In The Name Of God

The Most Compassionate And Merciful

Problem Set - 1

Fundamentals of C - Getchar & Putchar functions

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Sheet info :

* Problem Set 1
* Due Date : 97/12/8 - 23:55
* Just upload scorable questions on HWS.
* File name format : “**studentNumber\_PS1.zip**”
* Do not hesitate to ask any question from your graders!

1. Write a program that gets a stream of input and removes extra blanks ( spaces ) and prints the output without using printf() function .

Example :

Input : Hello World !

Output : HelloWorld !

2. write a program that would get an input stream and count the whitespaces .( whitespace : ‘\n’ , ‘\t’ ,’ ’ -> blank )

3. Write a program that would get an stream as input and prints any character that is an alphabet .( alphabets are : a,b,...z & A,B,...Z )

Attention : white spaces & "\n" are also non-alphabet characters .

4.Write a program that prints its input one word per line. ( without using any arrays )

5. Write a program to get an input stream from the user and when the user presses ‘Enter’ the program shall only print the integer-typed inputs.

Ex: albbjh125dx5689

Output : 1255689

6.write a function that gets an integer from the input and saves it into a variable .

(the input must be taken from the user by getchar() function and show the saved number using printf() function)

7.Write a function called “my\_printf()” that prints the value of an integer variable with putchar() function .writing a suitable prototype is UP To You.

|  |
| --- |
| #include <stdio.h>  int main(){  int number = 128 ;  my\_printf(number);  return 0 ;  } |

8. Write a program that gets two numbers from the user and adds them then prints their result out. ( only using getchar() and putchar() )

9.Write a program that gets inputs till the user presses “ctrl + z” and then calculates the average of the entered numbers ( without using Arrays ).

Ex :

5

10

99

3

output : 29.25

10.Write a program to print Celsius to Fahrenheit for temperatures between 0 C to 200 C .( Cel = (5/9)\*(fahr - 32 )

11. Which of these statements is/are acceptable for variables name(s)?



|  |
| --- |
| int number; int \_number; int my\_number; int number\_; int 69number; int \_; int \_\_; int number69; int iNt; int int; int char; int Char; |

12 - Research and find information about variable attributes for each existence variable types in C programming language?

(variable attributes are : name , value , address , size , type )

13.- write a program that gets an integer input in binary form and then prints out the decimal equivalent .

14 .Find 15 different formats which can use with “%” in first argument of printf() function.

15 .Verify that the expression getchar() != EOF is 0 or 1.

16. Write a program to print the value of EOF.

17. Develop a program which get 4 number from user and save sum , max and min of those number in an array .save the average in a variable . then read the values from that array and show them to the user. You can only use getchar() and printf() function to handle this program!(scorable)

18- What is the output of this code ?

|  |
| --- |
| void main(void){  int i = 0 ;  while ( i < 5 ) {  printf(" %d " , 10\*(i++) + ( ++i) ) ;  } } |

19 - find any errors that might cause you problem and fix them as you go .

(remember that C is a case sensitive language ).(scorable)

|  |
| --- |
| #include stdio.h  int main {    Int i = 0 ;  Int counter ;  while ( c = getchar() != EOF ){  if ( c = ' ' || c = '\n' ) {  Counter = Counter + 1 ;  }  i = i + 1 ; } printf(counter) If ( 0< i < 100 ) { printf(" We took %d characters as input : " , i ) } } |
|  |
|  |
|  |

20 - Write a function to calculate the nth Fibonacci number

( you have to use loops for this question . you are not allowed to code it recursively )

21 - Write a program that gets 3 integer numbers and prints the Max of them.

( you can only use getchar() & putchar() / you can not use printf() , You can only use 2 variables )

22 - Please check the following codes and tell us the reason .(scorable)

|  |
| --- |
| printf("%d" , 'a'); printf("%c",'a'); printf("%c",65); |

**If you have any question about this ps**

**ask Hossein Dehghanipoor or Erfan Sabouri.**