Assignment no: 02

Student Name: Adiba Zahin Prattash.

Subject: Structured Programming Language(SPL)

ID: 20234203151

Faculty Name: Md. Saddam Hossain.

1. Write a C program to read and print elements of array.

```
#include<stdio.h>
int main()
{
  int n;
  printf("Enter value for array size : ");
  scanf("%d",&n);
  int num[n];
  printf("Enter %d number for array value : ",n);
  for(int i=0;i<n;i++)
    scanf("%d",&num[i]);
  for(int i=0;i<n;i++)
    printf("index[%d] = {%d}\n",i,num[i]);
  }
  return 0;
 "C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"
Enter value for array size : 5
Enter 5 number for array value : 56
75
46
58
index[0] = {56}
index[1] = \{85\}
index[2] = {75}
index[3] = {46}
index[4] = {58}
                             execution time : 18.629 s
Process returned 0 (0x0)
Press any key to continue.
```

2. Write a C program to print all negative elements in an array.

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter value for array size : ");
    scanf("%d",&n);
    int num[n];
    printf("Enter %d number for array value : ",n);
    for(int i=0;i<n;i++)
    {</pre>
```

```
scanf("%d",&num[i]);
  for(int i=0;i<n;i++)
     if(num[i]<0)
       printf("index[%d] = {%d}\n",i,num[i]);
     }
  }
  return 0;
 "C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"
Enter value for array size : 5
Enter 5 number for array value : -45
-96
-36
85
index[0] = {-45}
index[2] = {-96}
index[3] = {-36}
Process returned 0 (0x0)
                                execution time : 9.633 s
Press any key to continue.
```

3. Write a C program to find sum of all array elements.

```
#include<stdio.h>
int main()
{
    int n,sum=0;
    printf("Enter value for array size : ");
    scanf("%d",&n);
    int num[n];
    printf("Enter %d number for array value : ",n);
    for(int i=0;i<n;i++)
    {
        scanf("%d",&num[i]);
    }
    for(int i=0;i<n;i++)
    {
        sum+=num[i];
    }
    printf("The summation = %d",sum);
    return 0;
}</pre>
```

```
"C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"

Enter value for array size : 5

Enter 5 number for array value : 25

42

-15

er63

85

**C The summation = 230

k*Process returned 0 (0x0) execution time : 8.148 s

Press any key to continue.
```

4. Write a C program to find maximum and minimum element in an array.

```
#include<stdio.h>
int main()
{
  int n, max, mini;
  printf("Enter value for array size : ");
  scanf("%d",&n);
  int num[n];
  printf("Enter %d number for array value : ",n);
  for(int i=0;i<n;i++)
    scanf("%d",&num[i]);
  }
  max=num[0];
  for(int i=1;i<n;i++)
    if(max<num[i])
      max=num[i];
  printf("The maximum number is = %d\n",max);
  mini=num[0];
  for(int i=1;i<n;i++)
    if(mini>num[i])
      mini=num[i];
  printf("The minimum number is = %d\n",mini);
  return 0;
"C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"
Enter value for array size : 5
Enter 5 number for array value : 12
69
85
The maximum number is = 85
The minimum number is = 12
Process returned 0 (0x0)
                           execution time : 8.122 s
Press any key to continue.
```

```
#include<stdio.h>
int main()
{
  int n,max1,max2,mini;
  printf("Enter value for array size : ");
  scanf("%d",&n);
  int num[n];
  printf("Enter %d number for array value : ",n);
  for(int i=0;i<n;i++)
    scanf("%d",&num[i]);
  }
  max1=max2=num[0];
  for(int i=1;i<n;i++)
    if(max1<num[i])
       max2 = max1;
       max1 = num[i];
    }
  printf("First largest = %d\n", max1);
  printf("Second largest = %d", max2);
  return 0;
 "C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"
Enter value for array size : 5
Enter 5 number for array value : 26
53
54
First largest = 54
Second largest = 53
Process returned 0 (0x0)
                          execution time : 8.413 s
Press any key to continue.
```

6. Write a C program to count total number of even and odd elements in an array.

```
#include<stdio.h>
int main()
{
   int n,count1=0,count2=0;
   printf("Enter value for array size : ");
   scanf("%d",&n);
   int num[n];
   printf("Enter %d number for array value : ",n);
```

```
for(int i=0;i<n;i++)
    scanf("%d",&num[i]);
  }
  for(int i=0;i<n;i++)
    if(num[i]%2==0)
       count1++;
    else
       count2++;
  }
  printf("Even number = %d\n",count1);
  printf("Odd number = %d\n",count2);
return 0;
 "C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"
Enter value for array size : 5
Enter 5 number for array value : 93
56
46
26
Even number = 3
Odd number = 2
Process returned 0 (0x0)
                          execution time : 9.955 s
Press any key to continue.
```

7. Write a C program to count total number of negative elements in an array.

```
#include<stdio.h>
int main()
{
    int n,count=0;
    printf("Enter value for array size : ");
    scanf("%d",&n);
    int num[n];
    printf("Enter %d number for array value : ",n);
    for(int i=0;i<n;i++)
    {
        scanf("%d",&num[i]);
    }

    for(int i=0;i<n;i++)
    {
        if(num[i]<0)
            count++;
    }
    printf("Total negative number = %d\n",count);</pre>
```

```
return 0;
}

"C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"

Enter value for array size : 5
Enter 5 number for array value : 69
-96
-36
-86
85
Total negative number = 3

Process returned 0 (0x0) execution time : 8.860 s
Press any key to continue.
```

8. Write a C program to copy all elements from an array to another array.

