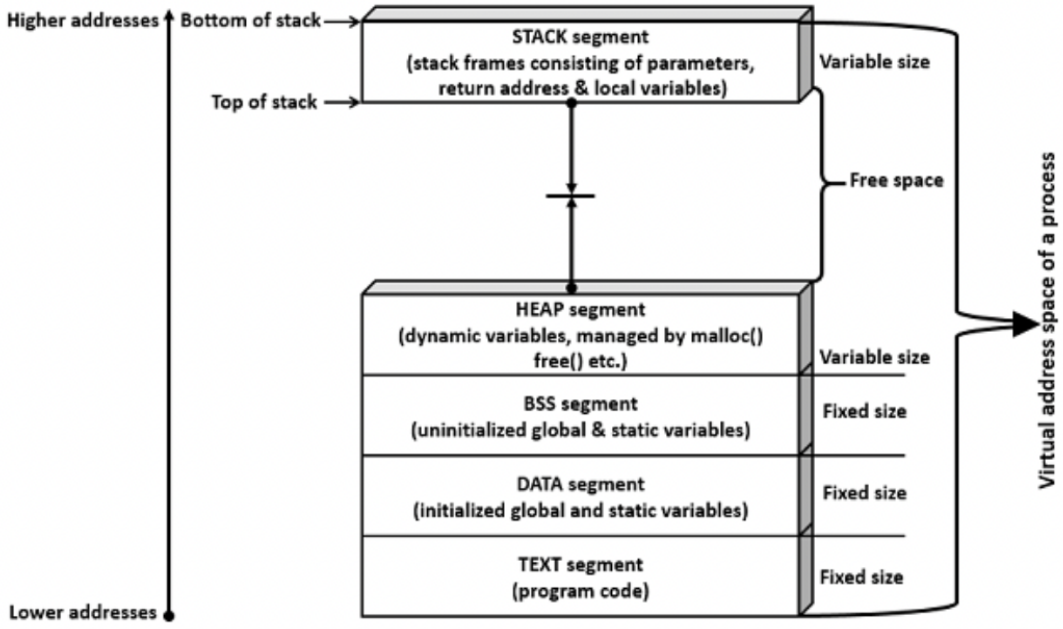
Process Image



- Code segment / Text segment:
  - Portion of object file or program's virtual address space that consists of executable instructions.
  - This is usually read-only data segment and has a fixed size.
- Data segment is of 2 types:
  - Initialized.
  - Un-initialized.
- Initialized data segment:
  - Is a portion of the object file or program's virtual address space that consists of initialized static and global variables.
- Un-initialized data segment:
  - Is a portion of the object file or program's virtual address space that consists of uninitialized static and global variables, also called BSS – Block Started by Symbol segment.
- Data segment:
  - Is read-write since the values of variables could be changed during run time. This segment also has a fixed size.
- Stack segment:
  - Is an area of memory allotted for automatic variables and function parameters.
  - It also stores a return address while executing function calls.
  - Stack uses LIFO (Last-In-First-Out) mechanism for storing local or automatic variables, function parameters and storing next address or return address.
  - The return address refers to the address to return after completion of function execution.

    - This segment size is variable as per local variables, function parameters, and function calls.
    - This segment grows from a higher address to a lower address.
- Heap segment:
    - Is area of memory allotted for dynamic memory storage such as for `malloc()` and `calloc()` calls.
    - This segment size is also variable as per user allocation.
    - This segment grows from a lower address to a higher address.