

A+ October 2011

Computer Science Competition

Hands-On Programming Set

JUDGE PACKET

Number	Name
Problem 1	McSpeak
Problem 2	Are We There Yet?
Problem 3	Too Shy
Problem 4	Satisfied
Problem 5	Talk A Lot
Problem 6	Cool Colors
Problem 7	High And Low
Problem 8	Debt Is Dumb
Problem 9	Check Your Work
Problem 10	Note Interception
Problem 11	Personalized Plates
Problem 12	Save Like No One Else

0. DryRun

Program Name: DryRun.java

Input File: dryrun.dat

Example: Input file

```
8
history
algebra
chemistry
physics
computer science
you
me
everyone
```

Output to screen:

```
I like history.
I like algebra.
I like chemistry.
I like physics.
I like computer science.
I like you.
I like me.
I like everyone.
```

1. McSpeak

Program Name: McSpeak.java

Input File: mcspeak.dat

Example Input File

```
5
Salad
Nuggets
Chicken
Fries
Pie
```

Output to screen:

```
McSalad
McNuggets
McChicken
McFries
McPie
```

2. Are We There Yet?

Program Name: ThereYet.java

Input File: thereyet.dat

Example Input File

```
6
2 hours 20 minutes
3 hours 45 minutes
12 hours 0 minutes
2 hours 30 minutes
0 hours 59 minutes
22 hours 31 minutes
```

Output to screen:

```
2 hours and 50 minutes
4 hours and 15 minutes
12 hours and 30 minutes
3 hours and 0 minutes
1 hours and 29 minutes
23 hours and 1 minutes
```

3. Too Shy

Program Name: Shy.java

Input File: shy.dat

Example Input File

```
6
fffffff
fxxxxfxxxxf
fxffxfffxxxff
xxxxxxxxxxxxxxxx
xfffxxxxfxxfxxf
xxxxxxx
xfofxxxxfxxfxxo
xfxxxxfxxfxxo
```

Output to screen:

```
oooooooo
oxxfxfxxfooo
oxffxfxfxxxfo
xxxxxxxxxxxxxxxx
xfofxxxxfxxfxxo
xfxxxxfxxfxxo
```

4. Satisfied

Program Name: Satisfied.java

Input File: satisfied.dat

Example Input File

```
5
ppppmmmp
pppmmmpmmpmp
mmmmmmmmmmmmmmmmmmmmmm
mpmpmpmpmpmpmpmpmp
pppppppppppppppppppp
```

Output to screen:

```
Eat 2 more M&M's.
Satisfied!
Eat 20 more peanuts.
Satisfied!
Eat 17 more M&M's.
```

5. Talk A Lot

Program Name: Talk.java

Input File: talk.dat

Example Input file

```
3
3 3 4
ABC
DEF
G89
AC
DC
G9
G8
5 5 6
ABCDE
FGHIJ
KLMNO
56789
PQRST
GB
GJ
7N
TS
T9
TE
6 6 2
ABCDEF
GHIJKL
MNOPQR
STUVWX
YZ0123
456789
A9
B8
```

Output to screen:

```
G8

GB
7N
TS
T9

OK
```

6. Cool Colors

Program Name: CoolColors.java

Input File: coolcolors.dat

Example Input file

[illegible]

(Continued on next page...)

(Problem 6 contin.)

Output to screen:

```
bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb
b
b
b      bbb
b    bbb  bbb
b  bbb    bbb
b  bb      bb
b  bb      bb
b  bbb    bbb
b    bbb  bbb
b      bbb
b
b
b
b
b
b
b      bbbbbbbbbbbbbbbbbbb
bbbbbbbbbb      bbbbbbbbbbbbbbbbbbb
b
b      b
b    b  b
b  bbbb  bbbb
b    b    b
b    b  bbb  b
b    b    b
b  bbbbbbbbbbbbbbb
b      b  b      b  b  b  b
b      b  b      b  b  b  b
b      bbb      bbb  b  bbb
b
bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb
```

7. High And Low

Program Name: HighAndLow.java

Input File: highandlow.dat

Example Input file

```
4
-5 -1 0 5 10 15 20 30 30 30 30 40 40 40 40 40 45 40 35 30 25 20 15 10
76 76 76 76 78 80 90 95 95 98 99 99 99 100 105 98 88 82 80 80 78 78 72
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
100 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
```

Output to screen:

```
high = 45 low = -5
high = 105 low = 72
high = 24 low = 0
high = 100 low = -5
```

8. Debt Is Dumb

Program Name: Debt.java

Input File: debt.dat

Example Input File

```
15000.00 10000.00
15000.00 13500.00
15000.00 13500.01
3000.00 2000.00
2999.99 2850.00
1.00 0.95
1.00 0.80
```

Output to screen:

```
fleece
fleece
beater
fleece
beater
beater
fleece
```


9. Check Your Work

Program Name: Check.java

Input File: check.dat

Example Input file

```
5
 45
x32
 99
x99
 11
x11
 20
x20
 61
x19
```

(Continued on next page...)

(Problem 9 contin.)

Output to screen:

```
  45
x32
----
  90
1350
----
1440
```

```
   99
x99
----
  891
8910
----
9801
```

```
   11
x11
----
   11
  110
----
  121
```

```
   20
x20
----
    0
  400
----
  400
```

```
   61
x19
----
  549
  610
----
1159
```

10. Note Interception

Program Name: Note.java

Input File: note.dat

Example Input file

```
4 13
ABCDEFGHGIJKpq
abcdefghiPQRS
TUVWXYZjklmno
LMrstuvwxyzNO
5
AMI
AIM
AID
aip
pzt
```

Output to screen:

```
IMPOSSIBLE
POSSIBLE
INTERCEPTED
POSSIBLE
IMPOSSIBLE
```

11. Personalized Plates

Program Name: Plates.java

Input File: plates.dat

Example Input file

```
9
great driver
funny man
cutie
very handsome doctor
voldemort
frodo lives
the best teacher
ramalama alabama
best teacher
```

Output to screen:

```
grtdriver
funnyman
cutie
vryhndsm
vldemort
frdolves
thbsttch
rmlmlbma
bsttcher
```

12. Save Like No One Else

Program Name: Save.java

Input File: save.dat

Example Input file

```
6
200.00 240 10.0
200.00 360 10.0
400.00 360 10.0
400.00 276 12.0
400.00 600 12.0
400.00 1200 12.0
```

Output to screen:

```
$151,873.77
$452,097.58
$904,195.17
$583,389.03
$15,623,335.88
$6,133,462,272.22
```

Note - The solution should agree to the nearest cent on any computer, but you may manually judge if using PC² to check for close rounding.
