



University Interscholastic League

Computer Science Competition

2013 State Programming Problem Set

JUDGE DATA PRINTOUT - CONFIDENTIAL

I. Instructions

1. The attached printouts of the judge test data are provided for the reference of the contest director and programming judges.

II. Names of Problems

Number	Name
Problem 1	Absolute Differences
Problem 2	ADQL
Problem 3	Black Friday
Problem 4	Diamonds
Problem 5	Eagles
Problem 6	Friendlier
Problem 7	Mortgage
Problem 8	Savings Account
Problem 9	Scrabble Swiss Seed Tournament
Problem 10	Sort, By George
Problem 11	Triangles
Problem 12	Word Find 2

1. Absolute Differences

Program Name: Absolute.java

Input File: absolute.dat

Judges Input File

```
7
1 2 5 7
49 7 3 29
15 1 17 9
4 28 49 0
0 1 4 9
3 3 3 3
31 27 16 21
```

Judges Output to Screen

```
4 2
3 16
3 6
4 8
7 4
0 3
3 1
```

2. ADQL

Program Name: ADQL.java

Input File: adql.dat

Judges Input File

```
8 13
Name|ID#|Grade|ELA|Math|Science|SS|Notes
ROBERTS, MATIANA|212090|11|P|N|N|P|jr grad
BARROWS, GEORGE|102559|11|P|N|N|P|jr grad
BROOKS, ROGER|102661|12|N|N|N|P|2011
BROOKS, IAN|104132|11|P|N|P|P|jr grad
BUCHANAN, ALEXANDER|102453|12|N|N|N|P|jr grad
DELGADO, ABIGAIL|540250|10|P|P|N|N|2011
DODSON, NICOLE|240289|11|N|X|X|N|jr grad
ROGERS, ROBERT|742034|10|P|N|N|P|
JONES, RICHARD|770945|11|P|P|N|P|
ALLEN, ALAN|770814|12|P|N|N|P|2012
ROBERTS, ROBERT|770460|11|X|X|N|X|2012
JONES, ROGER|770152|11|P|N|N|P|
ROGERS, MARTIN|587716|10|P|N|P|P|jr grad
5
SELECT Name, ID# WHERE SS=P SORT DESC INT Grade
SELECT * SORT ASC SS SORT DESC Name
SELECT Name WHERE Notes=2012
SELECT * WHERE Grade=69 SORT DESC Name
SELECT Name WHERE ID#>700000 SORT ASC Name
```

Judges Output to Screen (continued on next page)

2. ADQL (cont.)

Judges Output to Screen

Query #1

BROOKS, ROGER 102661
BUCHANAN, ALEXANDER 102453
ALLEN, ALAN 770814
ROBERTS, MATIANA 212090
BARROWS, GEORGE 102559
BROOKS, IAN 104132
JONES, RICHARD 770945
JONES, ROGER 770152
ROGERS, ROBERT 742034
ROGERS, MARTIN 587716

Query #2

DODSON, NICOLE 240289 11 N X X N jr grad
DELGADO, ABIGAIL 540250 10 P P N N 2011
ROGERS, ROBERT 742034 10 P N N P
ROGERS, MARTIN 587716 10 P N P P jr grad
ROBERTS, MATIANA 212090 11 P N N P jr grad
JONES, ROGER 770152 11 P N N P
JONES, RICHARD 770945 11 P P N P
BUCHANAN, ALEXANDER 102453 12 N N N P jr grad
BROOKS, ROGER 102661 12 N N N P 2011
BROOKS, IAN 104132 11 P N P P jr grad
BARROWS, GEORGE 102559 11 P N N P jr grad
ALLEN, ALAN 770814 12 P N N P 2012
ROBERTS, ROBERT 770460 11 X X N X 2012

Query #3

ALLEN, ALAN
ROBERTS, ROBERT

Query #4

<EMPTY>

Query #5

ALLEN, ALAN
JONES, RICHARD
JONES, ROGER
ROBERTS, ROBERT
ROGERS, ROBERT

Notes:

- A blank line at the end of the output is optional.
- A space at the end of each line is optional.

