# CMSI 2210 Homework 2 Solutions ~ Fall 2023

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| 1 | What is a computer system? | A computer system is a collection of components which together make up the ability to perform a computation |
| 2 | What are some of the parts of a computer system? | LOTS of options: CPU, RAM, hard disk, screen, mouse, keyboard, network card, etc. |
| 3 | What is the difference between a compiled language and an interpreted language? | Compiled language must be compiled into object code which is directly machine code; interpreted language is interpreted line-by-line directly from the source code |
| 4 | Is C a compiled language? | Yes |
| 5 | Who invented the C language? | Kernighan and Ritchie |
| 6 | How long has C been in use? | Since 1972-1973, so nearly 50 years |
| 7 | Is a compiler a translator? | Yes |
| 8 | Is an assembler a translator? | Yes |
| 9 | What is the command to list out the contents of a directory on a mac terminal window? | “ls” with LOTS of command line switches |
| 10 | What does the C function atof() do? | Converts a string to a floating point number |
| 11 | What are the bottom two layers of a computer system? Give a brief description of each. | Digital Logic layer on the bottom consisting of circuits, gates, etc. Control layer next, consisting of hardwired and/or microcode instructions |
| 12 | What are the three steps of the Von Neumann Architecture? | Fetch, decode, and execute |
| 13 | What is the purpose of an ALU? | Arithmetic Logic Unit |
| 14 | What is a register? | A special small memory area that is part of the processor |
| 15 | What is one difference between Application software and System software? | Application software is written in high-level languages and directly interfaces with the user; System software is written in lower-level languages and/or assembler and is used for the O/S, drivers, and etc. |
| 16 | Is the phrase cmp rdi, rsi machine language? | No, it’s assembly language |
| 17 | How many buses are included in the system bus? | 3 |
| 18 | What is the decimal value of 100101112? | 151 |
| 19 | What is the decimal value of 111111112? | 255 |
| 20 | What is the largest unsigned integer value that will fit into 16 bits? | 65535 |