

# Programming assignment 10

## Huffman code

### Input (Standard input)

In the first line, an integer  $N$  is given which means the number of character

( $1 \leq N \leq 30000$ ).

Next each  $N$  line, character and number of character are given.

(Length of character is always 4)

Last line, an integer  $S$  is given which mean total number of character in text

( $1 \leq S \leq 30000$ )

### Output (Standard output)

In the first line, print the number of bits using fixed-length code

In the next line, print the number of bits using Huffman code

### [Example]

Sample Input	Sample Output
6 ffff 5000 eeee 9000 cccc 12000 bbbb 13000 dddd 16000 aaaa 45000 100000	300000 224000

### Description

1. File name must be Huffman.cpp
2. Make a comment of your student ID, name and class in the first line of the source code.  
ex) 2014601028\_Honggildong\_A
3. Back up your submitted source code for an unexpected accident.