

Programming Fundamentals

Lab Report

Lab 06



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Class	Programming Fundamentals CSC103 (BCE-2B)
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In Lab Tasks

Question no: 1

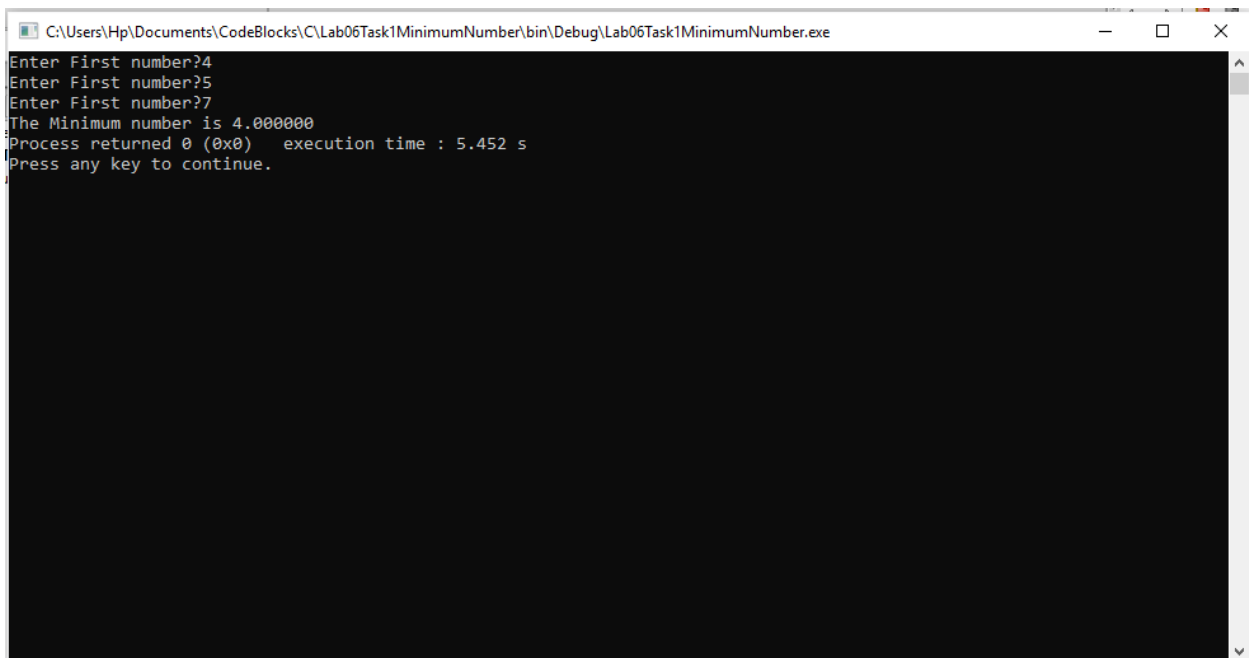
Write a C program that takes three inputs (floating type) from user and find the minimum number and print it on screen.(Do not use min or max c function)

Solution:

In this Program I asked the user to give three floating point numbers and then compared all using if/else statement and printed the minimum number on screen, code is attached below.

```
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      float x,y,z,comp;
7
8      printf("Enter First number?");
9      scanf("%f",&x);
10     printf("Enter First number?");
11     scanf("%f",&y);
12     printf("Enter First number?");
13     scanf("%f",&z);
14
15
16     if(x<y&& x<z)
17     {
18         comp=x;
19     }
20
21     else if(y<x&& y<z)
22     {
23         comp=y;
24     }
25
26     else if(z<x&& z<y)
27     {
28         comp=z;
29     }
30
31
32
33
34     printf("The Minimum number is %f",comp);
35
36 }
37
```

I tested the program for the value 4, 5 and 6 and it gave 4 as the lowest number.



```
C:\Users\Hp\Documents\CodeBlocks\C\Lab06Task1MinimumNumber\bin\Debug\Lab06Task1MinimumNumber.exe
Enter First number?4
Enter First number?5
Enter First number?7
The Minimum number is 4.000000
Process returned 0 (0x0)   execution time : 5.452 s
Press any key to continue.
```

Hence, our program is correct.

