

16.317: Microprocessor Systems Design I

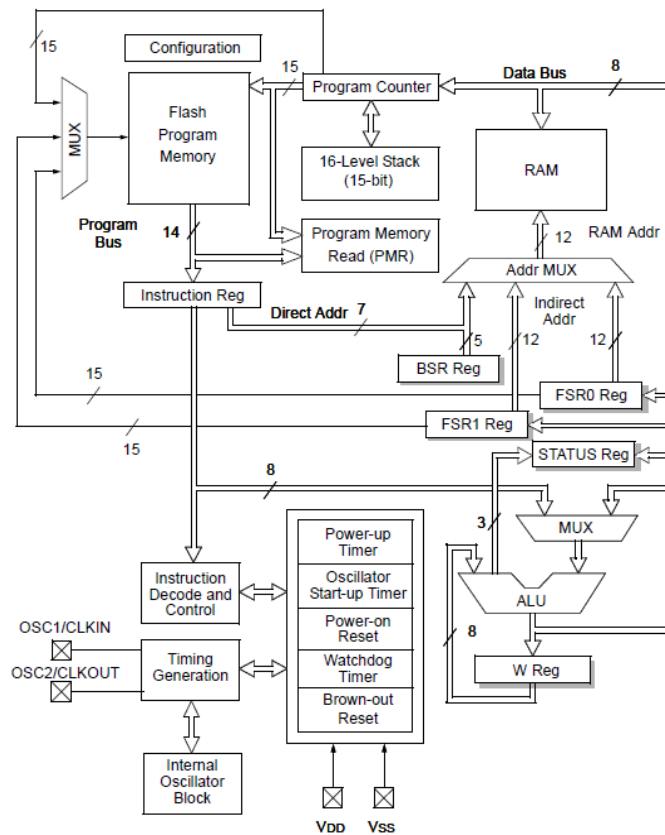
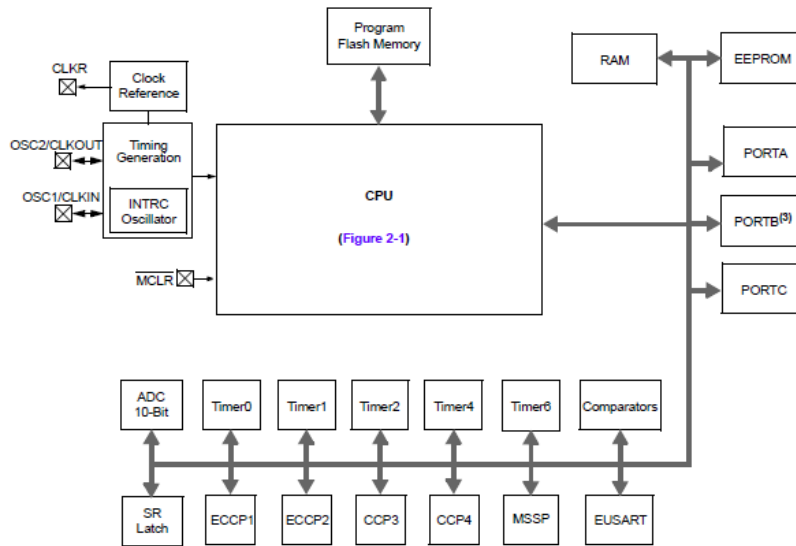
Spring 2014

Lecture 20: Key Questions

March 24, 2014

1. Explain the major differences between a microprocessor and a microcontroller, including the typical features of a microcontroller.
2. Explain the major benefits and limitations of using a microcontroller.

3. Explain the general components of the PIC16F1829 block diagrams shown below.



4. What is the difference between Harvard and von Neumann memory architectures?
5. Explain the basic organization of the PIC data memory.
6. Explain the purpose of the PCL and PCLATH registers.

7. Briefly describe the contents of the STATUS register.
8. Explain the basic organization of the PIC stack.
9. Explain how different memory banks are accessed in PIC microcontrollers.
10. Explain direct addressing on the PIC microcontrollers.
11. Explain indirect addressing on the PIC microcontrollers.