Structured Programming Lab (Summer-2022) lecture 06

Simanta Kumar Roy

221-35-909

Problem 01:

```c
#include <stdio.h>
void main()
{
    int i, j, a, n, number[30];
    printf("Enter the value of N \n");
    scanf("%d", &n);
    printf("Enter the numbers \n");
    for (i = 0; i < n; ++i)
        scanf("%d", &number[i]);
    for (i = 0; i < n; ++i)
    {
        for (j = i + 1; j < n; ++j)
        {
            if (number[i] > number[j])
            {
                a =  number[i];
                number[i] = number[j];
                number[j] = a;
            }
        }
    }
    printf("The numbers arranged in ascending order are given below \n");
    for (i = 0; i < n; ++i)
        printf("%d\n", number[i]);
}
```

Output:

```
Enter the value of N
5
Enter the numbers
1
2
3
8
5
The numbers arranged in ascending order are given below
1
2
3
5
8

Process returned 5 (0x5)   execution time : 14.670 s
Press any key to continue.
```

Problem 02:

```c
#include <stdio.h>
void main()
{
    int i, j, a, n, number[30];
    printf("Enter the value of N \n");
    scanf("%d", &n);
    printf("Enter the numbers \n");
    for (i = 0; i < n; ++i)
        scanf("%d", &number[i]);
    for (i = 0; i < n; ++i)
    {
        for (j = i + 1; j < n; ++j)
        {
            if (number[i] < number[j])
            {
                a =  number[i];
                number[i] = number[j];
                number[j] = a;
            }
        }
    }
    printf("The numbers arranged in ascending order are given below \n");
    for (i = 0; i < n; ++i)
        printf("%d\n", number[i]);
}
```

Output:

```
Enter the value of N
5
Enter the numbers
4 3 2 1 5
The numbers arranged in ascending order are given below
5
4
3
2
1

Process returned 5 (0x5)   execution time : 14.747 s
Press any key to continue.
```

Problem 03:

```c
#include <stdio.h>
void main()
{
    int i, j, a, n, number[30];
    printf("Enter the value of N \n");
    scanf("%d", &n);
    printf("Enter the numbers \n");
    for (i = 0; i < n; ++i)
        scanf("%d", &number[i]);
    for (i = 0; i < n; ++i)
    {
        for (j = i + 1; j < n; ++j)
        {
            if (number[i] < number[j])
            {
                a =  number[i];
                number[i] = number[j];
                number[j] = a;
            }
        }
    }
    printf("Maximum Number is: \n");
    printf("%d",number[0]);

}
```

Output:

```
Enter the value of N
5
Enter the numbers
1 2 3 4 5
Maximum Number is:
5
Process returned 1 (0x1)   execution time : 11.929 s
Press any key to continue.
```

Problem 04:

```c
#include <stdio.h>
void main()
{
    int i, j, a, n, number[30];
    printf("Enter the value of N \n");
    scanf("%d", &n);
    printf("Enter the numbers \n");
    for (i = 0; i < n; ++i)
        scanf("%d", &number[i]);
    for (i = 0; i < n; ++i)
    {
        for (j = i + 1; j < n; ++j)
        {
            if (number[i] > number[j])
            {
                a =  number[i];
                number[i] = number[j];
                number[j] = a;
            }
        }
    }
    printf("Minimum Number is: \n");
    printf("%d",number[0]);

}
```

Output:

```
Enter the value of N
5
Enter the numbers
5 4 3 2 1
Minimum Number is:
1
Process returned 1 (0x1)   execution time : 9.074 s
Press any key to continue.
```

Problem 05:

```c
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    int a[5] = {5,4,3,2,1};
    for(int i=4;i>=0;i--)
        printf("%d, ",a[i]);


    return 0;
}
```

Output:

```
1, 2, 3, 4, 5,
Process returned 0 (0x0)   execution time : 0.060 s
Press any key to continue.
```

Problem 06:

```c
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    int a[5] = {5,4,3,2,1};
    printf("The Array is : \n");
    for(int i=0;i<5;i++)
        printf("%d, ",a[i]);
printf("\n\nFind What ? : ");
int s;
scanf("%d",&s);
for(int i=0;i<=5;i++)
{
    if(a[i]==s)
    {
        printf("Found %d in index of %d \n",s,i+1);
        break;
    }
}

    return 0;
}
```

Output:

```
The Array is :
5, 4, 3, 2, 1,

Find What ? : 1
Found 1 in index of 5

Process returned 0 (0x0)   execution time : 2.529 s
Press any key to continue.
```

Problem 07:

```c
/* Simanta kumar Roy
   221-35-909
*/
#include<stdio.h>
int main()
{
    int a[5] = {5,4,3,2,1};
    printf("The Array is : \n");
    for(int i=0;i<5;i++)
        printf("%d, ",a[i]);
for(int i=0;i<=5;i++)
{
    if(a[i]%2!=0)
    {
        printf("\n\nFound Odd number %d in index of %d \n",a[i],i+1);

    }
}

    return 0;
}
```

Output:

```
The Array is :
5, 4, 3, 2, 1,

Found Odd number 5 in index of 1


Found Odd number 3 in index of 3


Found Odd number 1 in index of 5

Process returned 0 (0x0)   execution time : 0.038 s
Press any key to continue.
```

Problem 08:

```c
/* Simanta kumar Roy
   221-35-909
*/
#include<stdio.h>
int main()
{
    int a[5] = {5,4,3,2,1};
    printf("The Array is : \n");
    for(int i=0;i<5;i++)
        printf("%d, ",a[i]);
int sum=0;
for(int i=0;i<=5;i++)
{
    if(a[i]%2==0)
        sum+=a[i];

}
printf("\n\n The sum of Even number is %d\n\n",sum);

    return 0;
}
```

Output:

```
The Array is :
5, 4, 3, 2, 1,

 The sum of Even number is 6
```

Problem 09:

```c
#include<stdio.h>
int main(){
   /* 2D array declaration*/
   int disp[2][3];
   /*Counter variables for the loop*/
   int i, j;
   for(i=0; i<2; i++) {
      for(j=0;j<3;j++) {
         printf("Enter value for disp[%d][%d]:", i, j);
         scanf("%d", &disp[i][j]);
      }
   }
   printf("Two Dimensional array elements:\n");
   for(i=0; i<2; i++) {
      for(j=0;j<3;j++) {
         printf("%d ", disp[i][j]);
         if(j==2){
            printf("\n");
         }
      }
   }
   return 0;
}
```

Output:

```
Enter value for disp[0][0]:1
Enter value for disp[0][1]:2
Enter value for disp[0][2]:1
Enter value for disp[1][0]:2
Enter value for disp[1][1]:1
Enter value for disp[1][2]:2
Two Dimensional array elements:
1 2 1
2 1 2
```