16.317: Microprocessor Systems Design I

Spring 2016

Lecture 4: Key Questions
January 25, 2016

1. Describe the general characteristics of the x86 architecture.

2. Briefly describe the x86 registers.

3. Describe the different memory spaces in the x86 architecture.

4. Describe the specifics of x86 memory addressing within instructions.

5. **Example:** Compute the address for the memory operand in each of the following instructions. The register contents and variables are as follows:

- (ESI) = 00000100_{16}
- (EDI) = 00000200_{16}
- (EBX) = 00000300_{16}

a. Destination operand in: MOV [EBX+0400h], CX

b. Destination operand in: MOV [EDI+2*EBX], AH

c. Destination operand in MOV [EBX+EDI+0400h], AL