Week 1

MAHATHI.B

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COMPUTER SCIENCE AND DESIGN

We're starting out by printing the most famous computing phrase of all time! In the editor below, use either printf or cout to print the string ***Hello, World!*** to stdout.

Input Format

You do not need to read any input in this challenge.

Output Format

Print ***Hello, World!*** to stdout.

Sample Output

Hello, World!

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main ()
{
    printf ("Hello, World!");
    return 0;
}
```

	Expected	Got	
✓	Hello, World!	Hello, World!	✓

Passed all tests! ✓

Objective

This challenge will help you to learn how to take a character, a string and a sentence as input in C.

To take a single character ***ch*** as input, you can use scanf("%c", &ch); and printf("%c", ch) writes a character specified by the argument char to stdout:

char ch;

scanf("%c", &ch);

printf("%c", ch);

This piece of code prints the character ***ch***.

Task

You have to print the character, ***ch***.

Input Format

Take a character, ***ch*** as input.

Output Format

Print the character, ***ch***.

```c
#include<stdio.h>
int main()
{
    char ch;
    scanf("%c",&ch);
    printf ("%c",ch);
    return 0;
}
```

	Input	Expected	Got	
✓	c	c	c	✓

Passed all tests! ✓

Objective

The fundamental data types in c are int, float and char. Today, we're discussing int and float data types.

The printf() function prints the given statement to the console. The syntax is printf("format string",argument_list);. In the function, if we are using an integer, character, string or float as argument, then in the format string we have to write %d (integer), %c (character), %s (string), %f (float) respectively.

The scanf() function reads the input data from the console. The syntax is scanf("format string",argument_list);. For ex:
The scanf("%d",&number) statement reads integer number from the console and stores the given value in variable ***number***.

To input two integers separated by a space on a single line, the command is scanf("%d %d", &n, &m), where ***n*** and ***m*** are the two integers.

Task

Your task is to take two numbers of int data type, two numbers of float data type as input and output their sum:

1. Declare ***4*** variables: two of type int and two of type float.
2. Read ***2*** lines of input from stdin (according to the sequence given in the 'Input Format' section below) and initialize your ***4*** variables.
3. Use the **+** and **-** operator to perform the following operations:

- Print the sum and difference of two int variable on a new line.
- Print the sum and difference of two float variable rounded to one decimal place on a new line.

```c
#include<stdio.h>
int main()
{
    int a, b  ;
scanf("%d%d",&a,&b);
printf ("%d",a+b);
printf (" %d",a-b);
float c,d ;
scanf ("%f%f",&c,&d);
printf ("\n%.1f",c+d);
printf (" %.1f", c-d);
return 0;
}
```

	Input	Expected	Got	
✓	10 4 4.0 2.0	14 6 6.0 2.0	14 6 6.0 2.0	✓
✓	20 8 8.0 4.0	28 12 12.0 4.0	28 12 12.0 4.0	✓

Passed all tests! ✓

Write a program to input a name (as a single character) and marks of three tests as m1, m2, and m3 of a student considering all the three marks have been given in integer format.

Now, you need to calculate the average of the given marks and print it along with the name as mentioned in the output format section.

All the test marks are in integers and hence calculate the average in integer as well. That is, you need to print the integer part of the average only and neglect the decimal part.

Input format :

Line 1 : Name(Single character)

Line 2 : Marks scored in the 3 tests separated by single space.

Output format :

First line of output prints the name of the student.

Second line of the output prints the average mark.

Constraints

Marks for each student lie in the range 0 to 100 (both inclusive)

Sample Input 1 :

```c
#include<stdio.h>
int main()
{
    char a;
    int m1,m2,m3,tot,avg;
    scanf("%c",&a);
    scanf("%d%d%d",&m1,&m2,&m3);
    tot=m1+m2+m3;
    avg=tot/3;
    printf("%c",a);
    printf("\n%d",avg);
    return 0;
}
```

	Input	Expected	Got	
✓	A 3 4 6	A 4	A 4	✓
✓	T 7 3 8	T 6	T 6	✓
✓	R 0 100 99	R 66	R 66	✓

Some *C* data types, their format specifiers, and their most common bit widths are as follows:

- *Int ("%d"):* 32 Bit integer
- *Long ("%ld"):* 64 bit integer
- *Char ("%c"):* Character type
- *Float ("%f"):* 32 bit real value
- *Double ("%lf"):* 64 bit real value

Reading

To read a data type, use the following syntax:

scanf("`format_specifier`", &val)

For example, to read a *character* followed by a *double*:

char ch;

double d;

scanf("%c %lf", &ch, &d);

For the moment, we can ignore the spacing between format specifiers.

Printing

To print a data type, use the following syntax:

printf("`format_specifier`", val)

For example, to print a *character* followed by a *double*:

char ch = 'd';

double d = 234.432;

printf("%c %lf", ch, d);

```c
#include<stdio.h>
int main()
{
    int a;
    long b;
    char c;
    float d;
    double e;
    scanf("%d %ld %c %f %lf",&a,&b,&c,&d,&e);
    printf("%d\n",a);
    printf("%ld\n",b);
    printf("%c\n",c);
    printf("%.3f\n",d);
    printf("%.9lf\n",e);
    return 0;
}
```

	Input	Expected	Got	
✓	3 12345678912345 a 334.23 14049.30493	3 12345678912345 a 334.230 14049.304930000	3 12345678912345 a 334.230 14049.304930000	✓

Passed all tests! ✓

Write a program to print the ASCII value and the two adjacent characters of the given character.

Input

E

Output

69
D F

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    char E;
    scanf("%c",&E);
    printf("%d",E);
    printf("\n%c",E-1);
    printf(" %c",E+1);
    return 0;
}
```

	Input	Expected	Got	
✓	E	69 D F	69 D F	✓

Passed all tests! ✓