3. Black Friday

Program Name: BlackFriday.java

Input File: blackfriday.dat

Judges Input File

```
3
354887534
6
Bob Pants Shirt TV
Steve Shirt Car Shoes TV
Stacy Pants Shirt Shoes DVD TV
Mickey Car Shoes Pants TV
James Keyboard Socks DVD TV
Tickles TV
0
0
353444535624
10
James TV Car DVD Dog
Gus TV Dog Cat DVD iPad
Bob TV Dog Car iPad
Fred Car Shoes2
Henry TV Stereo Car
Jess TV Stereo iPad
Meep Car DVD Shoes
Shannon Shoes2 iPad
Greta Shoes2 Shoes iPad
Grizelda Shoes iPad
```

Judges Output to Screen

```
Day 1: 21 tickets given out
    Car: Mickey with ticket 112
    DVD: Stacy with ticket 110
    Keyboard: James with ticket 116
    Pants: Mickey with ticket 114
    Shirt: Bob with ticket 101
    Shoes: Steve with ticket 105
    Socks: James with ticket 117
    TV: Tickles with ticket 120
Day 2: 0 tickets given out
Day 3: 31 tickets given out
    Car: Fred with ticket 134
    Cat: Gus with ticket 127
    Dog: Gus with ticket 126
    DVD: James with ticket 123
    iPad: Gus with ticket 129
    Shoes: Grizelda with ticket 150
    Shoes2: Shannon with ticket 145
    Stereo: Henry with ticket 137
    TV: James with ticket 121
```

Random numbers generated for each seen:

```
354887534: 1 0 0 2 0 0 0 5
0:
353444535624: 2 0 1 0 0 2 1 0 0
```

4. Diamonds

Program Name: Diamonds.java

Input File: diamonds.dat

Judges Input File

```
10
54322355
32445664322
345632266777
34564
3467853324566
-5433568
-64323578999887
44678764332
112456112467
45653223443222
```

Judges Output

```
PLAYER B WON
PLAYER A WON
PLAYER A WON
PLAYER B WON
PLAYER A WON
PLAYER A WON
PLAYER B WON
PLAYER B WON
PLAYER B WON
PLAYER B WON
```

Random numbers generated for each seed in the judges data:

```
54322355: 0 0 0 0 1 0 1 1 0 0 1 0 0 0
32445664322: 0 1 0 0 0 0 0 1 0 1 1 0 0 1
345632266777: 0 1 0 1 0 1 0 1 0 1 0 0 1 0
34564: 1 1 1 0 0 0 1 1 0 0 1 1 1 0
3467853324566: 0 0 1 1 0 0 0 1 1 0 0 1 1 1
-5433568: 0 0 1 1 0 0 0 1 1 0 0 0 1 0
-64323578999887: 1 0 1 0 0 1 1 0 1 0 1 0 1 1
44678764332: 1 1 0 0 1 0 0 1 0 0 0 0 1 0
112456112467: 0 0 1 0 0 1 1 0 0 0 1 1 1 0
45653223443222: 0 1 1 0 0 1 1 0 1 0 1 1 1 0
```

5. Eagles

Program Name: Eagles.java

Input File: eagles.dat

Judges Input File

```
4
9 10
E...E..B.M
...B....ME
BBBCC.BBMM
EBBCCFFBMM
MMMM..B..M
MMM.B..FF.
MMMMFFFM
CCCCM..MMM
BECMM...FJ
..CMMFF.B.
2 4
BBB.BBBB.B
..MJ...CCC
MMMM...BFF
MMMMC.BBFF
E.MM.BB..F
C...MBFCE.
..CCFEEFMM
BE..B..CCC
FFBFFFFBB.
B.CC.FB...
1 1
J....BBBBB
...MMMMMM
CCCCCFB
..FFFB
CCCCCB
BBBBB...FF
EEEEEEB
B.B.B.B.B.
.B.B.B.B.B
CCBCCFF..
4 2
B.....E.MB
.B.....BM
FFB....BMM
.J.B..BM..
FF..BB...E
FF..BB....
MMMBE.BMM
MMB....BMM
.BCCCCCB.
BBBBBE
```

Judges Output to Screen

```
8
6
6
3
```

6. Friendlier

Program Name: Friendlier.java

Input File: friendlier.dat

Judges Input File

Bob: :)
Brick: I love lamp!
Ron: I'm Ron Burgundy?
Emanuel: Yay for CS!
Charlotte: Emanuel's problems are hard.
Twila: Colon : YaY!

