process → address space

* Static
* Stack Dynamic
* Explicit Heap Dynamic
* Implicit Heap Dynamic

Local vars] Stack
Free memory] Heap
Global vars (static) vars too } Permanent Storage
Program inst

Heap-dynamic variables:

Explicit heap-dynamic variables:

Are nameless (abstract) memory cells that are allocated and deallocated by explicit run-time instructions written by the programmer.

Referenced through pointers or references only.

Created explicitly either by operator (new) or call to system subprograms.

Ex: *int *intnode;*

intnode= new int;

Explicit deallocation is done in some PLs like C++.

delete intnode;

Explicit deallocation is done in some PLs like C++.

Heap is collection of storage cells. Highly disorganized.

→ Size can grow

Often used to build dynamic structures like stack, tree etc which can be built conveniently using pointers/ref.

Often used to build dynamic structures like stack, tree etc which can be built conveniently using pointers/ref and explicit heap-dynamic variables.

Disadvantages:

1, difficulty in using pointers.

2. Cot induced by references.

3. Complexity in storage management implementation.