Bangladesh University of Business & Technology (BUBT)

Lab Report

Course Title : Structured Programming Language

Course Code : CSE 101

Experiment No : 01

Experiment Name : C language

Submitted by

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Intake :56

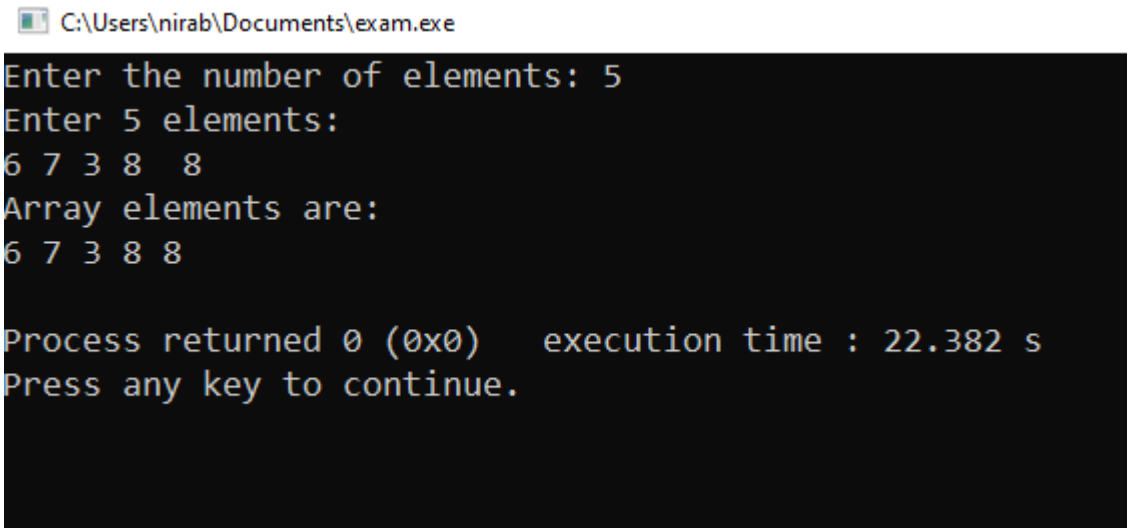
Section :9

Question 1: Write a C program to declare, initialize, input elements in array and print array. How to input and display elements in an array using for loop in C programming. C program to input and print array elements using loop.

```
#include <stdio.h>

int main() {
   int n, i;

   // Ask user for array size
   printf("Enter the number of elements: ");
   scanf("%d", &n);

   int arr[n]; // Declare array with n elements

   // Input elements
   printf("Enter %d elements:\n", n);
   for (i = 0; i < n; i++) {
      scanf("%d", &arr[i]);
   }

   // Display elements
   printf("Array elements are:\n");
   for (i = 0; i < n; i++) {
```

```
        printf("%d ", arr[i]);
    }

    printf("\n"); // for neat output
    return 0;
}
```

Output:

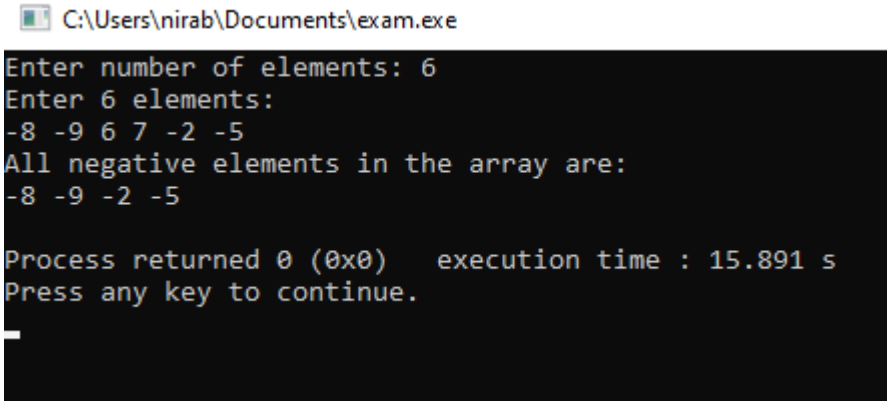


Question 2: Write a C program to input elements in array and print all negative elements. How to display all negative elements in array using loop in C program. Logic to display all negative elements in a given array in C programming.

```
#include <stdio.h>

int main() {
    int n, i;
```

```
    // Step 1: Get size of array
    printf("Enter number of elements: ");
    scanf("%d", &n);

    int arr[n]; // Declare array

    // Step 2: Input elements
    printf("Enter %d elements:\n", n);
    for(i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }

    // Step 3: Display negative elements
    printf("All negative elements in the array are:\n");
    for(i = 0; i < n; i++) {
        if(arr[i] < 0) {
            printf("%d ", arr[i]);
        }
    }

    printf("\n");
    return 0;
}
```

Output:

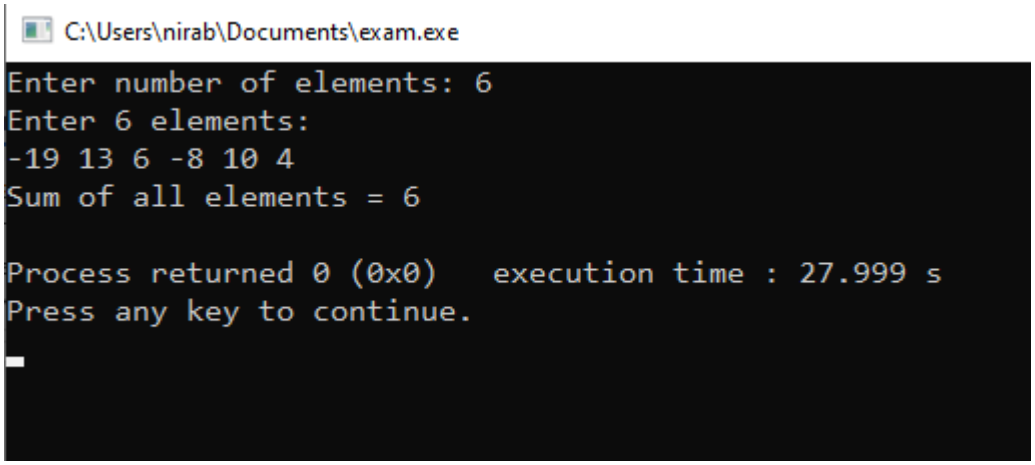


Question 3: Write a C program to read elements in an array and find the sum of array elements. C program to find sum of elements of the array. How to add elements of an array using for loop in C programming. Logic to find sum of array elements in C programming.

```
#include <stdio.h>

int main() {
    int n, i, sum = 0;

    // Step 1: Input array size
    printf("Enter number of elements: ");
    scanf("%d", &n);

    int arr[n]; // Declare array

    // Step 2: Input array elements
```

```
    printf("Enter %d elements:\n", n);
    for(i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }

    // Step 3: Find sum of elements
    for(i = 0; i < n; i++) {
        sum = sum + arr[i];
    }

    // Step 4: Display result
    printf("Sum of all elements = %d\n", sum);

    return 0;
}
```

Output:



