



University Interscholastic League

# Computer Science Competition

## 2013 Regional 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. Additional copies may be made if needed for this purpose.
2. Printouts must remain CONFIDENTIAL. At the discretion of the contest director, additional copies may also be made and returned to schools when other confidential contest material is returned **after** the meet.

#### II. Names of Problems

Number	Name
Problem 1	Best Day of Sales
Problem 2	Bit Packing
Problem 3	Bouncing Dice
Problem 4	DQL
Problem 5	Florist Shop Displays
Problem 6	Golf Qualifying
Problem 7	Maze 3D
Problem 8	Moose
Problem 9	Multiple Choice
Problem 10	Ping Pong Tournament
Problem 11	Thirteen Jewels
Problem 12	Waitlist

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# 1. Best Day of Sales

Program Name: BestDay.java

Input File: bestday.dat

## Judges Input File

9

```
1300 1500 1200 1600 1800 900 1400
1200 1400 1500 1600 1100 1450 1475
1745 2534 2000 2100 2400 1975 1823
2231 1992 2000 2345 2435 1982 2500
154 678 567 654 345 1085 1045
987 876 678 679 789 567 988
2566 2766 2544 3456 654 3012 1678
5678 4567 5234 5634 5123 5647 4564
7689 6785 7758 5674 5634 5723 6234
```

## Judges Output to Screen

```
THURSDAY
WEDNESDAY
MONDAY
SATURDAY
FRIDAY
SATURDAY
WEDNESDAY
SUNDAY
TUESDAY
```

---

## 2. Bit Packing

Program Name: BitPacking.java

Input File: bitpack.dat

### Judges Input File

```
6
536839
6672394
3151077
4136961
5462968
2610151
```

### Judges Output to Screen

```
Type: B | Sub Type: C | Inventory: 263
Type: Y | Sub Type: c | Inventory: 10
Type: L | Sub Type: A | Inventory: 1253
Type: O | Sub Type: x | Inventory: 1
Type: T | Sub Type: 1 | Inventory: 3000
Type: I | Sub Type: 9 | Inventory: 999
```

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## 3. Bouncing Dice

Program Name: Bouncing.java

Input File: bouncing.dat

### Judges Input File

```
10
12354643223452
76654213645
5644337533
545677556
8543567843954
34566443223
765435799857643
6542234567689
643223456789040873
422234567899339986
```

### Judges Output to Screen

```
WHITE
RED
WHITE
BLUE
WHITE
BLUE
RED
RED
BLUE
WHITE
```

### Random numbers generated for each seed in the judges data:

Line 1 is the number of times the die will change direction.

Line 2 are alternating direction and number of times the die will roll.

```
12354643223452: numTurns 10
3 1 4 3 3 5 4 2 4 1 1 5 2 5 3 1 1 2 3 5
76654213645: numTurns 6
2 4 1 4 4 5 3 4 2 5 4 2
5644337533: numTurns 2
1 4 2 2
545677556: numTurns 5
1 3 1 3 3 2 4 4 4 3
8543567843954: numTurns 1
3 2
34566443223: numTurns 10
3 2 1 1 3 3 3 3 4 2 2 4 3 1 2 4 3 5 4 1
765435799857643: numTurns 8
3 2 4 1 4 5 2 4 1 3 4 3 1 3 4 1
6542234567689: numTurns 8
4 4 3 4 3 2 1 5 4 2 4 4 1 5 1 1
643223456789040873: numTurns 3
3 3 2 1 2 1
422234567899339986: numTurns 8
2 4 3 3 4 4 1 4 3 4 3 5 1 5 1 5
```

---

## 4. DQL

Program Name: DQL.java

Input File: dql.dat

### Judges Input File

```
5 6
ID Name Sex Age Grade
1234 Bob M 18 91
1344 Jan F 17 79
1470 Gus M 18 80
1784 Fern F 18 99
5434 Kat F 17 70
1410 Rex M 17 61
5
SELECT Name, Age WHERE Sex=F
SELECT Name WHERE Grade>90
SELECT *
SELECT * WHERE Grade=69
SELECT ID, Grade WHERE Grade<80
```

### Judges Output to Screen

```
Query #1
Jan 17
Fern 18
Kat 17
```

```
Query #2
Bob
Fern
```

```
Query #3
1234 Bob M 18 91
1344 Jan F 17 79
1470 Gus M 18 80
1784 Fern F 18 99
5434 Kat F 17 70
1410 Rex M 17 61
```

```
Query #4
NONE
```

```
Query #5
1344 79
5434 70
1410 61
```

