Memory Partitioning

Static and Dynamic Allocation (Fixed & Dynamic)

Memory allocation is generally performed through two methods :
static allocation and dynamic allocation.

In static allocation, the allocation is done before the execution of a process.

There are two instances when this type of allocation is performed :

1. When the location of the process in the memory is known at compile time, the compiler generates an absoulte code for the process.
If the location of the process needs to be changed on the memory, the code must be recompiled.

2. when the location of the process in the memory is not known at compile time, the compiler does not produce an actual memory address but generates a relocatable code, i.e. addresses that are relative to some known point.
with this relocatable code, it is easy to ~~hold~~ load the process to a changed location and there is no need to recompile the code.

In both cases of static allocation, size sould be known before start of the execution of the process.

- **Dynamic**

If memory allocation is deferred till the process starts executing, it is known as dynamic allocation.

It means the process is loaded in memory initially with all the memory reference in relative form. The absoulute addresses in memory are calculated as an instruction in the process executed. In this way, memory allocation is done during executing of program.

Dynamic allocation also has the flexibility to allocate memory in any region.