

Pointer :- A variable that holds a memory address. This address is the location of another variable in memory.  
→ Memory to a pointer variable is assigned as : `pt-name = &variable;`

### Dynamic Memory Allocation :-

1. Dynamic memory allocation is a process of allocating memory at runtime.

2. ~~There~~ To allocate memory dynamically, library functions are `malloc()`, `calloc()`, `realloc()` & `free()`.

① `malloc()` → Memory allocation.

Syntax :- →

`ptr = (cast type*) malloc (size);`

② Example :- →

`ptr = (float*) malloc (100 * sizeof (float));`

② `calloc()` → contiguous allocation

→ It allocates memory & initializes all bits to zero.



Syntax:-

$ptr = (\text{cast type}^*) \text{calloc}(n, \text{size});$

Example :-

$ptr = (\text{float}^*) \text{calloc}(25, \text{sizeof}(\text{float}))$

- ③  $\text{free}()$  → frees the space allocated in the memory pointed by  $ptr$ .
- ④  $\text{realloc}()$  → Modifies the size of previously allocated space

Syntax:  $\text{void}^* \text{realloc}(\text{void}^* ptr, \text{size} \& \text{size})$