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

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## 5. Florist Shop Displays

Program Name: Florist.java

Input File: florist.dat

### Judges Input File

```
12 14 5 6 7 12 14 3 12 8
8
5 7 9 12 3 2 12 14 7 8 10
12 4 6 7 15 13 13 15 12 10 7 5 8 7
5 7 10 7 16 7 8 14 15 9 17
1 5 13 14 3 3 12 4 10 6 6 8 8 9 11 13
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
12 7 15 14 9 21 18 15
12 15 17 19 14 2 3 5 1 7 7 2
4 15 6 13 7 8 14 8 13 13
```

### Judges Output to Screen

```
10
9
8
10
7
4
9
7
```

---

## 6. Golf Qualifying

Program Name: GolfQ.java

Input File: golfq.dat

### Judges Input File

26

JONES, J 210  
SMITH, S 212  
GEORGE, S 220  
LILLARD, E 218  
GREGORY, E 213  
ROGERS, R 215  
RICHARDS, O 222  
LASITER, B 212  
CHRISTIAN, N 219  
LOWERY, A 221  
RANDALL, R 227  
THOMAS, T 221  
TRAVIS, R 220  
LESTER, P 220  
BRIDGES, M 218  
WALSH, J 221  
ATLAS, C 214  
WILKINSON, C 220  
ROBERTSON, Q 221  
SINZ, R 221  
MARTINEZ, T 220  
COTTON, N 212  
GILLIAM, R 225  
GILBERT, J 222  
HENRY, P 221  
KINDLE, K 218

### Judges Output to Screen

JONES, J  
SMITH, S  
GEORGE, S  
LILLARD, E  
GREGORY, E  
ROGERS, R  
LASITER, B  
CHRISTIAN, N  
TRAVIS, R  
LESTER, P  
BRIDGES, M  
ATLAS, C  
WILKINSON, C  
MARTINEZ, T  
COTTON, N  
KINDLE, K

**Input File: maze3d.dat**

## Judges Output to Screen

9 MOVES  
11 MOVES  
7 MOVES  
STUCK  
8 MOVES



---

## 8. Moose

Program Name: Moose.java

Input File: moose.dat

### Judges Input File

```
4
M...E...MMM
...B....MM
EMMCC.BBMM
EB.MMFFBMM
MMMM..B..M
MMM.B..FMM
MMMMFFBMM
CC.BM..MMM
BECMM...FJ
..CMMFF.B.
MMMBBMMM.B
..MMMM.CCC
MMMM..BFF
MMMMC...FF
E.MM.BB..F
C...C.MMM.
..CCFMMMMM
BE..MM.CCC
MMMMMMFF.B.
B.MMMMMM..
B....BBBBB
...MMMMMMM
MMCCCFBBB
MMFFFBBE..
MMCCCBMM
BBBBB..MMM
MMMEEEEBBB
MMMMB.B.B.
MMMM.B.B.B
CCBBMMFF..
MMMMME.MB
MMBEMM..BM
MMCCCM.BMM
MMMMMMEMMM
FF..BEMMMM
FF..BB....
MMMBE.BMM
MMB...BMM
MBCCCCCBM
MMMMMMMMMM
```

### Judges Output to Screen

```
18
21
12
22
```

---

## 9. Multiple Choice

Program Name: MultChoice.java

Input File: multchoice.dat

### Judges Input File

5  
A. I  
B. II, IV, and VI  
C. III  
D. I, III, and V  
E. III and V  
A. I  
B. II  
C. III  
D. I and II  
E. I, II, and III  
A. I  
B. II  
C. III  
D. IV  
E. V  
A. I and IV  
B. I and V  
C. II, III, and IV  
D. II, III, and V  
E. II, IV, and V  
A. I and II  
B. I, II, and III  
C. I, IV, and V  
D. IV  
E. I, II, III, IV, and V

### Judges Output to Screen

Question 1  
A. I only  
B. II, IV, and VI  
C. III only  
D. I, III, and V  
E. III and V only  
  
Question 2  
A. I only  
B. II only  
C. III only  
D. I and II only  
E. I, II, and III  
  
Question 3  
A. I  
B. II  
C. III  
D. IV  
E. V  
  
Question 4  
A. I and IV  
B. I and V  
C. II, III, and IV  
D. II, III, and V  
E. II, IV, and V  
  
Question 5  
A. I and II only  
B. I, II, and III only  
C. I, IV, and V only  
D. IV only  
E. I, II, III, IV, and V

