

# Dynamic Memory Allocation



It is a way to allocate memory to a data structure during the **runtime**.

We need some functions to allocate & free memory dynamically.

# Functions for DMA

a. malloc()

b. calloc()

c. free()

d. realloc()



# malloc()

memory allocation

takes number of **bytes** to be allocated  
& returns a pointer of type **void**

```
ptr = (*int) malloc(5 * sizeof(int));
```

# calloc()

continuous allocation

initializes with 0

```
ptr = (*int) calloc(5, sizeof(int));
```



# free()

We use it to free memory that is allocated using malloc & calloc

```
free(ptr);
```



# realloc()

reallocate (increase or decrease) memory  
using the same pointer & size.

```
ptr = realloc(ptr, newSize);
```