

Name-Santushti Sharma

Roll No. 10314802719

DS Lab Work

Experiment -1

```
[*] Untitled1.cpp  expt2.cpp  expt3.cpp  expt4.cpp  expt5.cpp
1  // Program to find the sum of digits of number
2
3  #include <stdio.h>
4
5  int sum_of_digits(int num) {
6
7      int ans = 0;
8
9      while(num) {
10
11          ans += num%10;
12          num = num/10;
13      }
14      return ans;
15  }
16
17  int main() {
18
19      printf("SANTUSHTI SHARMA\n 10314802719\n");
20
21      printf("Enter a number :");
22
23      int num;
24      scanf("%d", &num);
25
26      printf("Sum of digits of a number is %d", sum_of_digits(num));
27
28
29      return 0;
30  }
```




C:\Users\Hp\Desktop\Untitled1.exe

```
SANTUSHTI SHARMA
10314802719
Enter a number : 45638
Sum of digits of a number is 26
-----
Process exited after 4.451 seconds with return value 0
Press any key to continue . . .
```

Experiment-2

Untitled1.cpp [*] expt2.cpp expt3.cpp expt4.cpp expt5.cpp

```
1 // program to find maximum of n input numbers
2 #include <stdio.h>
3
4 int findmax(int arr[], int size) {
5     int max = arr[0];
6
7     for(int i = 1; i < size; ++i) {
8         if(max < arr[i]) {
9             max = arr[i];
10        }
11    }
12
13    return max;
14 }
15
16 int main() {
17     printf("SANTUSHTI SHARMA\n 10314802719\n");
18     printf("Enter the n:");
19
20     int num;
21     scanf("%d", &num);
22
23     int arr[100];
24
25     for(int i = 0; i < num; ++i) {
26         scanf("%d", &arr[i]);
27     }
28     printf("Maximum of array is : %d", findmax(arr, num) );
29
30     return 0;
31 }
```

 Compile Log  Debug  Find Results

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

C:\Users\Hp\Desktop\expt2.exe

SANTUSHTI SHARMA

10314802719

Enter the n: 5

467

27

282

46

16

Maximum of array is : 467

Process exited after 15.18 seconds with return value 0

Press any key to continue . . .

Experiment-3

```
Untitled1.cpp  expt2.cpp  [*] expt3.cpp  expt4.cpp  expt5.cpp

1  // expt 3 - program to find the sum of array
2  #include <stdio.h>
3
4  int sum_of_num (int arr[], int size) {
5
6      int sum = 0;
7
8      for(int i = 0; i < size; ++i) {
9          sum += arr[i];
10     }
11
12     return sum;
13 }
14
15
16 int main() {
17
18     printf("SANTUSHTI SHARMA\n 10314802719\n");
19
20     printf("Enter the size of array :");
21
22     int num;
23     scanf("%d", &num);
24
25     int arr[100];
26
27     for(int i = 0; i < num; ++i) {
28         scanf("%d", &arr[i]);
29     }
30
31     printf("sum of numbers in array is : %d", sum_of_num(arr, num));
32
33     return 0;
34 }
35
```

Compile Log Debug Find Results

```
C:\Users\Hp\Desktop\expt3.exe
SANTUSHTI SHARMA
10314802719
Enter the size of array : 4
376
38
870
367
sum of numbers in array is : 1651
-----
Process exited after 17.05 seconds with return value 0
Press any key to continue . . .
```

Experiment-4

```
Untitled1.cpp  expt2.cpp  expt3.cpp  [*] expt4.cpp  expt5.cpp

1  //Expt 4 reverse array
2
3  #include <stdio.h>
4
5  void Reverse_Array(int arr[], int size) {
6
7      printf("Reversed Array :\n");
8
9      for(int i = size-1; i >= 0; --i) {
10
11         printf("%d\n", arr[i]);
12     }
13 }
14
15 int main() {
16
17     printf("SANTUSHTI SHARMA\n 10314802719\n");
18
19     printf("Enter the size of array");
20
21     int num;
22     scanf("%d", &num);
23
24     int arr[100];
25
26     for(int i = 0; i < num; ++i) {
27
28         scanf("%d", &arr[i]);
29     }
30
31     Reverse_Array(arr, num);
32
33     return 0;
34 }
```




```
C:\Users\Hp\Desktop\expt4.exe
SS SANTUSHTI SHARMA
10314802719
Enter the size of array 5
35
576
35
474
83
Reversed Array :
83
474
35
576
35

-----
Process exited after 14.87 seconds with return value 0
Press any key to continue . . .
```

Experiment – 5

Untitled1.cpp expt2.cpp expt3.cpp expt4.cpp expt5.cpp




```
1 // expt 5 - largest and smallest element in array
2
3 #include <stdio.h>
4
5 int small_val(int arr[], int size) {
6     int min = arr[0];
7
8     for(int i = 1; i < size; ++i) {
9         if(min > arr[i]) {
10             min = arr[i];
11         }
12     }
13
14     return min;
15 }
16
17 int large_val (int arr[], int size) {
18     int max = arr[0];
19
20     for(int i = 1; i < size; ++i) {
21         if(max < arr[i]) {
22             max = arr[i];
23         }
24     }
25
26     return max;
27 }
28
29 int main() {
30
31 }
```

es  Compile Log  Debug  Find Results


```

33
34     return max;
35 }
36
37 int main() {
38     printf("SANTUSHTI SHARMA\n 10314802719\n")
39     public int __cdecl printf (const char * __restrict__ _Format, ...)
40
41     int num;
42     scanf("%d", &num);
43
44     int arr[100];
45
46     for(int i = 0; i < num; ++i) {
47         scanf("%d", &arr[i]);
48     }
49
50
51     printf("Largest element of array : is %d \n", large_val(arr, num));
52     printf("Smallest element of array : is %d \n", small_val(arr, num));
53
54     return 0;
55 }

```

 Compile Log
  Debug
  Find Results

```

C:\Users\Hp\Desktop\expt5.exe
SANTUSHTI SHARMA
10314802719
Enter the size of array 5
10
30
-1
390
28
Largest element of array : is 390
Smallest element of array : is -1
-----
Process exited after 14.99 seconds with return value 0
Press any key to continue . . .

```