In The Name Of God
(Principles Of Programming - Quiz 3)
Estimated Time : 2 Hours

Shiraz University

You Are not Allowed To use :
Printf().
Scanf().
Pointers of any kind .
You can't use " math.h "

You can only use what the teacher and graders have taught you .
You can use " string.h "

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1 - write a function called my_printf() that gets a sequence called " print format " that tells us how to print the wanted variables and a " parameter field " that you use to pass in the parameters .

```
>>>
my_printf ( " Hello %d \t %s " , 12 , "Dr.X" ) ;
>>> Output :
>>> Hello 12       Dr.X
```

Your printf function should be able to support :
a - unlimited parameters in parameters field.
b - these escape characters :

\t , \n , %d , %f , %s

c - you can only use **getchar()** and **putchar()** functions in order to get input and output .

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2 - Write a function called Scanf() with the following specifications :

```
>>>
Int var1 , var2 ;
 Scanf ( " %d %d " , var1 , var2 ) ;
```

>> The user input should be :
12 13
The amount of var1 = 12 and var2 = 13

>>>

Float var1 ;
Int var2 ;
scanf(" Hello %f , %d " , var1 , var2);
The user's input should be :
Hello 12.2 , 10
The amount of var1 = 12.2 , var2 = 10 ;

if the user's input type didn't match the wanted prototype , the function shall print , "Error ".
EX :
Int var1 ;
Scanf (" Good Morning %d " , var1);
If the user enters :
Hello guys , 12

Output shall be : "Error , The prototypes wouldn't match "

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3 - برنامه ای بنویسید که از کاربر معادله درجه n را بگیرد ، از عدد 1 تا 20 را به عنوان ورودی به تابع پاس دهد و خروجی هرکدام را در کنارش پرینت کند .

Ex :
Input : X^4 + 2*X + 3*X^2 + 1
Outputs :

(1 , 7)
(2 , 33)
(3 , 106)
.....
(20 , 161240)

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4 - write a calculator that calculates the input with precedence of operators :

Input >>
(1 + (2*3) - 4*5 + 8^2)
Output :
51

The supported Operators are :

(,) , + , - , * , / , ^

Good Luck