Dynamic allocation memory

Malloc, realloc and calloc are functions in C defined under stdlib.h, these functions give us the option to allocate memory manually during run-time, this is dynamic allocation memory, the mechanism by which storage/memory/cells can be allocated to variables during the run time.

Malloc

Malloc means *memory allocation*. In C is used to dynamically allocate a single large block of memory with the specified size. It returns a pointer of type void which can be cast into a pointer of any form.

The syntax of malloc is:

ptr = (cast-type*) malloc(byte-size)

Realloc

Realloc means *re-allocation*. In C is used to dynamically change the memory allocation of a previously allocated memory. This function is used when the dynamically allocated memory is insufficient or more than required.

The syntax of Realloc is:

ptr = realloc(ptr, x);

Where, ptr is reallocated with a new size (x).

Calloc

Calloc means *contiguous allocation*. In C is used to dynamically allocate the specified number of blocks of memory of the specified type. It initializes each block with a default value ‘0’.

The syntax of Calloc is:

ptr = (cast-type*)calloc(n, element-size);