

Problem 2.1 Tahoma Loves Spiderman

General Statement: Welcome to Tahoma's contest, starring Spiderman and some famous villains. And it will also star some not so famous villains. In this problem, the villain's names will be input, then output their greeting.

Input: All input will be via keyboard. There will only be one input.

Output: The output will be "HELLO, MY NAME IS insert name here".

Helpful Hints / Assumptions: none.

Sample Input :

JUGGERNAUT

Sample Output :

HELLO, MY NAME IS JUGGERNAUT



Problem 2.2 Even Villains Have To Chill Sometimes

General Statement: It's almost summer time. Well sort of. These villains are going on vacation based on their name. If the length of the name (including spaces and punctuation) is even then output "NAME IS GOING TO CHILL" If odd then output "NAME IS AN ODD VILLAIN, HE'S STAYING HOME"

Input: All input will be via keyboard. There will only be one input.

Output: If even then output "NAME IS GOING TO CHILL" If odd then output "NAME IS AN ODD VILLAIN, HE'S STAYING HOME"

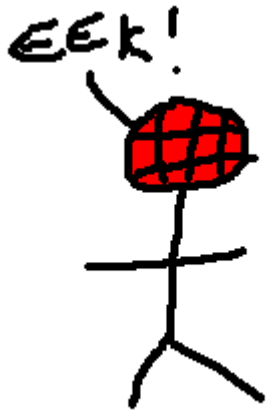
Helpful Hints / Assumptions: count all the characters in the string and determine if the string is odd or even. Spaces and punctuations are counted also.

Sample Input :

JOE SMITH

Sample Output :

JOE SMITH IS AN ODD VILLAIN, HE'S STAYING HOME



Problem 2.3 Spidey Vowels

General Statement: Enter in a word with vowels. Take out all of the vowels and print out the word without vowels.

Input: There will be one input. Please input with keyboard.

Output: Output the word without vowels.

Helpful Hints / Assumptions: Vowels are AEIOUaeiou not y!

Sample Input :

Doc Oc

Sample Output :

Dc c



Problem 2.4

Fill In The Blank...

General Statement: Spiderman is fighting a sorcerer and being the sneaky sorcerer he is, he cast PARTIAL-MUTE on Spiderman. So now Spiderman is trying to get things done but he can't finish his sentences. Please fix his sentences for him ☺ Replace all FZGH's with the word that he wants to say.

Input: There will be one input. Please input with keyboard. Each input will be 2 lines. First line is the sentence to fix, and second line is the phrase to insert.

Output: Output will be the correct sentence.

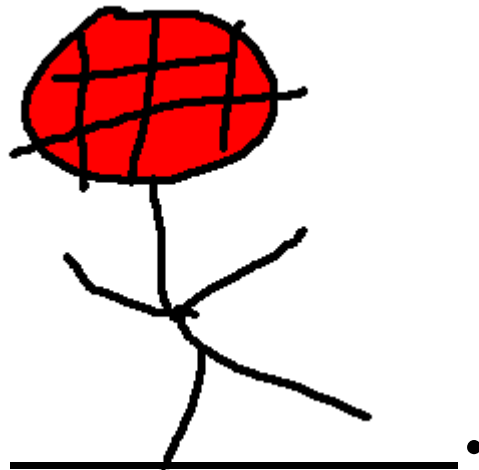
Helpful Hints / Assumptions: FZGH might not always be at the end of the sentence. There will only be one FZGH.

Sample Input :

```
HELLO, I'D LIKE TO ORDER A FZGH  
KID'S MEAL
```

Sample Output :

```
HELLO, I'D LIKE TO ORDER A KID'S MEAL
```



Fill in the

Problem 2.5 Has Marvel Finally Ran Out Of Ideas?

General Statement: It's the 100,000th issue of Spiderman. Seeing as how Marvel is so original, the villain is a Pyramid Man. Everything Spiderman says, Pyramid Man will convert it to a pyramid.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain one word.

Name of Data File : pr25.txt

Output: Output will be the pyramid.

Helpful Hints / Assumptions: The input will always be one word.

