Section 1: Memory

Memory, sometimes prefer to as RAM or random access memory, is founded in almost every type of computing machine. Most of the things you do on your computer is first taken off of your storage space then moved into the RAM then when you’re finished working on the program/software it stores the information back into the storage space (Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019). Inside of your personal computer, tower or laptop or mostly any other type of computer, there is slots to place your RAM into. How many depends on how large your machine is, but it is normal for a personal computer to have 4, laptop to have 2 and as few as 1 slot for the older models, or maybe even up to 8 if your motherboard is up to the standard. RAM is very easy to replace, remove, add, or upgrade (Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019). On your memory most likely there will be two side of contacts, each different from each other, that will make contact with the motherboard, this is called DIMM, also known as dual inline memory module ((Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019)). The DIMM will most likely have RAMs that are called dynamic random access memory, or dram, which means that it needs to be refreshed repeatedly due to how fast our computer memory is (Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019). Random meaning, we can access the memory at anyplace at any time (Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019). The dram type in the current use is called synchronous dynamic random access memory meaning that it is synchronized with the clock of our computer system which then allows the system to signal things up at a very standard format (Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019). Currently there is two different rate when talking about data, there is single data rate memory, or SDR, and dual data rate memory, or DDR. The different between the two is that DDR is pulling two different bit of data during the same clock cycle while SDR can only do one single bit while on the same clock cycle (Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019). We are currently on the DDR4 memory train, while there was DDR3, DDR2,and DDR, which is all slower than the current DDR4 (Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019). Improvement in DDR is in the speed at which the rate performs and how large one stick of a module can be, currently at 64 gigabytes at DDR4 (Messer, *Overview of Memory - CompTIA A+ 220-1001 - 3.3* 2019).

Section 2: Motherboards Form Factors

One of the first thing you probably will pick out when choosing to build your own computer is a motherboard, maybe after choosing your CPU first, then afterward probably a case to put the whole system inside. Motherboard usually come in 3 sizes that ranges from normal size to smaller size but would usually offer less features due to less space available (Messer, *Motherboard Form Factors - CompTIA A+ 220-1001 - 3.5* 2019). The three popular type of motherboard sizes are called, from biggest to smallest, ATX, mATX or microATX, and then the ITX family, especially the mini-ITX (Messer, *Motherboard Form Factors - CompTIA A+ 220-1001 - 3.5* 2019). The type of motherboard you choose will mostly depends on what type of activity you are planning to do or the space you have available to place your computer at. Most if not all of motherboard will contains these things: power connector, CPU connector, ram slot, expansion slot and holes to place the screws to mount the motherboard into the case (Messer, *Motherboard Form Factors - CompTIA A+ 220-1001 - 3.5* 2019). The power connector will most likely be the same across all 3 types of motherboard, being the 24-pin connector and same with the CPU connector being 2 4-pin connectors making an 8-pin. Sometimes the motherboard does not need the power of an 8-pin so 4-pin would be sufficed. With an ATX motherboard you will see that it will contain many expansion slots, usually up to 6, and normally 4 slots for the memory (Messer, *Motherboard Form Factors - CompTIA A+ 220-1001 - 3.5* 2019). Going lower to the mATX motherboard you will see that it is smaller than the ATX and will have less features in term of expansion slots or memory slots or both. MiniITX is even smaller which means it can fit in a smaller case incase you don’t have a lot of space for a big computer (Messer, *Motherboard Form Factors - CompTIA A+ 220-1001 - 3.5* 2019). When picking motherboard it is important to know what activity will be used on it since smaller boards will most likely consume less power but will also likely to be single-purpose like video streaming (Messer, *Motherboard Form Factors - CompTIA A+ 220-1001 - 3.5* 2019).

Citation

Messer, J. (2019, May 23). Overview of Memory - CompTIA A+ 220-1001 - 3.3. Retrieved August 25, 2020, from https://www.professormesser.com/free-a-plus-training/220-1001/overview-of-memory/

Messer, J. (2019, May 23). Motherboard Form Factors - CompTIA A+ 220-1001 - 3.5. Retrieved August 25, 2020, from https://www.professormesser.com/free-a-plus-training/220-1001/motherboard-form-factors-3/