Aim:

Write a C program to create dynamic memory allocation using malloc( )

Source Code:

malloc.c

```c
#include <stdio.h>
#include <stdlib.h>

int main() {
    int *p,i,n,sum=0;
    float avg;
    printf("Enter the number of integers: ");
    scanf("%d",&n);
    p=(int*)malloc(n*sizeof(int));
    if(p==NULL)
    {
        printf("Insufficient memory");
        exit(0);
    }
    printf("Enter %d integers:\n",n);
    for (i=0;i<n;i++)
    {
        scanf("%d",p+i);
    }
    for(i=0;i<n;i++)
    {
        sum+= *(p+i);
        avg =(float)sum/n;
    }
    printf("The sum of the integers is %d\n",sum );
    printf("The average of the integers is %0.2f\n",avg);
    free(p);
    return 0;

    // free dynamically allocated memory

}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter the number of integers: 3
Enter 3 integers: 1 5 3
The sum of the integers is 9
The average of the integers is 3.00

Test Case - 2

User Output
Enter the number of integers: 5
Enter 5 integers: 1 2 3 4 5
The sum of the integers is 15
The average of the integers is 3.00