

## Program#1

Write a program to find the average of n numbers using arrays.

Assignment\_6 >  q\_1.c >  main()

```
1  #include<stdio.h>
2  int main(){
3      int n;
4      printf("Enter the number of entries\n");
5      scanf("%d",&n);
6      int array[n];
7      printf("Enter the entries one by one\n");
8      for(int i=0;i<n;i++){
9          scanf("%d",&array[i]);
10     }
11     int sum=0;
12     for(int i=0;i<n;i++){
13         sum+=array[i];
14     }
15     float avg=(float)sum/n;
16     printf("the average of given %d numbers is %f\n",n,avg);
17 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

✓ TERMINAL

```
_1.c -o q_1 && "d:\Documents_D_Drive\~NIT study\Programs\Assignment
Enter the number of entries
10
Enter the entries one by one
2 3 5 6 4 3 5 7 22 10
the average of given 10 numbers is 6.700000

d:\Documents_D_Drive\~NIT study\Programs\Assignment_6>
```

## Program#2

2. Write a program to find the average of n numbers using arrays, by passing the array to the function.

Assignment\_6 >  q\_1.c >  main()

```
1  #include<stdio.h>
2  #include<stdlib.h>
3  float avg(int *array,int n){
4      int sum=0;
5      for(int i=0;i<n;i++){
6          sum+=array[i];
7      }
8      float average=(float)sum/n;
9      return average;
10 }
11 int main(){
12     int n;
13     printf("Enter the number of entries\n");
14     scanf("%d",&n);
15     printf("Enter the elements one by one\n");
16     int array[n];
17     for(int i=0;i<n;i++){
18         scanf("%d",&array[i]);
19     }
20     printf("%f",avg(array,n));
21 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

## ▼ TERMINAL

```
_1.c -o q_1 && "d:\Documents_D_Drive\~NIT study\Programs\Assig
Enter the number of entries
10
Enter the elements one by one
2 3 4 5 5 4 3 5 7 10
4.800000
d:\Documents_D_Drive\~NIT study\Programs\Assignment_6>
```

## Program#3

3. Use 2D- arrays to store 3 subject marks of 6 students, and find the average marks of each student and also average marks of each subject.

Assignment\_6 &gt; q\_3.c &gt; main()

```
1  #include<stdio.h>
2  ∨ int main(){
3      int array[6][3];
4      ∨ for(int i=0;i<6;i++){
5          printf("Enter the marks of student %d:-\n",i+1);
6          ∨ for(int j=0;j<3;j++){
7              printf("subject %d:",j+1);
8              scanf("%d",&array[i][j]);
9          }
10     }
11     float avg_student[6];
12     ∨ for(int i=0;i<6;i++){
13         int sum=0;
14         for(int j=0;j<3;j++) sum+=array[i][j];
15         avg_student[i]=(float)sum/3;
16     }
17     float avg_subject[3];
18     ∨ for(int i=0;i<3;i++){
19         int sum=0;
20         for(int j=0;j<6;j++) sum+=array[j][i];
21         avg_subject[i]=(float)sum/6;
22     }
23     for(int i=0;i<6;i++) printf("The average marks of student %d is %.1f\n",i+1,avg_student[i]);
24     printf("\n");
25     for(int i=0;i<3;i++) printf("Thr average marks of subject %d is %.1f\n",i+1,avg_subject[i]);
26 }
```

```
d:\Documents_D_Drive\~NIT study\Programs\Assignment_6>cd "d:
Enter the marks of student 1:-
subject 1:90
subject 2:99
subject 3:92
Enter the marks of student 2:-
subject 1:88
subject 2:85
subject 3:82
Enter the marks of student 3:-
subject 1:77
subject 2:71
subject 3:70
Enter the marks of student 4:-
subject 1:69
subject 2:67
subject 3:65
Enter the marks of student 5:-
subject 1:92
subject 2:93
subject 3:97
Enter the marks of student 6:-
subject 1:50
subject 2:55
subject 3:49
The average marks of student 1 is 93.7
The average marks of student 2 is 85.0
The average marks of student 3 is 72.7
The average marks of student 4 is 67.0
The average marks of student 5 is 94.0
The average marks of student 6 is 51.3

Thr average marks of subject 1 is 77.7
Thr average marks of subject 2 is 78.3
Thr average marks of subject 3 is 75.8

d:\Documents_D_Drive\~NIT study\Programs\Assignment_6>
```