Judges Output to Screen

Bob: 0x67 0xFF
Brick: 0x3A 0x79 0x33 0x53 0x4B 0x83 0x19 0x33 0x53 0x3B 0x5B 0xB1
Ron: 0xC8 0x7B 0x09 0x5B 0x30 0xA1 0x49 0x43 0x30 0x21 0x99 0xA1 0x09 0x99
0x41 0x11 0xFB
Emanuel: 0x30 0xF1 0x31 0xF3 0x39 0x09 0x41 0xAB 0x38 0x20 0xA3
Charlotte: 0x4D 0x14 0x54 0x34 0x4C 0x94 0x14 0x5E 0x04 0xA6 0x3C 0xBC 0xAC
0x44 0x2C 0x5C 0x14 0x54 0xA6 0x3C 0x34 0xAC 0x16 0x3C 0x7C 0x34 0xAC 0x1E
Twila: 0x2C 0x3D 0x5D 0x45 0x5D 0x57 0x27 0xF7 0x24 0xED 0x2C 0xEF

Notes to Judges:

- The encrypted messages for Ron and Charlotte extend across two lines in the printed version above but constitute only one line in the actual output.
- A space at the end of each line is optional.

7. Mortgage

Program Name: Mortgage.java

Input File: mortgage.dat

Judges Input File

```
220230 20000 0.06 360
300000 15000 0.075 200
255002.12 16000.66 0.055 200
150000.99 500.00 0.066 360
9999999 999 0.09 99
```

Judges Output to Screen

```
$1201
$2501
$1828
$955
$143456
```

8. Savings Account

Program Name: Savings.java

Input File: savings.dat

Judges Input File

15 37 74 25 364 193 87 29 177

Judges Output to Screen

15 \$55
37 \$213
74 \$602
25 \$119
364 \$6552
193 \$2530
87 \$767
29 \$148
177 \$2223

9. Scrabble Swiss Seed Tournament

Program Name: Scrabble.java

Input File: scrabble.dat

Judges Input File

```
3
10
Angel 245 324 278
Bonnie 345 234 430
Caleb 230 185 221
Don 245 172 213
Evie 192 97 220
Frank 215 200 221
George 345 286 275
Henry 420 235 249
Iris 345 289 276
Jack 128 158 387
8
Randy 235 254 268
Abel 169 278 154
Max 458 259 348
Robin 135 164 134
Yang 154 126 359
Peggy 194 268 253
Ruby 144 155 134
Andy 155 144 134
12
Michelle 345 253 234
Philip 435 387 325
Maria 345 452 504
Beth 254 453 298
John 34 88 376
Ron 422 345 243
Alex 345 345 345
Angelo 367 318 217
Saul 452 345 235
Jessica 345 345 345
Taylor 501 254 452
Cole 324 235 453
```

Judges Output to Screen

```
TEST CASE #1 ROUND 2:
Henry 420
Iris 345
George 345
Bonnie 345
Don 245
Angel 245
Caleb 230
Frank 215
Evie 192
Jack 128

TEST CASE #1 ROUND 3:
Henry 655
Bonnie 579
Iris 634
George 631
Angel 569
Frank 415
Don 417
Evie 289
Caleb 415
Jack 286

TEST CASE #1 ROUND 4:
Bonnie 1009
Iris 910
George 906
Angel 847
Henry 904
Jack 673
Caleb 636
Evie 509
Frank 636
Don 630
```

Judges Output to Screen continued on next page.

9. Scrabble Swiss Seed Tournament (cont.)

Judges Output to Screen (cont.)

