Computer Science Competition

2001 Finals Programming Set

Judges' Answers

I. General Notes

1. Unless the exact formatting is specifically part of the problem, an answer should NOT be judged wrong for minor formatting variations such as indent/no indent, extra/no blank lines, and so forth.

2. The answer is only correct if their program successfully runs ALL of the judge's data sets for a given problem.

3. Note that the input data file for each problem begins with the examples from the problems, and then goes on to more complex cases. The testing is (by definition) not exhaustive in any sense and it is of course possible that an incorrect program will pass all of the tests provided.

II. Point Values and Names of Problems

Number	Name	Point Value
Problem 1	Flight Times	4
Problem 2	Que Pasa?	7
Problem 3	What Time Is It?	3
Problem 4	Who turned out the lights?!?!	4
Problem 5	Lost Marbles	5
Problem 6	Who's Calling?	10
Problem 7	Do I have a fever Doctor?	3
Problem 8	Airline Partners	14
Total		**50**

Program Name: flight.cpp   **Input Data File: flight.dat**

Input File
```
E 1883
W 1883
N 1100
S 1100
W 983
E 983
W 460
W 5483
S 1465
```
Output to screen
```
4.09
4.52
2.76
2.76
2.65
2.42
1.56
12.02
3.47
```

Que Pasa

Program Name: que.cpp   **Input Data File: que.dat**

Input File
```
36
bonita beautiful
pelo hair
el the
dos two
todas all
en in
de of
los the
sopapilla sopapilla
tarde afternoon
quieres want
muchachos boys
tienen have
punto point
con with
antes before
mayo may
tu you
hambre hunger
montequilla butter
a to
una a
la the
cafe brown
su your
es is
quiero want
vamos go
mi my
barco ship
nosotros we
casa house
yo i
regrese return
necesita necessary
despues after
yo quiero una casa bonita
todas de los muchachos tienen hambre
mi pelo es cafe
tu quieres montequilla con su sopapilla
es necesita a regrese a el barco antes de dos en la tarde
```
Output to screen
```
i want a house beautiful
all of the boys have hunger
my hair is brown
you want butter with your sopapilla
is necessary to return to the ship before of two in the afternoon
```

Program Name: miltime.cpp   **Input Data File: miltime.dat**

Input file
```
0
86399
873
27342
19842
67829
36000
72000
1
48120
32580
```

Output to screen
```
00:00:00
23:59:59
00:14:33
07:35:42
05:30:42
18:50:29
10:00:00
20:00:00
00:00:01
13:22:00
09:03:00
```

Program Name: light.cpp   Input Data File: light.dat

Input File
```
u d u 5 1 3 2 3 2
d d d 11 3 2 3 1 3 2 3 2 1 3 2
u u d 14 3 2 1 3 3 2 3 1 1 3 2 1 3 1
u u u 20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
d u u 1 3
u u d 6 2 1 3 2 3 1
u d d 7 1 2 3 2 2 3 1
d u d 8 1 3 2 3 2 1 1 2
d d u 19 1 3 2 3 1 2 3 1 3 2 2 1 3 2 3 1 2 3 1
```
Output to screen
```
on
on
off
on
on
off
off
on
off
```

Program Name: marbles.cpp   **Input Data File: marbles.dat**

Input File
```
LLLLLLLLLLLLLLLLLLLLL
LRLRRLLLLRRLLRLRRLRRL
LRRLLRLLRLLLLRRLRRLLR
LRRLLRLLRLLLLRRLLRLLR
RRRRRLRRLRRRLRRRRLRRR
RLLRRLRLLRLRLRLLLRRLR
RRRRRRRRRRRRRRRRRRRRL
RLRLLRLRRRLRLRLRLRLRL
RRRLLRLRRRLLLRRLRLRLR
```
Output to screen
```
$100
$1000
$1000
$500
$1000
$5000
$500
$500
$100
```

Program Name: who.cpp   **Input Data File: who.dat**

Input File
```
22
83 34 134 43 65 /Charlie Brown/
183 83 72 7 81 /Uncle Buck/
3 238 238 231 238 /M R Piggs/
193 82 8 132 224 /Sally Brown/
23 1 45 2 34 /Buck Wheat/
7 35 235 98 2 /Alfalfa Nader/
2 19 62 1 4 /Ringo Starr/
3 138 93 1 1 /Ima Router/
3 138 198 193 91 /C M Piggs/
2 19 62 1 5 /George Harrison/
98 1 83 83 82 /Stimey Rascal/
255 255 255 255 255 /Subnet Mask/
2 19 62 1 3 /Paul McCartney/
18 183 28 28 14 /Cotton Rascal/
28 28 91 232 213 /Darla Bea Cutie/
91 38 183 23 91 /Froggie Boy/
2 19 62 1 2 /John Lennon/
6 6 6 0 0 /Adolf Hitler/
12 182 181 92 255 /Dilbert Cartoon/
3 88 83 31 83 /L I Bea/
88 222 222 222 132 /Jane Seymour/
82 183 82 81 98 /Michael Landon/
28 28 91 232 213
82 183 82 81 98
23 1 45 2 34
2 19 62 1 5
183 83 72 7 81
12 182 181 92 255
3 138 198 193 91
3 138 198 193 91
3 88 83 31 83
3 238 238 231 238
```
Output to screen
```
Darla Bea Cutie
Michael Landon
Buck Wheat
George Harrison
Uncle Buck
Dilbert Cartoon
C M Piggs
C M Piggs
L I Bea
M R Piggs
```

Program Name: fever.cpp   **Input Data File: fever.dat**

Input File
```
100 48 37
50 37 59
1 1 1
500 50 12
5 50 8
100 1 100
17 37 61
10 100 99
25 25 77
9 100 10
```
Output to screen
```
77
79
1
120
Consult your child's pediatrician.
10000
28
9
77
Consult your child's pediatrician.
```

Input File
```
21
continental
delta
austrian_airways
klm
alaska
america_west
lufthansa
mesa
british_airways
twa
virgin_atlantic
air_china
southwest
swiss_air
northwest
air_france
air_egypt
air_canada
south_african
american
al_italia
20
continental america_west
continental air_china
delta klm
america_west mesa
continental alaska
america_west alaska
continental air_france
american lufthansa
british_airways lufthansa
air_egypt klm
america_west twa
continental virgin_atlantic
lufthansa al_italia
virgin_atlantic air_france
al_italia south_african
delta swiss_air
air_egypt al_italia
austrian_airways delta
delta austrian_airways
delta air_canada
10
delta america_west
continental mesa
southwest delta
twa air_france
klm al_italia
south_african lufthansa
klm twa
klm continental
klm swiss_air
air_canada south_african
```

Output to screen
```
No miles for you
PARTNERS
No miles for you
PARTNERS
PARTNERS
PARTNERS
No miles for you
No miles for you
PARTNERS
PARTNERS
```