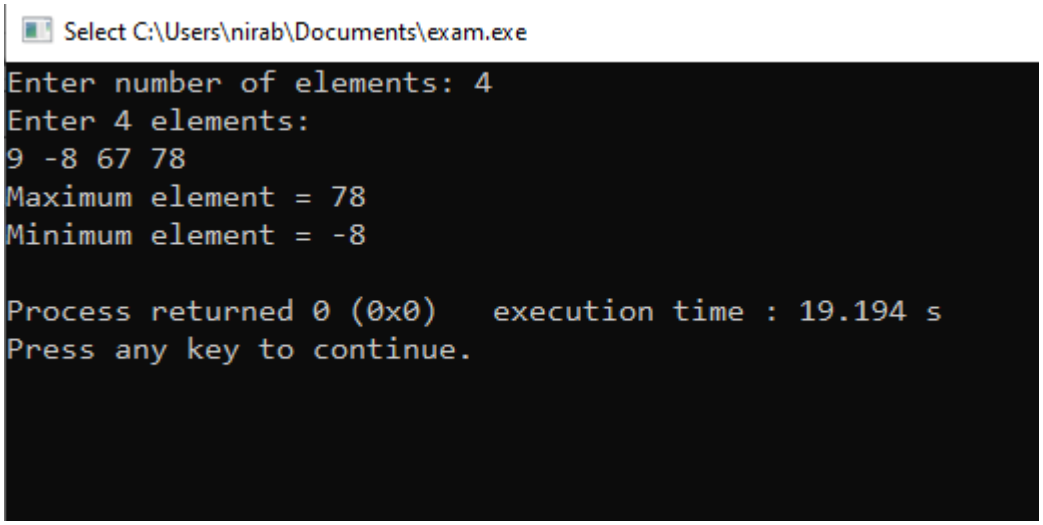
Question 4: Write a C program to input elements in an array from user, find maximum and minimum element in array. C program to find biggest and smallest elements in an array. Logic to find maximum and minimum element in array in C programming.

```
#include <stdio.h>


int main() {
    int n, i;
    int arr[100];
    int max, min;

    // Input array size
    printf("Enter number of elements: ");
    scanf("%d", &n);

    // Input elements
    printf("Enter %d elements:\n", n);
    for(i = 0; i < n; i++) {
```

```
    scanf("%d", &arr[i]);
}

// Initialize max and min with first element
max = min = arr[0];

// Linear search for max and min
for(i = 1; i < n; i++) {
    if(arr[i] > max)
        max = arr[i];
    else if(arr[i] < min)
        min = arr[i];
}

// Display results
printf("Maximum element = %d\n", max);
printf("Minimum element = %d\n", min);
```

```
    return 0;

}
```

Output

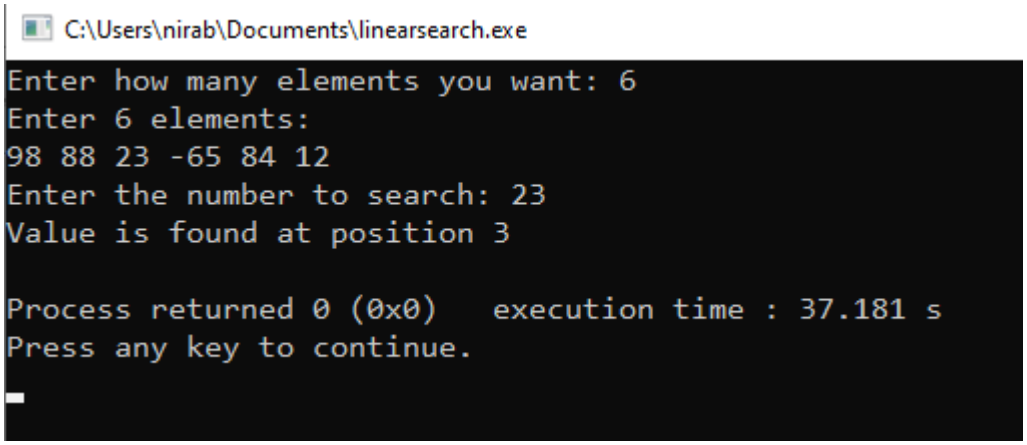


Question 5: Linear search

```
#include <stdio.h>


int main() {
    int a[100], n, i, num, flag = 0;


    printf("Enter how many elements you want: ");
    scanf("%d", &n);


    printf("Enter %d elements:\n", n);
    for(i = 0; i < n; i++) {
```

```
    scanf("%d", &a[i]);  // input array values
  }

  printf("Enter the number to search: ");
  scanf("%d", &num);

  for(i = 0; i < n; i++) {
    if(a[i] == num) {
      flag = 1;  // found
      break;
    }
  }
 if(flag == 1)
    printf("Value is found at position %d\n", i + 1);
  else
    printf("Value not found\n");
 return 0;
}
```

Output:


C:\Users\nirab\Documents\linearsearch.exe
Enter how many elements you want: 6
Enter 6 elements:
98 88 23 -65 84 12
Enter the number to search: 23
Value is found at position 3
Process returned 0 (0x0)   execution time : 37.181 s
Press any key to continue.