**Dynamic Memory Allocation**

The process of allocating memory at the time of execution is called as dynamic memory allocation.

alloc.h ---- header file

1. sizeof()- It is an unary operator. This operator gives the size of its argument in terms of bytes. The argument can be a variable, array or any datatype (int, float, char etc.). This operator is also used to determine the size of any structure.

sizeof(int); 2(bytes occupied by the int datatype)

/\*program to understand the sizeof operator\*/

#include<stdio.h>

main()

{

struct

{

char name[10];

int age;

float sal;

} rec;

int arr[10];

printf(“ size of structure = %d ”,sizeof(rec));

printf(“ size of int = %d ”,sizeof(int));

printf(“ size of array = %d ”,sizeof(arr));

}

Output

size of structure = 16

size of int = 2

size of array = 20

1. malloc ()-

This function is used to allocate memory space. The malloc () function reserves a memory space of specified size and gives the starting address to pointer variable.

ptr = (datatype\*) malloc (specified size);

ptr = (int\*) malloc (10);

This allocates 10 bytes of memory space to the pointer ptr of type int and the base address is stored in the pointer variable ptr.

ptr = (int\*)

/\* program to enter 5 numbers and print them using malloc\*/

#include<stdio.h>

main()

{

int i;

int \*a;

a = (int\*) malloc (5 \* sizeof(int))

for(i = 0;i <5; i++)

{

printf(“number %d= ”i+1);

scanf(“%d”,(a+i));

}

for (i=0;i<5;i++)

printf(“%d\n”,\*(a+i));

}