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CCIS-360   
WEEK 1 ASSIGN 2

**2.1.5**

#1 – The CPU contains registers and what other basic elements?

A high-frequency clock  
 a control unit  
 and an arithmetic logic unit

#2 – The CPU is connected to the rest of the computer system using what 3 busses?

The data bus  
 the control bus  
 and the address bus

#3 – Why does memory access take more machine cycles than register access?

Because reading a single value from memory involves four steps, each of which generally  
 take up one clock cycle, verses a register which usually takes only one clock cycle

**2.2.4**

#1 – What are the x86 processor’s 3 basic modes of operation?

Protected mode  
 read-address mode (real mode)  
 system management mode

#2 – Name all 8 32-bit general purpose registers

1. EAX 5. EBP  
 2. EBX 6. ESP  
 3. ECX 7. ESI  
 4. EDX 8. EDI

#4 – What special purpose does the ECX register serve?

Loop counter