CPTR-215
HW#3

due Friday 10/5/12

1) Which register in an ARM CPU "points" to the next instruction that will be executed? What is this register typically named?

2) a. During an instruction fetch, what information is on the address bus?

b. During an instruction fetch, what information is on the data bus?

c. What is the direction of information flow on these buses during an instruction fetch?

3) What is the usual meaning of "32-bit" in the phrase "32-bit computer"?

4) In an ARM computer, how many bytes are in each word of memory?

5) Assume a computer is built using a 32-bit ARM CPU and that the address bus that connects between the CPU and memory contains 18 wires connected to the lower 18 bits of the CPU address register (top block of text Figure 3.2).

a. How many words of memory can be accessed in this system? (each word of memory contains 32 bits).

b. How many bytes of memory can be accessed in this system?

6) A CPU is comprised of several principle functional blocks including input and output. List the next three most significant functional blocks in a CPU.

7) From a programmer's view when writing a program, how many registers are there in the register bank?