TEST CASE #2 ROUND 2:

Max 458
Randy 235
Peggy 194
Abel 169
Andy 155
Yang 154
Ruby 144
Robin 135

TEST CASE #2 ROUND 3:

Max 717
Peggy 462
Randy 489
Robin 299
Abel 447
Andy 299
Ruby 299
Yang 280

TEST CASE #2 ROUND 4:

Max 1065
Yang 639
Randy 757
Peggy 715
Abel 601
Ruby 433
Andy 433
Robin 433

**Judges Output to Screen continued on
next column.**

Judges Output to Screen (cont.)

TEST CASE #3 ROUND 2:

Taylor 501
Saul 452
Philip 435
Ron 422
Angelo 367
Jessica 345
Alex 345
Maria 345
Michelle 345
Cole 324
Beth 254
John 34

TEST CASE #3 ROUND 3:

Philip 822
Maria 797
Saul 797
Ron 767
Taylor 755
Beth 707
Alex 690
Jessica 690
Angelo 685
Michelle 598
Cole 559
John 122

TEST CASE #3 ROUND 4:

Maria 1301
Taylor 1207
Philip 1147
Jessica 1035
Alex 1035
Saul 1032
Cole 1012
Ron 1010
Beth 1005
Angelo 902
Michelle 832
John 498

Note: A blank line at the end of the output is optional.

10. Sort, by George

Program Name: Sort.java

Input File: sort.dat

Judges Input File

```
3
POIUYTREWQASDFGHJKLMNBVCXZ
11
COMPUTER
SCIENCE
FUN
IS
SCIENTIFICALLY
FUNDAMENTAL
UIL
STATE
IS
CHALLENGING
AND
QAZWSXEDCRFVTGBYHNUJMIKOLP
16
ROGER
MERRY
LOGICAL
RICHLY
EGGS
ME
LOGS
MICHIGAN
EGGPLANT
PASTA
EGG
RICHNESS
PAST
RICH
LOG
MERRILY
GFDSA HJKLPOIUYQWERTVCXZBNM
8
READY
COEXIST
READ
COED
LIBERTY
I
LIBERAL
ITERATE
```

Judges Output to Screen

```
IS
IS
UIL
AND
STATE
SCIENTIFICALLY
SCIENCE
FUN
FUNDAMENTAL
COMPUTER
CHALLENGING

EGG
EGGS
EGGPLANT
RICH
RICHNESS
RICHLY
ROGER
ME
MERRY
MERRILY
MICHIGAN
LOG
LOGS
LOGICAL
PAST
PASTA

LIBERAL
LIBERTY
I
ITERATE
READ
READY
COED
COEXIST
```

Note: A blank line at the end of the output is optional.

11. Triangles

Program Name: Triangles.java

Input File: triangles.dat

Judges Input File

```
8
3 3 3 3 3
4 6 8 3 7
6 8 10 13 2
12 15 9 17 4
1 5 9 23 35
18 5 14 6 20
8 4 7 9 12
9 10 21 18 7
```

Judges Output to Screen

```
10
8
4
7
0
5
8
5
```

12. Word Find 2

Program Name: WordFind2.java

Input File: wordfind2.dat

Judges Input File

```
4
7 7
RECSQSE
CRICOSC
EOPPIDT
NIMUTET
CVRETCN
ERFCVGE
MLOSECD
COMPUTER SCIENCE
6 8
BUNLHRTV
BLITOORD
OCSUSUNT
NTACKTOR
CESUDTDN
KTINSLIL
AUSTIN LUBBOCK HOUSTON
5 8
NSUISNUF
SNUIFNIA
IDUSLUNL
SILDDNLU
ESSIUISA
UIL IS FUN
6 6
CICASC
AGPEGA
IISICA
AGAPSF
CSCIGL
FLYLYS
PIGS CAN FLY
```

Judges Output to Screen

```
COMPUTER 4
SCIENCE 1
AUSTIN 4
LUBBOCK 0
HOUSTON 7
UIL 8
IS 10
FUN 5
PIGS 8
CAN 0
FLY 2
```