

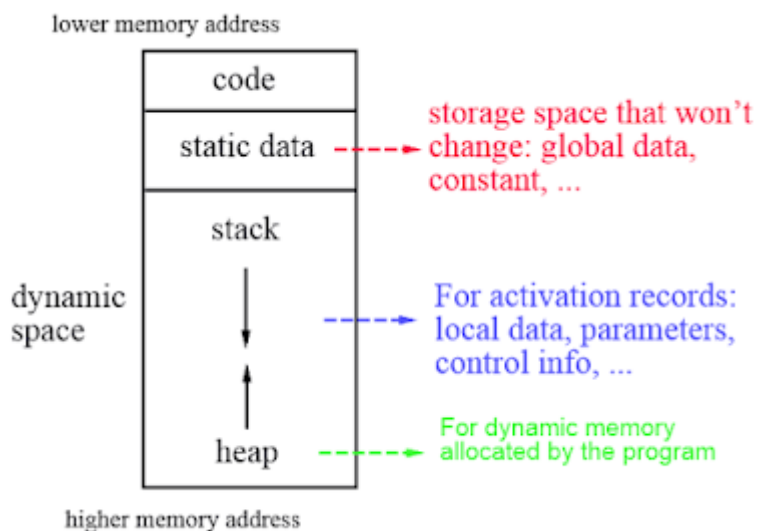
During the execution of a program, the same name in the source can denote different data objects in the computer.

The allocation and deallocation of data objects is managed by the run-time support package.

Terminologies

1. Name storage space: The mapping of a name to a storage space is called environment
2. Storage space value: The current value of a storage space is called its state. The association of a name to a storage location is called a binding. Each execution of a procedure is called an activation. If it is a recursive procedure, then several of its activations may exist at the same time.
3. Life time: The time between the first and last steps in a procedure. A recursive procedure needs not to call itself directly.

General run time storage layout



Activation record

Activation record

returned value
actual parameters
optional control link
optional access link
saved machine status
local data
temporaries

Temporaries	Stores temporary and intermediate values of an expression.
Local Data	Stores local data of the called procedure.
Machine Status	Stores machine status such as Registers, Program Counter etc., before the procedure is called.
Control Link	Stores the address of activation record of the caller procedure.
Access Link	Stores the information of data which is outside the local scope.
Actual Parameters	Stores actual parameters, i.e., parameters which are used to send input to the called procedure.
Return Value	Stores return values.