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

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## 10. Ping Pong Tournament

Program Name: PingPong.java

Input File: pingpong.dat

### Judges Input File

```
4
8
Randy W W W
Abel L W L
Max L L L
Robin W L W
Yang W L W
Peggy L L W
Ruby L W L
Andy W W L
10
Angel L W L
Bonnie W L L
Caleb W W L
Don L L W
Evie W W W
Frank L W W
George W L W
Henry L W L
Iris L L L
Jack W L W
12
Michelle W W W
Philip L L L
Maria L W L
Beth W L W
John W W L
Ron L L W
Alex W L L
Angelo L W W
Saul W W W
Jessica L W L
Taylor L L L
Cole W L W
10
Angel W W L
Ben L W W
Charles L W L
Dan W L W
Edgar L L W
Frank W W W
George W L L
Harley L L W
Jim L W L
Ken W L L
```

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## 10. Ping Pong Tournament (cont.)

### Judges Output to Screen

TEST CASE #1 ROUND 2:

Randy  
Robin  
Yang  
Andy  
Abel  
Max  
Peggy  
Ruby

TEST CASE #1 ROUND 3:

Randy  
Andy  
Abel  
Robin  
Yang  
Ruby  
Max  
Peggy

TEST CASE #1 ROUND 4:

Randy  
Yang  
Robin  
Andy  
Abel  
Peggy  
Ruby  
Max

### Judges Output to Screen (cont.)

TEST CASE #2 ROUND 2:

Bonnie  
Caleb  
Evie  
George  
Jack  
Angel  
Don  
Frank  
Henry  
Iris

TEST CASE #2 ROUND 3:

Caleb  
Evie  
Angel  
Frank  
Bonnie  
George  
Henry  
Jack  
Don  
Iris

TEST CASE #2 ROUND 4:

Evie  
Jack  
Caleb  
Frank  
George  
Angel  
Henry  
Don  
Bonnie  
Iris

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

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## 10. Ping Pong Tournament (cont.)

### Judges Output to Screen (cont.)

TEST CASE #3 ROUND 2:

Michelle  
Beth  
John  
Alex  
Saul  
Cole  
Philip  
Maria  
Ron  
Angelo  
Jessica  
Taylor

TEST CASE #3 ROUND 3:

Michelle  
John  
Saul  
Maria  
Beth  
Alex  
Angelo  
Jessica  
Cole  
Philip  
Ron  
Taylor

TEST CASE #3 ROUND 4:

Michelle  
Saul  
Beth  
John  
Angelo  
Cole  
Maria  
Ron  
Alex  
Jessica  
Philip  
Taylor

### Judges Output to Screen (cont.)

TEST CASE #4 ROUND 2:

Angel  
Dan  
Frank  
George  
Ken  
Ben  
Charles  
Edgar  
Harley  
Jim

TEST CASE #4 ROUND 3:

Angel  
Frank  
Ben  
Charles  
Dan  
George  
Jim  
Edgar  
Ken  
Harley

TEST CASE #4 ROUND 4:

Frank  
Ben  
Angel  
Charles  
Dan  
Harley  
George  
Jim  
Edgar  
Ken

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

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## 11. Thirteen Jewels

Program Name: Thirteen.java

Input File: thirteen.dat

### Judges Input File

```
5
S.#####
..*.....*
.#####..*
####*..*..#
##*.....##
..*#####
####*.....*
####*..*##.
##*.....*
..*.....*E
S...#####.
##*#####.
#####.##
####*...###
####*..*..##
####*.....
#.*...##*
.#...*..##
#.*...##
##.#####*E
S.....
#.*.##*..*
#####*..*
.....*..#
.*.#####*
*#####*..*
.#####.###
*###*####.
.###*#####.
*.*...####E
S#####
*#.....#
*#.....#
*#.....#
*#.....#
*#.....#
*#.....#
*#####
**.*.*.*E
S#####
*#.....#
*#.....#
*#.....#
*#.....#
*#.....#
*#.....#
*#####*#
*.*.....*E
```

### Judges Output to Screen

```
40
36
48
18
22
```

**Note to Judges:** The data sets have been designed so execution time will be less than 15 seconds – even on a slow machine. Judges should allow 2 minutes.

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## 12. Waitlist

Program Name: Waitlist.java

Input File: waitlist.dat

### Judges Input File

```
11
Accounting 35 40
ComputerScience 150 110
ReadyWriting 25 28
Spelling 50 57
Mathematics 300 273
Science 300 322
Editorial 25 33
Headline 25 20
Calculator 225 245
NumberSense 250 273
ComputerApplications 40 18
```

### Judges Output to Screen

```
Accounting 5
ComputerScience 0
ReadyWriting 3
Spelling 7
Mathematics 0
Science 22
Editorial 8
Headline 0
Calculator 20
NumberSense 23
ComputerApplications 0
```