Problem 2 Write a short essay which summarizes the knowledge of process's data segment to answer for these questions:
- In which cases we should use aligned_malloc() instead of standard malloc()?
- How can we increase the size of heap in a running process?

In which cases we should use aligned_malloc() instead of standard malloc()?
When the alignment of memmory allocation is important to you. Since CPU is more efficiently when accessing in a certain unit, it is better to have the memory allocated in the certain unit boundary. For example, if a CPU is the most sufficient when memory is aligned every 16 bytes, it will have a faster access to the memory located at address spaces which are the multiple of 16 than when it must access to memory at 0x0005 or 0x0001. One more application which you can use aligned malloc is paging, as virtual memory use paging. The size of page is fixed, and begin at alignment. It is better to use aligned malloc when dealing with programming at page level, reduce pagefault.

How can we increase the size of heap in a running process?
We can use function like malloc(), calloc() to allocate memory in heap segment, to deallocate it, use free(). When use enough malloc memory, brk() will be automatically called to increase heap size. However, you can also call brk() or sbrk() by yourself if you really want to increase or decrease your heap size. One more way is that by using setrlimit() system call to set the memory limit of a process, you can also change heap size.