Lab Six

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1 Problem One

Question: What?

Answer: The structure of memory typically follows the stored-program concept in which instructions and data are nearly indistinguishable within its allotted space. It is the program counter, or position within the program that keeps the CPU flowing from one instruction to the next using logical to physical memory address translation. It is important to keep track of the base and limit registers of a process in order to keep it within its own bounds and prevent it from hurting the overall system whether intentionally or unintentionally.

2 Problem Two

Question: Why?

Answer: Due to the stored-program concept, it is possible for a program to intentionally or unintentionally run awry. If a process were to access any instructions or data housed in an area outside of its allotted space, then it would interfere with other programs. This could happen if the program accesses its own data as if it is an instruction and begins a domino effect of accessing incorrect memory locations. Another possibility would be if the program purposely attempts accessing a memory location outside of its allotted space with malicious intent. In order to prevent both possibilities from damaging the health of the system, process bases and limits are enforced to keep the program from reading or writing to locations not associated with the program's allotted memory space. By using base and limit registers, the system and users' interests in the system are protected.