

One of the key resources that an operating system is called upon to manage is main (primary) memory.

Generally a programmer does not have to worry about which particular addresses are used for their programs. The compiler/OS does this for you. However, it is good to gain a basic understanding of how all these addresses are put together.

Linking

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Address Binding

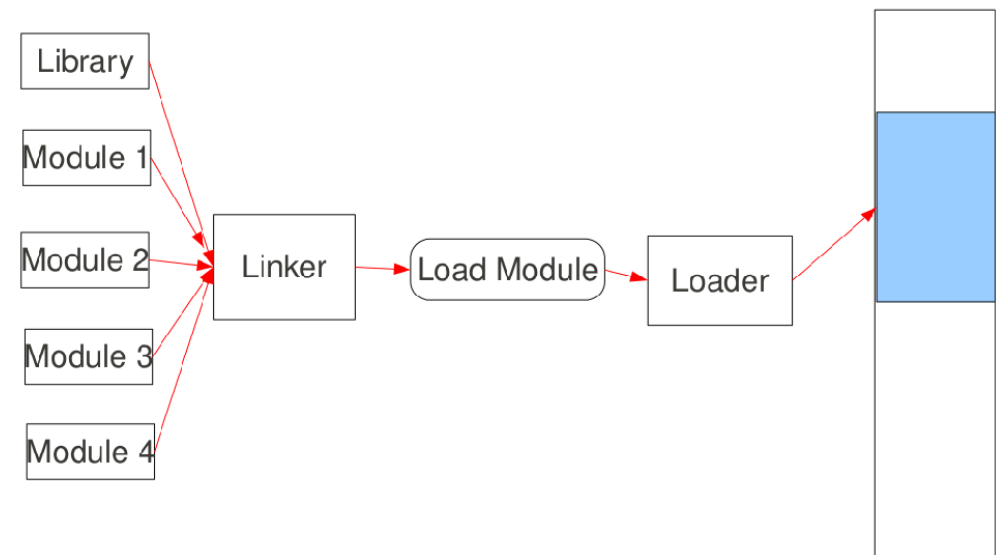
For a program to execute it must be copied into main memory at a particular location.

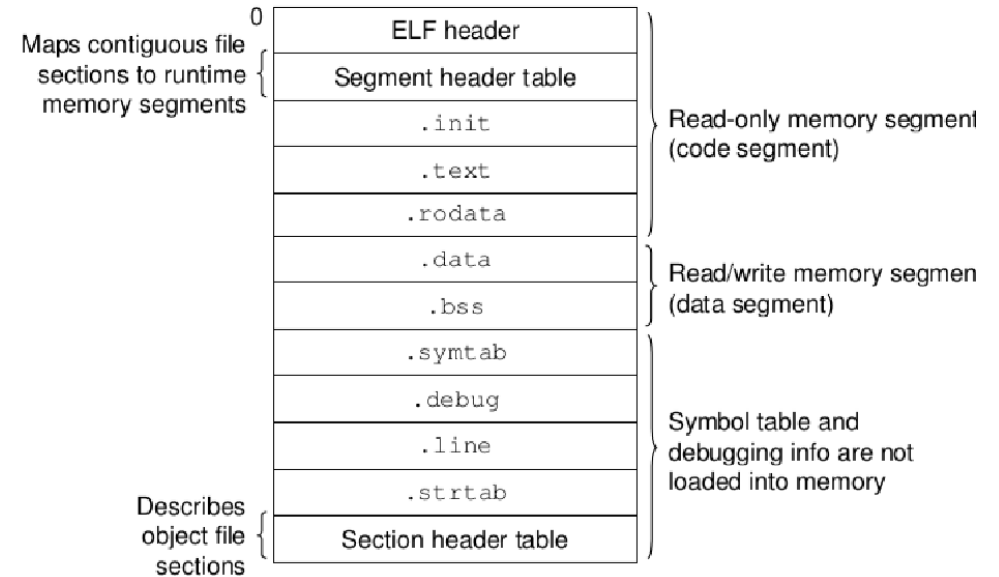
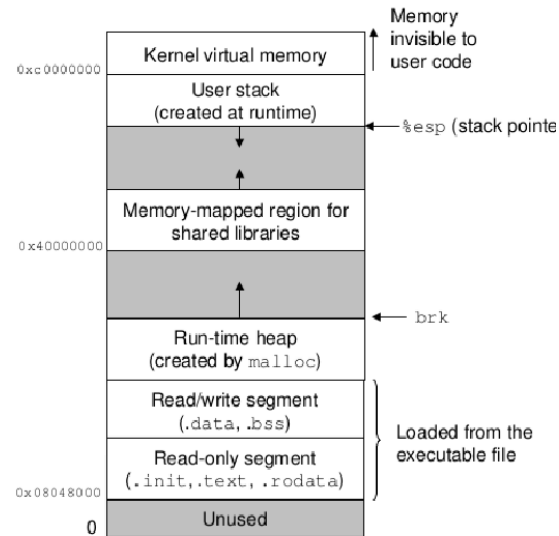
Many instructions use 'fixed' addresses which must be bound to 'fixed' locations in the memory.

This binding of instructions and data to memory addresses may occur at :

- compile time,
- load time, or
- execution time.

Linking Loading





from COMP2300 2010 slides

from 2010 COMP2300 slides

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Libraries

Libraries may be either:

- statically linked - the library is compiled into the final binary executable.
- dynamically linked - just a 'stub' is included in the binary executable, the library code is obtained as needed during execution.