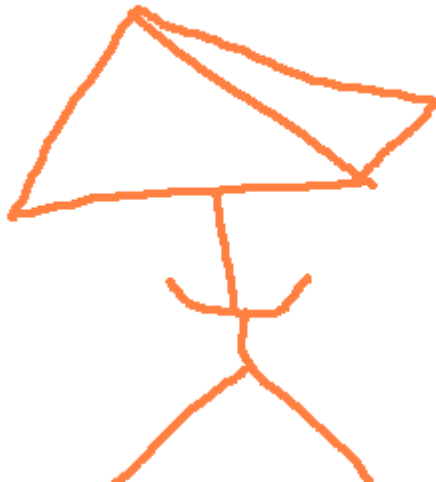
Sample Input :

```
2
PYRAMID
PONY
```

Sample Output :

```
P
PY
PYR
PYRA
PYRAM
PYRAMI
PYRAMID
```

```
P
PO
PON
PONY
```



Problem 2.6 Spider Math?

General Statement: To add to the list of things that Spiderman could not do, math is one of them. Please take the inputs and operation and output the result.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain two numbers, then the operand.

Name of Data File : pr26.txt

Output: Output the mathematic outcome.

Helpful Hints / Assumptions: The numbers are all integers. However, division should be rounded properly, not truncated. The operations will be limited to +, -, *, /

Sample Input :

```
3
4 5 +
6 21 -
3 6 *
```

Sample Output :

```
9
-15
18
```



Problem 2.7 Spiderman And The Pole

General Statement: Spiderman is very delirious from a certain “toxin”. And he is looking at a flagpole mounted horizontally on an office building. Spiderman is convinced that the flagpole wants to fight him. Help Spiderman find the distance between him and the flagpole so he can shoot the right amount of web. Yep, that flagpole is mean.

Input: The first line in the data file contains a number of the data sets to follow. In each data set after that, you will be given a line with two numbers, the first number is the height of the flagpole from the ground and the second number is the distance of Spiderman along the ground to where the pole is directly above.

Name of Data File : pr27.txt

Output: Output the distance between Spiderman and the flagpole rounded to the nearest hundredth followed by “ METERS”.

Helpful Hints / Assumptions: Assume Spiderman is always on the ground. Use the Pythagorean Theorem please. $X^2+Y^2 = \text{Distance}^2$

Sample Input :

3

3 4

5 12

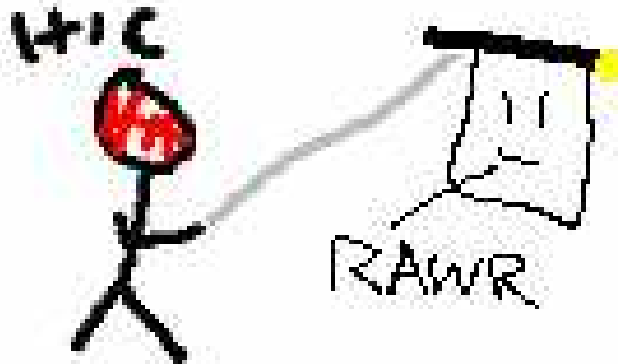
4 7

Sample Output :

5.00 METERS

13.00 METERS

8.06 METERS



Problem 5.1 Webs Of Deceit!!..or Just Webs

General Statement: Spiderman suddenly gets this urge to shoot webs. Input will be 2 numbers. Round both numbers to get the dimension of the web he wants to shoot.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain two numbers. The first number will be the width and the second number will be the height.

Name of Data File : pr51.txt

Output: Output the picture of the webs. Webs consist of / \ | 0 and -'s

Helpful Hints / Assumptions: Round both numbers then draw the picture of the web. Round .5 up.

Sample Input :

```
2
3 3.4
1 .99
```

Sample Output :

```
\|/\|/\|/
-0--0--0-
/|\|/\|/
\|/\|/\|/
-0--0--0-
/|\|/\|/
\|/\|/\|/
-0--0--0-
/|\|/\|/
```

```
\|/
-0-
/|\
```



Problem 5.2 Spidey Latin

General Statement: Peter Parker has accidentally triggered a time machine back to the days when Latin was king. The sly fox that Peter is, he comes up with his own form of Latin to use with the locals. Help Peter translate sentences into “Spidey Latin.”

Input: The first line in the data file contains the number of the data sets to follow. Each data set will contain one sentence.

Name of Data File: pr52.txt

Output: Output each of the sentences with Spidey-latin applied to each word in the sentence. Please output with a line between each output for easier reading.

Helpful Hints / Assumptions: To change a word into Spidey Latin, the first letter of the word is placed at the end of the word and a “DEY” is attached to the end.

