

- 1) Processor type and speed: 2.4 GHz Intel Core i5; Storage capacities: 8 GB 1600 MHz DDR3; I/O Devices: SD card reader, USB ports, To find the processor and memory information, I accessed the "About this Mac" settings from the main toolbar. To find the I/O devices, I looked in System Preferences.
- 2) We use the binary number system to store information on a computer because its less expensive and more reliable because devices only need to represent only one of two possible values and states.
- 3) **A:** 2 items **B:** 8 items **C:** 64 items **D:** 256 items **E:** 1024 items **F:** 16,384 items
- 4) Seven bits. 1 bit = 2 items so 7 bits = 128 items. To represent each pixel with the possibility of 128 colors you would need 7 bits.
- 5) Atleast 8 bits are needed to store each character of a document using a language with 240 unique letters and symbols. Although 8 bits represents 256 items - 7 bits only represents 128 items so 8 bits is needed.
- 6) **A:** 1KB =1024 bytes so 12KB = 12 \* 1024 equals to 12,288 bytes/98,304 bits. **B:** 1MB = 1,048,576 bytes so 5MB = 5 \* 1,048,576 equals to 5,242,880 bytes/41,943,040 bits. **C:** 1GB = 1,703,741,824 bytes so 3GB = 3 \* 1,703,741,824 equals to 5,111,225,472 bytes/40,889,803,776 bits. **D:** 1TB = 1,009,511,627,776 bytes so 2TB = 2\* 1,001,511,627,776 equals to 2,199,023,255,552 bytes/ approx.  $1.7 * 10^{13}$  bits.
- 7) RAM can be written to and read from but ROM can only be read from.
- 8) Both disks and Ram are random access devices because they can go directly to the information need but RAM is main memory while disks are secondary memory. Disks are not volatile, meaning, information stored in it is not lost when the computer is turned off while RAM is volatile.
- 9) Computer is connected to a local area network which connects to the Internet.
- 10) LAN = local area network and WAN = wide area network. LAN's are designed to connect computers over short distances, usually all in the same area, like a building or within a room. WAN's on the other hand are the opposite, they are designed to connect computers over very long distances. They connect two or more LAN's.
- 11) General formula is  $n(n-1)/2$ . If there are 8 computers, there would need to be 28 communication lines because:  $8*7 = 56/2 = 28$ . If there are 9 computers, there would need to be 36 communication lines because:  $9*8 = 72/2 = 36$ . If there are 10 computers, there would need to be 45 communications lines because:  $10*9 = 90/2 = 45$ .
- 12) The Internet is an interconnection of networks while the World Wide Web is more of a collection of software that can be accessed via the Internet.

- 13) **A:** <http://www.montclair.edu>. HTTP stands for Hyper Text Transfer Protocol. Wwww. is a reference to a web server, and the domain montclair.edu stands for our school name and states we are an educational institution. **B:** <http://www.montclair.edu/csam/computer-science/>. The same as above but with sub divisions within the HTML template for the College of Sciences and Mathematics. **C:** [https://www.montclair.edu/profilepages/view\\_profile.php?username=moghania](https://www.montclair.edu/profilepages/view_profile.php?username=moghania). Refers to a specific file - view\_profile.php.
- 14) // creates a comment for one singular line while /\* \*/ can span across multiple lines in your code editor.
- 15) **A:** valid **B:** valid **C:** invalid because it starts off with a digit **D:** valid **E:** valid **F:** valid **G:** invalid because it contains ampersand symbol.
- 16) **A:** too meaningless **B:** its alright but it would be more helpful if it was changed to totalValue **C:** too long
- 17) With capitalization comes the possibility of more than one meaning of the word. Java is case sensitive because values that might be spelled the same can be assigned different values if one is capitalized and the other isn't. The variables "BANANA" and "banana" are completely different.
- 18) JVM also known as Java Virtual Machine is a computing machine that converts Java bytecode into machine language and runs it.
- 19) "rachael ray finds inspiration in cooking her family and her dog" here this english sentence is ambiguous. Without specifying what is happening, this sentence can have several meanings. Ambiguity is an issue for programming because unlike humans, where we can differentiate and make sense of odd wording, a computer cannot.