Memory management requirements

Technology, Computer

Memory Management Requirements POS 355 Memory Management Requirements The following paper will discuss the memory requirements in a computer system. Proper amount of memory must be available to minimize the amount of processor idle time while input output devices are preparing to respond. According to Stallings (2012) the requirements of memory management must satisfy the relocation, protection sharing, logical organization, and physical organization. In order to accommodate multiple processor events, addresses in the main memory are swapped out and relocated to different address in the main memory. This type of event is called relocating. According to Stallings (2012), the operating system requires knowledge of " the location of process control information and of the execution stack, as well as the entry point to begin execution of the program for this process (Relocation, p. 307). Memory protection requirements are to be satisfied by the hardware rather than the operating system. The software is unable to anticipate all of the references made by the programs. Read and write restrictions are made to control this area. Sharing occurs when many different process need to access same areas of the main memory at the same time. Memory management allows this to be done without compromising the integrity of any of the data. Logical organization of the main memory is done in a linear fashion making it less confusing when programs must access it. Since programs are usually created in modules, they must be organized for execution in order for the system to benefit from their creation. If organized properly, the programs can be executed simultaneously and everybody can be happy. Main memory and secondary memory are the areas involved in the physical organization of this

area. The processor must be located in one specific area in order to access the registers of the system as opposed to the data discs. This set up will ensure the smooth flow of data in the system. In conclusion, all components of a system are set up in a way to ensure the smooth efficient flow of data, limiting the amount of idle time as well as to ensure the minimal of corrupt data. Memory management requirements are put in place to ensure that all system requirements are met and idle time is eliminated. References Stallings, W. (2012). Operating systems: Internals and design principles (7th ed.). Boston, MA: Prentice Hall.