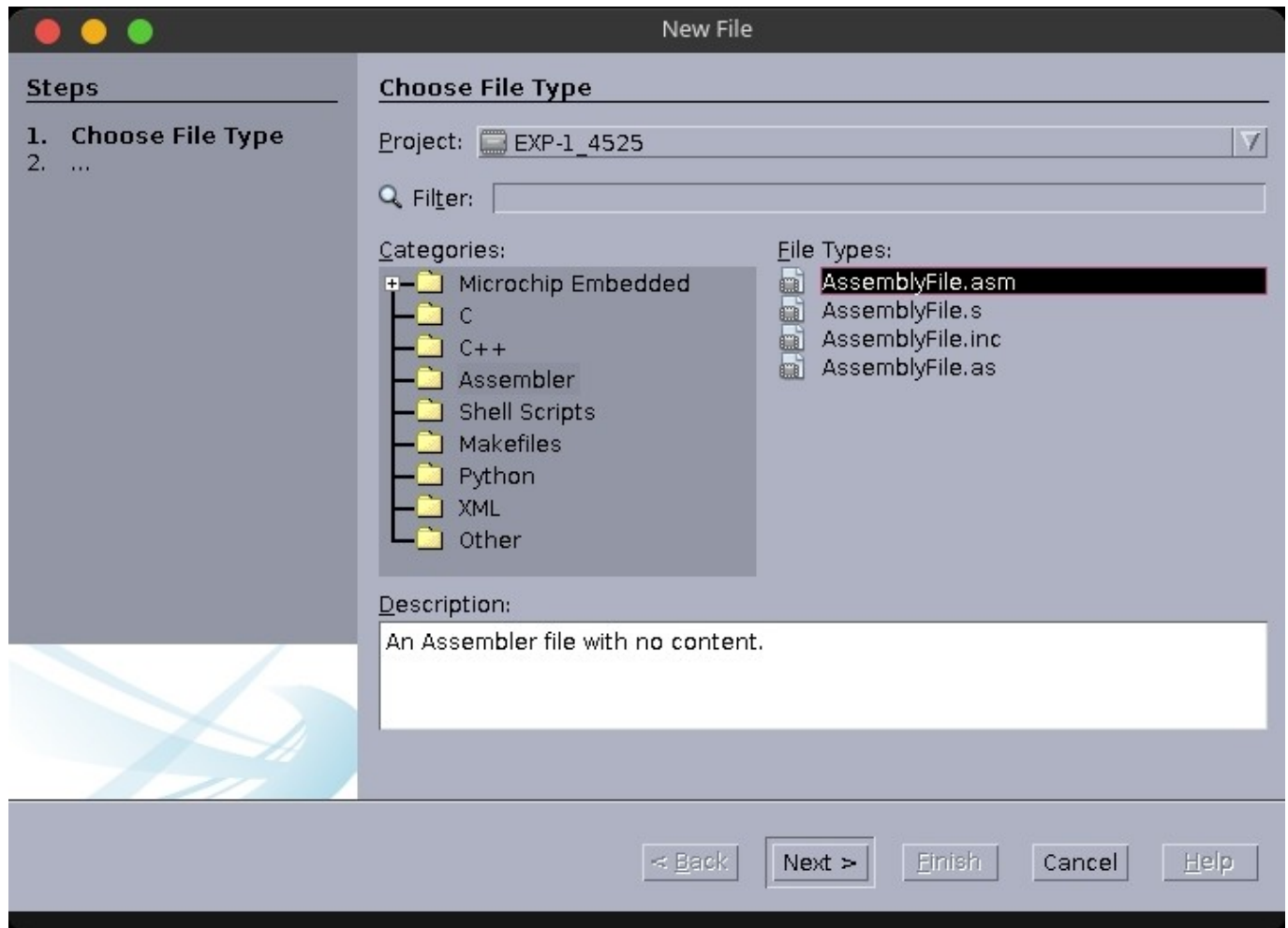
Encoding: ▼

< Back Next > **Finish** Cancel Help

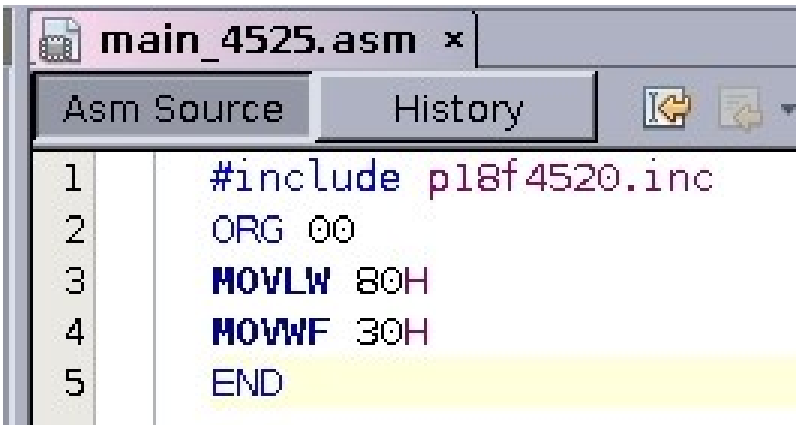
5. Project Created.