Sample Input :

3

SPIDERMAN WENT TO THE STORE
AUNT MAY HAS GONE TO THE HOSPITAL
CY-FALLS COMPUTER SCIENCE

Sample Output :

PIDERMANSDEY ENTWDEY OTDEY HETDEY TORESDEY

UNTADEY AYMDEY ASHDEY ONEGDEY OTDEY HETDEY OSPITALHDEY

Y-FALLSCDEY OMPUTERCDEY CIENCESDEY



Problem 5.3 Spiderman Falls From A Building

General Statement: OH NO! Spiderman was pushed off a building by Doctor Octopus. During the fall from the building, Spidey's perception slows down and he goes into deep thought. For an undisclosed reason, he wants to know the speed at which he's going to hit the floor. You must calculate the final speed at which Spiderman strikes concrete. You will be given the floor at which he was pushed off. The equation will be given.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain a number, which is the floor at which he falls.

Name of Data File : pr53.txt

Output: Output the speed at which Spiderman hits the concrete. In the format "<Final Speed> M/S" the final speed must be to the nearest thousandth place.

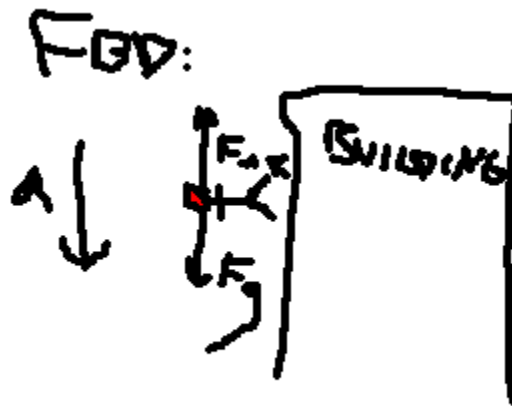
Helpful Hints / Assumptions: Each floor puts Spiderman up 3 meters.
Equation: final speed = Square root($2 * 9.8 * \text{distance}$)
The first floor is 0 meters. The second floor is 3 meters. The third floor is 6 meters etc.

Sample Input :

4
6
16
11
2

Sample Output :

17.146 M/S
29.698 M/S
24.249 M/S
7.668 M/S



Problem 5.4 Let's Find Some Duplicate Letters

General Statement: Spiderman is given a letter and he, for some reason, wants to find all the duplicate letters in the order that they are found. You will be given a string and characters come in pairs. In the order they are found, replace them with numbers.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain a single string of characters with no spaces.

Name of Data File : pr54.txt

Output: Output the final string of numbers with a space between each number.

Helpful Hints / Assumptions: Each letter will exist twice in the string. There will not be more than 10 pairs. The numbering begins at 0.

Sample Input :

2

AJEKKDLWEWDLJA

QWERTYQWERTY

Sample Output :

0 1 2 3 3 4 5 6 2 6 4 5 1 0

0 1 2 3 4 5 0 1 2 3 4 5

Problem 5.5 Chung The Prime Loving Dry Cleaner

General Statement: Peter Parker likes to get his red tights cleaned at Chung's Dry Cleaning Store. Chung really likes prime numbers so he gives discounts based on if the number of clothing is prime. Chung charges \$.99 per article of clothing, but \$.77 if it's the prime numbered suit.

Input: The first line in the data file contains a number of the data sets to follow. Each data set contains one number. That number is the number of suits that Spiderman is getting cleaned.

Name of Data File: pr55.txt

Output: The output will be "CHUNG IS CHARGING SPIDERMAN \$cost" The amount of money must be properly outputted.

Helpful Hints / Assumptions: 1 is not a prime. Each individual suit's cost will be based on the number of the suit. Example: the first suit is not a prime, therefore it costs \$.99, the second suit is prime, therefore \$.77, the third suit is also prime, therefore \$.77 etc etc.

Sample Input :

```
3
2
7
25
```

Sample Output :

```
CHUNG IS CHARGING SPIDERMAN $1.76.
CHUNG IS CHARGING SPIDERMAN $6.05.
CHUNG IS CHARGING SPIDERMAN $22.77.
```



Problem 5.6 Spiderman Is Talking Backwards ☹

General Statement: That blasted Sorcerer is back. This time he can cast Confusion, and boy does it confuse Spiderman.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain a sentence.

Name of Data File : pr56.txt

Output: The output will be the input with the order of the words reversed.

