DMA

Friday, 26. August 2022 12:21

DMA → Dynamic memory Allocation

SMA
Static memory allocation

```
int x;
float y;
int *p;
int a[10];
struct Book b1;
```

DMA
Dynamic memory allocation

malloc ()
calloc ()

* MALLOC ()

```
float *p;
p = malloc (4);
```

Standard practice
p = malloc (sizeof (float));

```
void * malloc ( unsigned int s)
{
   ---
   ---
   return address ;
}
```

TYPE CASTING

```
int *p ;
p = (int *) malloc ( sizeof(int))
```

(int *) 1000

CALLOC ( )

```
int *q ;
q = calloc ( 5,4 )
```

Standard practice

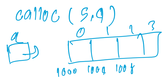
```
q = (int *) calloc ( 5, sizeof (int));
```

MALLOC VIS CALLOC

① one argument	① two argument
② Garbage value	② 0 zero
③ Single block	③ Array of blocks.

```
int *p;
malloc (20)
```

calloc (5,4)



MEMORY LEAK

total memory = consumed + free

```
fl()
{
  int *p;
   p = malloc(4)
   *p = 5;
   --
}
```

FREE ( )

free ( ) is used to release memory of DMA variable only.

```
free (address) ;
```

```
void fl()
 {
   int *p;
   p = malloc (4);
    --
    --
   free (p);
    p = NULL;
 }
```

REALLOC ( )

realloc (pointer, newsize)

```
ptr = malloc (6) ;
q = realloc ( ptr, 10) ;
```

```
int *p = malloc ( 10) ;
```



```
*p = 20;
*(p+1) = 30 ;
*(p+2) = 40 ;  ← wrong
```