6. Create a new file now.



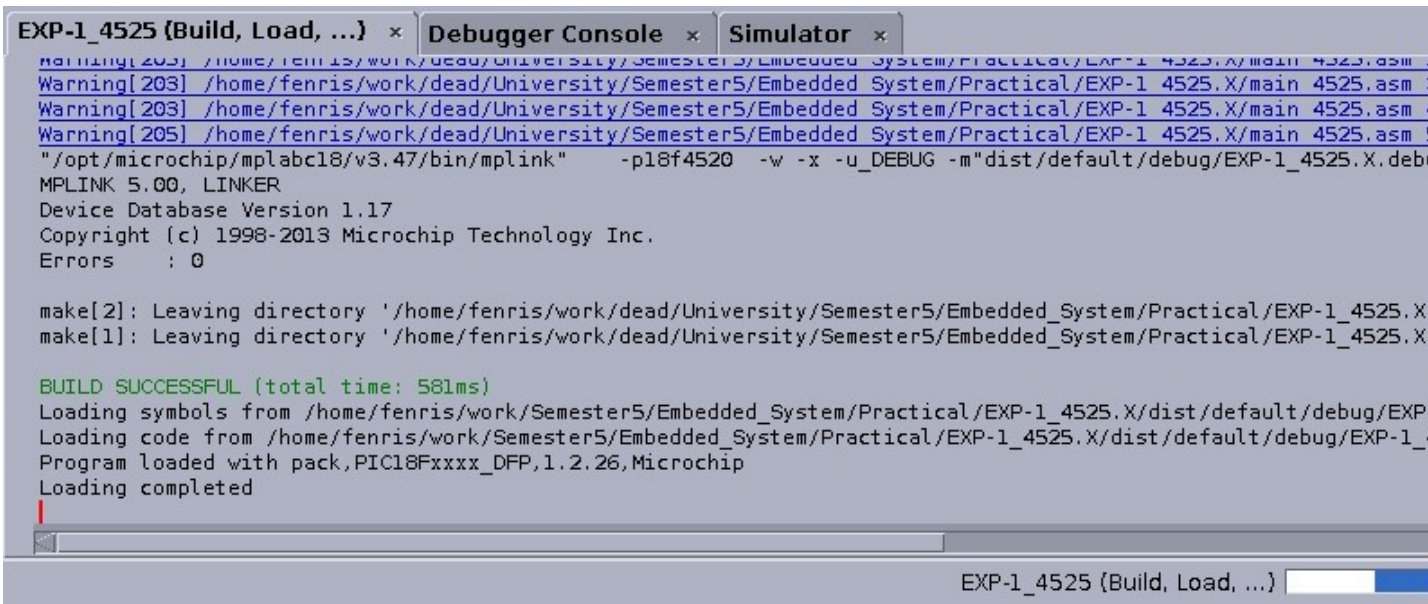
7. Write CODE.



```

1      #include p18f4520.inc
2      ORG 00
3      MOVLW 80H
4      MOVWF 30H
5      END
  
```

8. Compile



```

EXP-1_4525 (Build, Load, ...) x Debugger Console x Simulator x
Warning[203] /home/fenris/work/dead/University/Semester5/Embedded_System/Practical/EXP-1_4525.X/main_4525.asm
Warning[203] /home/fenris/work/dead/University/Semester5/Embedded_System/Practical/EXP-1_4525.X/main_4525.asm
Warning[205] /home/fenris/work/dead/University/Semester5/Embedded_System/Practical/EXP-1_4525.X/main_4525.asm
"/opt/microchip/mplabcl8/v3.47/bin/mplink" -p18f4520 -w -x -u_DEBUG -m"dist/default/debug/EXP-1_4525.X.deb
MPLINK 5.00, LINKER
Device Database Version 1.17
Copyright (c) 1998-2013 Microchip Technology Inc.
Errors : 0

make[2]: Leaving directory '/home/fenris/work/dead/University/Semester5/Embedded_System/Practical/EXP-1_4525.X
make[1]: Leaving directory '/home/fenris/work/dead/University/Semester5/Embedded_System/Practical/EXP-1_4525.X

BUILD SUCCESSFUL (total time: 581ms)
Loading symbols from /home/fenris/work/Semester5/Embedded_System/Practical/EXP-1_4525.X/dist/default/debug/EXP
Loading code from /home/fenris/work/Semester5/Embedded_System/Practical/EXP-1_4525.X/dist/default/debug/EXP-1_
Program loaded with pack, PIC18Fxxx_DFP, 1.2.26, Microchip
Loading completed
  
```


5. Observations :

Address	Name	Hex	Decimal	Binary	Char
FE8	WREG	0x80	128	10000000	"
FD1	WDTCON	0x00	0	00000000	''
FAC	TXSTA	0x02	2	00000010	''
FAD	TXREG	0x00	0	00000000	''
F96	TRISE	0x07	7	00000111	''
F95	TRISD	0xFF	255	11111111	'y'
F94	TRISC	0xFF	255	11111111	'y'
F93	TRISB	0xFF	255	11111111	'y'
F92	TRISA	0xFF	255	11111111	'y'
FFF	TOSU	0x00	0	00000000	''
FFD	TOSL	0x00	0	00000000	''
FFE	TOSH	0x00	0	00000000	''
FFD	TOS	0x000...	0	00000000 00000000...	'...'
	TMR3_Prescale	0x00	0	00000000	''

Memory Format

Address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	ASCII
000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
010	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
020	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
030	80	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
050	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
080	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
090	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....

Memory Format

Learning Outcomes :

- MPLABX IDE
- WREG



S. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			