Helpful Hints / Assumptions: Don't forget the punctuations!

Sample Input :

2

MY SPIDEY SENSE IS TINGLING.

CEASE YOUR SENSELESS VIOLENCE HOBGOBLIN!

Sample Output :

TINGLING. IS SENSE SPIDEY MY

HOBGOBLIN! VIOLENCE SENSELESS YOUR CEASE



Problem 5.7

Mary Jane <3's Spiderman

General Statement: MJ wants to send messages to Spiderman because she really likes him. These messages are coded because...uhh you know, all the uhh...villains are spying on her... The input will be a series of coded strings and you must decode them. The method of decoding is to shift the letters down the alphabet according to the letter's position in the word. The first letter is shifted down one, second two, et cetera.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain a sentence.

Name of Data File : pr57.txt

Output: The output will be the decoded version of the string.

Helpful Hints / Assumptions: Change only characters, not numbers, symbols or spaces. If the shifting down of letters goes past Z, go back to A. All letters are capitalized.

Sample Input :

3

RNFZZL-ERD, VYKJV FM NSQ EMO KSKYC?

GCV! HR'O Z ACXQOCYMC CYV NSQODXX.

BMJAKVCVCDUJDNFERNTPHWEUA.

Sample Output :

SPIDER-MAN, WANNA TO GO OUT FOR LUNCH?

HEY! IT'S A BEAUTIFUL DAY OUTSIDE.

COMEPICKMEUPATTHELIBRARY.



Problem 5.8 Oh No Spiderman Is Lost

General Statement: Peter Parker is on his way to battle many villains throughout the city, but he is oh so lost. However, he recently got a new GPS device (and by GPS device we mean you). You will be given the coordinate pairs of where each villain is. Calculate the total distance Peter has to travel in order to reach all the points. So, onward to the villains!

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain (x,y) coordinates.

Name of Data File: pr58.txt

Output: Output the total distance Spiderman has to travel to get from place to place.

Helpful Hints / Assumptions: Even though Spiderman can do the web swing thing, he still can't travel through buildings. So, these are not diagonal distances, all movement will be horizontal and vertical. The inputs are all integers, positive and negative included. He always begins at (0,0). The movement is continuous, so from point A he'd move to point B then to point C, not back to point A.

Sample Input :

```
5
(3,3)
(6,0)
(-4,1)
(5,-3)
(0,1)
```

Sample Output :

```
45
```



Problem 9.1 Web Design

General Statement: Spiderman is working on shooting his web, so he decides to try to make art. He's not Picasso, but he getting there. He can only make the web if it is a palindrome (same word forwards and backwards) though. Write a program to help him out.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain a word.

Name of Data File : pr91.txt

Output: Output the fancy web as shown below or "NOT A PALIN".

Helpful hints / assumptions : A palindrome is a word that reads the same forwards as it does backwards. The only words that Spiderman can output in the fancy form below are those words that are palindromes.

Sample Input :

```
3
RACECAR
A
CHICKEN
```

Sample Output:

```
RACECAR
AA  AA
C C C C
E  E  E
C C C C
AA  AA
RACECAR
```

```
A
```

```
NOT A PALIN
```



Yes, we used this picture again.

Problem 9.2 Villainous Villainy Villains

General Statement: Spiderman trying to organize his scrapbook of villain-fighting because scrapbooks are fun! Given the results of many battles, rank villains based on the ratio of the battle, and then output the ratio behind each of their names. If there is a tie, rank them based on alphabetical order.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain a name then win or lose. If win, then that villain won against Spiderman, else, they lost.

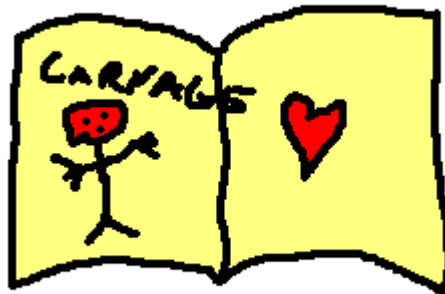
Name of Data File : pr92.txt

Output: Output their names as shown, with the ratio aligned behind them. Format each number to have 3 trailing decimal places.

Helpful Hints / Assumptions: The ratio is calculated by total win over total loss. All villains will lose at least once, so the ratio will never be a number divided by zero. Output must be aligned and the name of the villain will not be longer than 10 letters.

