

電腦中的資料，隨你解釋：把它加起來

Data in the computer, interpret it as you wish: sum them and output

電腦裡面所有資料都是以 0/1 存放於電腦記憶體中；記憶體資料，以不同方式解釋，可以得到的不同的結果；本練習要求你讀入一小段字串，要求你以不同資料型態解釋其值，並輸出該型態下之值的和(雖然不見得合理)；

Data in the computer are stored in the computer memory in the form of 0/1. Memory data can be interpreted in different ways, and different results can be obtained. This exercise requires you to read a small string and requires you to use different data types. State interprets its value and outputs the summation of the type (although this may not be reasonable).

例如，若你讀入以下兩行文字

for example, if you read the following two lines of text

Hello

Tatung

將它們存放於大小為 16 的字元陣列中，以十六進制觀之將為

Store them in a character array of size 16, which in hexadecimal will be

48 65 6C 6C 6F 0A 54 61 74 75 6E 67 0A 00 00 00

這 16 bytes 的資料你可以將它們視為 8 個 short int 形成的陣列、4 個 int 的陣列、2 個 long long 的陣列、4 個 float 的陣列或 2 個 double 的陣列。下表呈現以不同方式看待這 16 bytes 資料時，它們的值：

You can think of these 16 bytes of data as an array of 8 short ints, an array of 4 ints, an array of 2 long longs, an array of 4 floats, or an array of 2 doubles. The following table shows their values when looking at the 16 bytes of data in different ways:

char [16]	H	e	l	l	o	\n	T	a	t	u	n	g	\n	\0	\0	\0
	48	65	6C	6C	6F	0A	54	61	74	75	6E	67	0A	00	00	00
short [8]	25928		27756		2671		24916		30068		26478		10		0	
int [4]	1819043144				1632897647				1735292276				10			
long long [2]	7013241993399395656								44684965236							
float [4]	1.143139E+27				2.444663E+20				1.126090E+24				1.401298E-44			
double [2]	7.043880E+160								2.207731e-313							

本練習中，須要你建立一個足夠大小的陣列，將這個陣列元素初值均設為零。然後，從 stdin 讀取所有文字資料置於此陣列中，直至 EOF 為止，並數出讀到的字元數，將陣列大小調整至最小 8 的倍數，使之足以包含所有讀入字元；然後視此陣列為各種不同資料型態形成的陣列，輸出各種型態下陣列的和。(數值加起

來，可能超過範圍，變成負的，或變小，很正常！)

In this exercise, you need to create an array of sufficient size and set the initial values of the array elements to zero. Then, read all text data from stdin and place it in this array until EOF, count the number of characters read, and adjust the array size to a minimum multiple of 8, so that it is enough to contain all the characters read; then Treat this array as an array formed by various data types, and output the sum of the arrays in various types. (When the values are added up, they may exceed the range, become negative, or become smaller. This is normal!)

輸入說明 (Input Examples)

一篇大小不超過 2000 字元的英文文章。

An English article of no more than 2000 characters.

輸出說明 (Output Examples)

輸出將文字陣列視為題目說明中的不同資料型態陣列後的和，參考範例輸出了解輸出格式；printf() 輸出float與double時，格式標籤使用%e。

The output treats the text array as the sum of arrays of different data types in the title description. Refer to the sample output to understand the output format; when printf() outputs float and double, the format tag uses %e.

範例輸出

Data Type	Summary
short	6755
int	892265781
long long	7013242038084360892
float	1.144265e+27
double	7.043880e+160