Question no: 2(a)

Write a C program that input value of n and calculate the value of y then print its value in main program on screen. Write separate functions to implement Functions.

$$y = f_1(n) + f_2(n)$$

$$f_1(n) = \sum_{n=1}^{26} \frac{5}{(n+5)+3}$$

$$f_2(n) = \sum_{n=1}^5 (-1)^{n-1} (2n)$$

Solution

In this program I made two separate functions, and then added their sum, the code is attached below,

```
4 float func1()
5 {
6     float a=0;
7     float b=0;
8
9     for(float i=1; i<=26; i++)
10     {
11
12         a=(5 / ((i+5) + 3) );
13         b = a + b;
14     }
15
16     return b;
17 }
18 float func2()
19 {
20     float z, a, b, x;
21     x=0;
22     a=0;
23     b=0;
24     for (int i=1; i<=5; i++)
25     {
26         if( (i-1) %2 ==0)
27         {
28             a=(1*2*i);
29             b=a+b;
30         }
31     }
```

```

26         if( (i-1) %2 ==0)
27         {
28             a=(1*2*i);
29             b=a+b;
30         }
31
32         else
33         {
34             a= (-1*2*i);
35             x=a+x;
36         }
37     }
38 }
39 z=b+x;
40 return z;
41 }
42
43 int main()
44 {
45     float x,y;
46
47     x=func1();
48     y=func2();
49
50     printf("The value of y is %f",x+y);
51
52 }
53

```

The value of the code is shown below,

```

C:\Users\Hp\Documents\CodeBlocks\Lab06Task2A\bin\Debug\Lab06Task2A.exe
The value of y is 13.001763
Process returned 0 (0x0)   execution time : 0.039 s
Press any key to continue.

```

Hence, our code is correct.

=====

Question no: 2(b)

- (a) Modify the above program to calculate the value of y .

$$y = f_1(n) + f_2(n)$$

$$f_1(\theta) = \frac{(-1)^n}{(n+1)!}$$

$$f_2(\theta) = \sum_{n=0}^4 2n$$

Solution

In this program I made two functions, then took a value n from the user then added the individual result of these programs and printed it, code is attached below.

```
4 float f2()
5 {
6     int n;
7     int a;
8     int b = 0;
9
10    for (n = 0; n <= 4; n++)
11    {
12        a = (2 * n);
13        b = a + b;
14    }
15
16    return b;
17 }
18
19 float f1(float n, int h)
20 {
21     float x = 0;
22     float b = 1;
23     float z;
24
25     for (x = 1; x <= n + 1; x++)
26     {
27         b = x * b;
28     }
29
30     if (h % 2)
31     {
32         z = (1 / b);
33     }
34     else
```

```

33     }
34     else
35     {
36         z = (-1 / b);
37     }
38
39     return z;
40 }
41 int main()
42 {
43     float n;
44     float e;
45     float q;
46     float f;
47     float z;
48     float y = 0;
49     int h;
50
51     printf("Enter n\n");
52
53     scanf("%f",&n);
54
55     f = f1(n,h);
56     e = f2();
57     y = e + f;
58     printf("Sum of two functions is: %f\n",y);
59
60 }
61
62
63

```

The result for value of n=123, is shown below.

```

"C:\Users\Hp\Downloads\ChromeDownloads\Lab S2 (2)\bin\Debug\Lab S2 (2).exe"
Enter n
123
Sum of two functions is: 20.000000

Process returned 0 (0x0)   execution time : 2.087 s
Press any key to continue.

```

Hence, Our code is correct.