Sample Input:

```
22
KINGPIN WIN
KINGPIN LOSE
LIZARD WIN
LIZARD LOSE
KINGPIN WIN
LIZARD LOSE
VENOM WIN
VENOM WIN
LIZARD LOSE
VENOM WIN
VENOM LOSE
CARNAGE WIN
CARNAGE LOSE
CARNAGE LOSE
CARNAGE WIN
CARNAGE WIN
KINGPIN WIN
VENOM WIN
KINGPIN WIN
VENOM LOSE
LIZARD WIN
KINGPIN LOSE
```



Sample Output:

```
KINGPIN 2.000
VENOM 2.000
CARNAGE 1.500
LIZARD 0.667
```

Problem 9.3 Spiderman's Wonderful Wonderword

General Statement: Spiderman is reading the Daily Bugle on his commute to the local superhero shop. As he is reading the ads, he finds the daily WONDERWORD wordsearch puzzle, his lifelong nemesis. You must write a program to help Spiderman solve the puzzle and save the day...from hidden words.

Input: The first line in the data file contains a number of the data sets to follow. In each data set after that, you will be given a line with three numbers, the first number is the number of rows in the puzzle and the second number is the number of columns in the puzzle. The third number is the number of words to be found in the puzzle. The words to look for in the puzzle can be found after the puzzle.

Name of Data File : pr93.txt

Output: Output the solution to the WONDERWORD puzzle.

Helpful Hints / Assumptions: Words can overlap. Words can use letters that are already being used by a different word. Words can be found in the matrix by searching forwards, backwards, diagonally, horizontally, or vertically. A Wonderword is solved by marking all the words to be found in the wordsearch puzzle like a normal wordsearch puzzle. The solution to the puzzle is found by concatenating together, in order, all the unused letters going from the first row to the last row and the first column to the last column in each row. You can use the numbers of rows of the puzzle to determine when the words start.

Sample Input :

```
1
6 6 7
S W E D E N
A P L F R O
N P I N E E
I N N D V O
J A H O E A
J E L L O Y
SPIDEY
PINE
JELLO
YAO
LINH
SWEDEN
LOVE
```



Sample Output :

```
AFRONINJA
```

Problem 9.4 Can You Spell That?

General Statement: Doctor Octopus has outsmarted Spiderman with his lexicography skills. I guess you're going to have to save the day again. He's going to give Spiderman a series of numbers in base 8 which needs to be converted to character values. If he can spell the word with the characters given, then print the corresponding output.

Input: The first line in the data file contains the number of the data sets to follow. Each data set will contain a series of numbers and one word.

Name of Data File : pr94.txt

Output: Output "SPIDERMAN CAN SPELL X" or "SPIDERMAN CAN'T SPELL X" with X being the word depending on whether Spiderman can spell the word with the letters he has been given.

Helpful Hints / Assumptions: All the letters are capitalized and the letters are in ASCII value.

Sample Input :

```
2
115 101 122 131 121 105 104
MARY
114 127 125 112 101 115 105 120
JANE
```

Sample Output :

```
SPIDERMAN CAN SPELL MARY
SPIDERMAN CAN'T SPELL JANE
```

**We sincerely apologize
for not being clever
enough for a picture for
this problem.**

Problem 9.5 Webshaped Words...again?

General Statement: Spiderman really really likes webs. This time he wants to shoot web-shaped words onto some windows. Help him figure out what they should look like. Look at output for example.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain one word.

Name of Data File : pr95.txt

Output: Output the word in the shape of a web as shown below.

Helpful Hints / Assumptions: The input will only be one fully capitalized word. The words will have at least one character and not exceed the length of 10. Assume that the length of the word is odd.

Sample Input :

```
2
WEB
SHOOT
```

Sample Output :

```

  B
  E E
 W  W
E E E E
B  B  B
E E E E
  W  W
   E E
    B
      T
     O O
    O  O
   H    H
  S      S
 H H    H H
O  O  O  O
O    O O  O
T      T  T
O    O O  O
O  O  O  O
  H H    H H
   S      S
    H    H
     O  O
    O  O
     T
```



Yes, we used this picture again.

Problem 9.6 Spiderman Got Poisoned X_X

General Statement: Spiderman done got shot by a poison dart, and oh man does it hurt. Alas, Spiderman also has ultra cool regeneration abilities, so he'll be fine in no time. Your job is to output the condition of his skin after a certain amount of time given.