```
#include<stdio.h>
int main()
{
  int n,count=0;
  printf("Enter value for array size : ");
  scanf("%d",&n);
  int num[n],num2[n];
  printf("Enter %d number for array value : ",n);
  for(int i=0;i<n;i++)
  {
    scanf("%d",&num[i]);
  printf("This value for array one : \n");
  for(int i=0;i<n;i++)
    printf("num[%d] = {%d}\n",i,num[i]);
  printf("This value for array two : \n");
  for(int i=0;i<n;i++)
  {
    num2[i]=num[i];
    printf("num2[%d]= {%d}\n",i,num2[i]);
  }
return 0;
}
```

```
Enter value for array size : 5
Enter 5 number for array value : 56
85
96
75
42
This value for array one :
num[0] = {56}
num[1] = {85}
num[2] = {96}
num[3] = {75}
num[4] = {42}
This value for array two :
num2[0] = {56}
num2[1] = {85}
num2[1] = {85}
num2[2] = {96}
num2[2] = {96}
num2[3] = {75}
num2[4] = {42}

Process returned 0 (0x0) execution time : 8.874 s
Press any key to continue.
```

9. Write a C program to insert an element in an array.

```
#include <stdio.h>
#define MAX SIZE 100
int main()
{
  int arr[MAX_SIZE];
  int i, size, num, pos;
  printf("Enter size of the array : ");
  scanf("%d", &size);
  printf("Enter elements in array : ");
  for(i=0; i<size; i++)
    scanf("%d", &arr[i]);
  }
  printf("Enter element to insert : ");
  scanf("%d", &num);
  printf("Enter the element position : ");
  scanf("%d", &pos);
  if(pos > size+1 \mid | pos <= 0)
    printf("Invalid position! Please enter position between 1 to %d", size);
  }
  else
    for(i=size; i>=pos; i--)
       arr[i] = arr[i-1];
    }
```

```
arr[pos-1] = num;
      size++;
      printf("Array elements after insertion : ");
      for(i=0; i<size; i++)
         printf("%d\t", arr[i]);
      }
  }
  return 0;
 III "C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"
Enter size of the array : 5
Enter elements in array : 56
39
96
63
Enter element to insert : 56
Enter the element position : 3
Array elements after insertion : 56
                                          26
                                                            39
                                                                             63
                                                                    96
Process returned 0 (0x0)
                           execution time : 15.174 s
Press any key to continue.
```

#include <stdio.h> #define MAX_SIZE 100

10. Write a C program to delete an element from an array at specified position.

```
int main()
{
  int arr[MAX_SIZE];
  int i, size, pos;
  printf("Enter size of the array : ");
  scanf("%d", &size);
  printf("Enter elements in array : ");
  for(i=0; i<size; i++)
     scanf("%d", &arr[i]);
  }
  printf("Enter the element position to delete: ");
  scanf("%d", &pos);
  if(pos < 0 \mid | pos > size)
  {
     printf("Invalid position! Please enter position between 1 to %d", size);
  }
  else
    for(i=pos-1; i<size-1; i++)
    {
```

```
arr[i] = arr[i + 1];
     }
     size--;
     printf("\nElements of array after delete are : ");
     for(i=0; i<size; i++)
       printf("%d\t", arr[i]);
  }
  return 0;
 "C:\Users\MY\Desktop\New folder (2)\Addition_Array.exe"
Enter size of the array : 5
Enter elements in array : 26
65
42
12
Enter the element position to delete : 2
Elements of array after delete are : 26 65
                                                           12
Process returned 0 (0x0) execution time : 13.455 s
Press any key to continue.
```

11. Write a C program to addition between to array.

```
#include<stdio.h>
int main()
{
  int n;
  printf("Enter Array size : ");
  scanf("%d",&n);
  int number1[n],number2[n],value1,value2;
  printf("Enter value for first array : ");
  scanf("%d",&value1);
  for(int i=0;i<value1;i++)</pre>
  {
    printf("index[%d] = ",i);
    scanf("%d",&number1[i]);
  for(int i=0;i<value1;i++)</pre>
    printf("%d\n",number1[i]);
  printf("Enter value for second array : ");
  scanf("%d",&value2);
  for(int i=0;i<value2;i++)
  {
    printf("index[%d] = ",i);
    scanf("%d",&number2[i]);
```

```
for(int i=0;i<value2;i++)</pre>
    {
        printf("%d\n",number2[i]);
    printf("\nResult = \n");
    for(int i=0;i<value2;i++)
        printf("%d\n",number1[i]+number2[i]);
    }
}
 \hspace{0.1in} \blacksquare \hspace{0.2in} "C:\backslash Users\backslash MY\backslash Desktop\backslash New folder (2)\backslash Addition\_Array.exe" \\
index[2] = 78
index[3] = 95
index[4] = 63
23
46
78
95
63
Enter value for second array : 5 index[0] = 12
index[1] = 26
index[2] = 78
index[3] = 56
index[4] = 96
26
78
56
96
Result = 35 72
156
151
159
Process returned 0 (0x0)
                                            execution time : 18.053 s
Press any key to continue.
```