Pointers

Dynamic Memory Allocation

calloc() function

calloc()

- The name "calloc" stands for contiguous allocation.
- The malloc() function allocates memory and leaves the memory uninitialized. Whereas, the calloc() function allocates memory and initializes all bits to zero.
- Syntax of calloc()

  ptr = (castType*)calloc(n, size);
- Example:

  ptr = (float*) calloc(25, sizeof(float));
- The above statement allocates contiguous space in memory for 25 elements of type float.

calloc() and free()

```
// Program to calculate the sum of n numbers
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int n, i, *ptr, sum = 0;
    printf("Enter number of elements: ");
    scanf("%d", &n);
    ptr = (int*) calloc(n, sizeof(int));
    if(ptr == NULL)
    {
        printf("Error! memory not allocated.");
        exit(0);
    }
    printf("Enter elements: ");
    for(i = 0; i < n; ++i)
    {
        scanf("%d", ptr + i);
        sum += *(ptr + i);
    }

    printf("Sum = %d", sum);
    free(ptr);
    return 0;
}
```