

**Aim:**

Write a program to find the **sum** of n elements by allocating memory by using **malloc()** function.

At the time of execution, the program should print the message on the console as:

Enter n value :

For example, if the user gives the **input** as:

Enter n value : 4

Next, the program should print the message on the console as:

Enter 4 values :

For example, if the user gives the **input** as:

Enter 4 values : 1 5 4 2

then the program should **print** the result as:

The sum of given array elements : 12

**Note:** Write the functions **allocateMemory()**, **read()** and **sum()** in **UsingMalloc.c**.

**Source Code:**SumOfArray1.c

```
#include <stdio.h>
#include <stdlib.h>
#include "UsingMalloc.c"
void main() {
    int *p, n, i;
    printf("Enter n value : ");
    scanf("%d", &n);
    p = allocateMemory(n);
    printf("Enter %d values : ", n);
    read(p, n);
    printf("The sum of given array elements : %d\n", sum(p, n));
}
```

UsingMalloc.c

```
int *allocateMemory(int n);
void read(int*,int);
int sum(int*,int);
int*allocateMemory(int n)
{
    int*p;
    p=(int*)malloc(n*sizeof(int));
```

```

    return p;
}
void read(int*p,int n)
{
    int i,x;
    for(i=0;i<n;++i)
    {
        scanf("%d",p);
        p++;
    }
}
int sum(int*p,int n)
{
    int i,sum=0;
    for(i=0;i<n;++i)
    sum=sum+p[i];
    return sum;
}

```

### Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter n value : 4
Enter 4 values : 1 4 5 2
The sum of given array elements : 12

Test Case - 2
User Output
Enter n value : 3
Enter 3 values : 10 20 30
The sum of given array elements : 60

Test Case - 3
User Output
Enter n value : 4
Enter 4 values : -5 -6 -4 -2
The sum of given array elements : -17