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This chapter covers the basic foundation concepts needed to build upon in this course. Specifically we will look at number representation, digital logic, embedded system components, and computer architecture: the Central Processing Unit (Arithmetic Logic Unit, Control Unit and Registers), the memory and the Instruction Set Architecture (ISA).

Learning Objectives:

- Understand the binary number system, hexadecimal representation and the representation of signed and unsigned integers.
- Learn what an Embedded System is.
- Know the terms: microcontroller (CPU, Busses, Memory, I/O ports)
- Learn the composition of a CPU.
- Know the terms: Arithmetic Logic Unit, Control Unit,
- Registers, Bus, Von Neumann, Harvard
- Learn the memory map
- See some of the Cortex M instruction set.



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