## Program#4

4. Find if a given element is present in an integer array using linear search.

Assignment\_6 > C q\_4.c > main()

```
1  #include<stdio.h>
2  ∨ int ispresent(int *array,int n,int k){
3      for(int i=0;i<n;i++) if(array[i]==k) return 1;
4      return 0;
5  }
6  ∨ int main(){
7      int n;
8      printf("Enter the number of entries\n");
9      scanf("%d",&n);
10     int array[n];
11     printf("Enter the elements one by one\n");
12     for(int i=0;i<n;i++) scanf("%d",&array[i]);
13     int k;
14     printf("Enter the element you want to search\n");
15     scanf("%d",&k);
16     if(ispresent(array,n,k)) printf("%d is present in the given array\n",k);
17     else printf("%d is not in the given array\n",k);
18 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

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```
d:\Documents_D_Drive\~NIT study\Programs\Assignment_6\"q_4
Enter the number of entries
5
Enter the elements one by one
1 2 3 4 5
Enter the element you want to search
10
10 is not in the given array

d:\Documents_D_Drive\~NIT study\Programs\Assignment_6>
```

Program#5

5. Write a program to store a character string and display on screen.

Assignment\_6 &gt; C q\_5.c &gt; main()

```
1  #include<stdio.h>
2  int main()
3  {
4      char sentence[1000];
5      scanf("%[^\n]",sentence);
6      printf("%s",sentence);
7      return 0;
8  }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

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```
d:\Documents_D_Drive\~NIT study\Programs\Assignment_6\"q_5
Hello my roll NO is 20CSE1030 and key code is !@#$$%^&&^%$#32345
Hello my roll NO is 20CSE1030 and key code is !@#$$%^&&^%$#32345
d:\Documents_D_Drive\~NIT study\Programs\Assignment_6>
```

Program#5

6. Write a program to check if a given character is present in a string.

```
Assignment_6 > C q_6.c > is_present(char *, char)
1  #include<stdio.h>
2  void input(char *sentence){
3      int i=0;
4      char c;
5      do{
6          c=getchar();
7          sentence[i]=c;
8          i++;
9      }while(c!='\n');
10     sentence[i-1]='\0';
11 }
12 int is_present(char *sentence,char c){
13     int i=0;
14     while(sentence[i]!='\0'){
15         if(sentence[i]==c) return 1;
16         i++;
17     }
18     return 0;
19 }
20 int main()
21 {
22     char sentence[1000];
23     printf("Enter the string\n");
24     input(sentence);
25     char c;
26     printf(" Enter the character \n");
27     scanf("%c",&c);
28     if(is_present(sentence,c)) printf("%c is present in the given string\n",c);
29     else printf("%c is not there is the given string\n",c);
30     return 0;
31 }
```

PROBLEMS OUTPUT DEBUG CONSOLE

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```
Enter the string
hello my name is so and so
Enter the character
z
z is not there is the given string
```

```
d:\Documents_D_Drive\~NIT study\Programs\Assignment_6>
```

## Program#5

8. Write a program to count the number of vowels and consonants in a string

```
Assignment_6 > C q_7.c > vowel_consonant(char *, int *, int *)
1  #include<stdio.h>
2  void input(char *sentence){
3      int i=0;
4      char c;
5      do{
6          c=getchar();
7          sentence[i]=c;
8          i++;
9      }while(c!='\n');
10     sentence[i-1]='\0';
11 }
12 int vowel_consonant(char *sentence,int *a,int *b){
13     int i=0;
14     int count=0;
15     while(sentence[i]!='\0'){
16         char current=sentence[i];
17         if((current>=65 && current <=90) || (current>=97 && current<=122)){
18             switch(current){
19                 case 'a':
20                 case 'e':
21                 case 'i':
22                 case 'o':
23                 case 'u':
24                 case 'A':
25                 case 'E':
26                 case 'I':
27                 case 'O':
28                 case 'U': *a=*a+1;
29                 break;
30                 default: *b=*b+1;
31             }
32         }
33         i++;
34     }
35 }
36 int main()
37 {
38     char sentence[1000];
39     printf("Enter the string\n");
40     input(sentence);
41     int count_vowels=0;
42     int count_consonants=0;
43     vowel_consonant(sentence,&count_vowels,&count_consonants);
44     printf("The number of vowels are %d\nThe number of consonants are %d\n",count_vowels,count_consonants);
45     return 0;
46 }
```

```
Enter the string
My name is Mr.Bean
The number of vowels are 5
The number of consonants are 9
```

```
d:\Documents_D_Drive\~NIT study\Programs\Assignment_6>
```