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain the number of seconds to calculate and the location where Spider-Man was hit.

Name of Data File : pr96.txt

Output: Output the patch of skin after that many seconds. A patch is always 10 x 10.

Helpful Hints / Assumptions: All the numbers are integers. # is skin that is ok. % is skin that is poisoned. \$ is skin that is healed. If a spot has been poisoned for over 2 seconds, it heals. Each second the poison spreads to another layer. The original spot where he was hit should be a ! not \$ or %. At 0 second, the dart is there but no poison is spreading.

Sample Input :

```
2
4
5 5
2
6 6
```

Sample Output :

```
#####
#% % % % % % %
#% % % % % % %
#% % $ $ $ $ $ %
#% % $ $ $ $ $ %
#% % $ $ ! $ $ %
#% % $ $ $ $ $ %
#% % $ $ $ $ $ %
#% % % % % % %
#% % % % % % %
```



```
#####
#####
#####
#####
####% % % % %
####% % % % %
####% % ! % %
####% % % % %
####% % % % %
#####
```

Problem 9.7 Spidey Sense

General Statement: A maze is a two dimensional structure with an entrance and an exit. Spidey is trapped in one of Doc Oc's mazes again, and he needs your help to get out. The only catch is: there are mines underground. Spidey knows where they are, but he can't go near them. Find him a safe path before the Doc turns him into goo!!!

Input: The first line in the data file contains a number of the data sets to follow. Each data set will contain 2 numbers indicating the number of rows followed by the number of columns. The following lines are the maze, with no spaces inbetween the elements

Name of Data File : pr97.txt

Output: Output "SPIDEY SAFE" if there is a safe path leading to an exit out of the maze. Output "SPIDEY GOO" if there is no safe path leading out of the maze.

Helpful Hints / Assumptions: All mines will not be embedded in a wall. The places they threaten are 1 position in any direction (even diagonal). The * 's are walls, . 's are paths, and @ 's are mines. The starting position for Spidey is the empty space in the top row and the exit is the empty space in the last row. Spider-Man may only move up, down, left, or right. Spiderman may not move diagonally or jump. No horseplay will be allowed.

Sample Input :

```
2
5 10
*****.***
*.....@*
****.**.*
*.....**
*****.***
3 3
*. *
*@*
*. *
```

Sample Output :

```
SPIDEY SAFE
SPIDEY GOO
```



Problem 9.8 Foe Attack!

General Statement: Peter Parker is heading to Gwen Stacy’s house, when suddenly; a group of foes attacks him! After changing into his web-slinging outfit, he jumps into combat with these deadly brigands. Use your analytical skills to see how well the antagonists are doing during this fight after each hit.

Input: The first line is the number of enemies attacking Spidey. The next line is the name of each ninja followed by the max health points of each foe. Every line after that contains the strength of Spidey’s hit, which foe he hit, and if they “BLOCKED” it or “Not”.

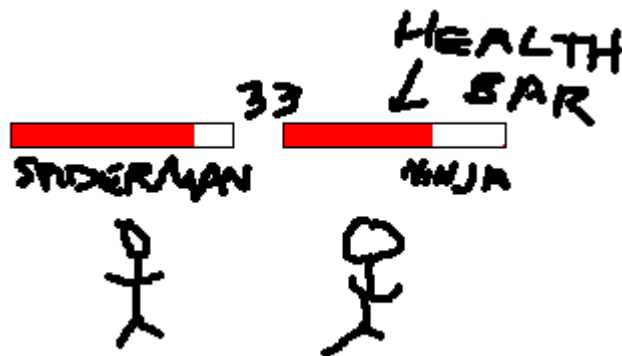
Name of Data File: pr98.txt

Output: Output the bad guy’s name and his/her health points with *’s representing each point, in alphabetical order. Then output the result of the complete battle after all the attacks were done. Align the output.

Helpful Hints / Assumptions: Names will not be longer than 20 characters. If an attack is blocked, no damage is done.

Sample Input :

```
3
Kingpin 10 Hobgoblin 6 DocOc 8
3 Hobgoblin Not
7 DocOc BLOCKED
2 DocOc Not
4 Kingpin Not
2 Kingpin BLOCKED
1 Hobgoblin Not
10 DocOc Not
```



Sample Output :

```
DocOc                    *****
Hobgoblin                *****
Kingpin                   *****

DocOc                    DEAD
Hobgoblin                **
Kingpin                   *****
```