=====

POST LAB

Question:

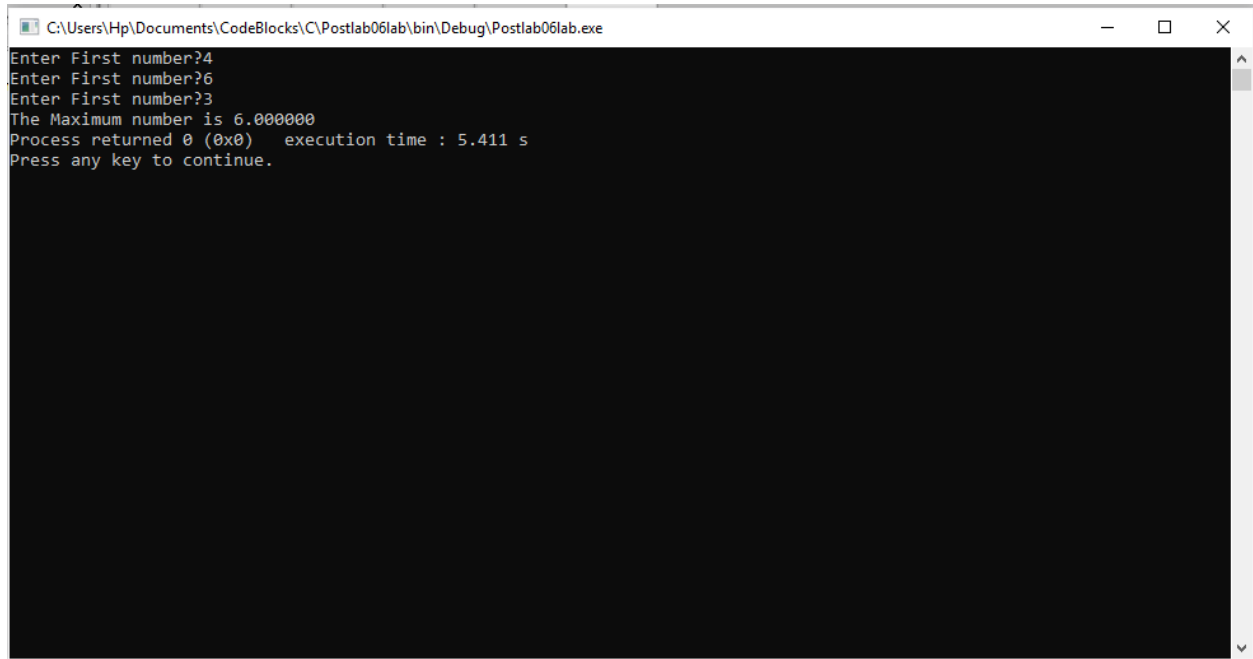
Write a C program that takes three inputs (floating type) from user and find the maximum number and print it on screen. (Do not use min or max c function)

Solution:

In this program I asked user to input three floating numbers and outputted the maximum number using if/else statement, code is attached below.

```
4  int main()
5  {
6      float x,y,z,comp;
7
8      printf("Enter First number?");
9      scanf("%f",&x);
10     printf("Enter First number?");
11     scanf("%f",&y);
12     printf("Enter First number?");
13     scanf("%f",&z);
14
15
16     if(x>y&& x>z)
17     {
18         comp=x;
19     }
20
21     else if(y>x&& y>z)
22     {
23         comp=y;
24     }
25
26     else if(z>x&& z>y)
27     {
28         comp=z;
29     }
30
31
32     printf("The Maximum number is %f",comp);
33
34 }
35
```


I tested the code for values 4,6, and 3 and it outputted 6 as the highest value.



```
C:\Users\Hp\Documents\CodeBlocks\C\Postlab06lab\bin\Debug\Postlab06lab.exe
Enter First number?4
Enter First number?6
Enter First number?3
The Maximum number is 6.000000
Process returned 0 (0x0)   execution time : 5.411 s
Press any key to continue.
```

Hence, our code is correct.

THE END