



UIL Computer Science Competition

Invitational B 2022

JUDGES PACKET - 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. This packet must remain CONFIDENTIAL. Additional copies may be made and returned to schools when other confidential contest material is returned.

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Problem #1
60 Points

1. Anastasia

Program Name: Anastasia.java

Input File: None

Test Input File: None

Test Output To Screen:

The square root of 400 is 20.
The square root of 361 is 19.
The square root of 324 is 18.
The square root of 289 is 17.
The square root of 256 is 16.
The square root of 225 is 15.
The square root of 196 is 14.
The square root of 169 is 13.
The square root of 144 is 12.
The square root of 121 is 11.
The square root of 100 is 10.
The square root of 81 is 9.
The square root of 64 is 8.
The square root of 49 is 7.
The square root of 36 is 6.
The square root of 25 is 5.
The square root of 16 is 4.
The square root of 9 is 3.
The square root of 4 is 2.
The square root of 1 is 1.
The square root of 0 is 0.

Problem #2
60 Points

2. Carolyn

Program Name: Carolyn.java

Input File: carolyn.dat

Test Input File:

8
AD
HH
PL
JS
DA
XZ
JE
ZZ

Test Output to Screen:

A
BB
CCC
DDDD
H
P
OO
NNN
MMMM
LLLLL
J
KK
LLL
MMMM
NNNNN
OOOOOO
PPPPPPP
QQQQQQQQ
RRRRRRRRR
SSSSSSSSSS
D
CC
BBB
AAAA
X
YY
ZZZ
J
II
HHH
GGGG
FFFFF
EEEEEE
Z

Problem #3
60 Points

3. Diana

Program Name: Diana.java

Input File: diana.dat

Test Input File:

```
-5359.76 32044.22 7882.16 45156.50 -41396.57 5497.94
-37525.56 9046.11 2285.20 -45759.01 13547.75 -3877.51
48809.73 4712.09 -28657.86 4186.49 26991.17 -33937.56
35847.36 -19489.78 -46732.41 44807.97 2227.51 28611.97
17536.95 -11874.42 34879.39 20115.12 -25782.91 14412.74
-25174.99 12065.29 38632.39 -24738.82 10070.50 5461.94
2826.41 31030.41 -49118.44 -8117.92 -663.13 -10310.14
-17026.80 -26932.50 36708.01 -14727.16 -4213.24 -17628.74
-37314.59 -19082.11 44699.76 9255.24 47356.71 42327.08
-31513.93 -42086.16 7528.37 -37180.21 42854.73 -15216.50
24181.62 -24274.45 -38710.90 7703.94 50000.00 -21467.54
28900.79 -4858.60 -10411.14 -2603.97 -45750.41 29606.14
4784.18 -14019.69 10035.77 27520.86 -45943.02 -5479.79
42028.62 -43234.30 38780.88 44705.43 46298.27 -50000.00
-44582.91 -24266.34 12648.62 22019.14 46132.31 32786.26
14886.52 -40684.39 45874.54 -27702.81 -34544.17 10209.59
-14560.45 -32415.26 -48275.62 -44047.97 -9204.15 -42843.38
19757.83 38453.86 14973.04 -48569.43 -19805.01 9011.98
959.76 12741.75 -3900.80 -6224.58 12693.36 -31677.13
-5032.37 -41657.39 40295.01 17074.90 -6231.20 -15739.75
```

Test Output To Screen:

```
89169.09
11226.46
50154.42
78922.17
24879.24
33233.24
51286.87
58940.10
81169.55
88115.78
78009.88
65315.18
42151.97
126116.18
98981.45
55888.66
37918.05
89990.25
28690.44
69883.05
```

Problem #4
60 Points

4. Ewa

Program Name: Ewa.java

Input File: ewa.dat

Test Input File:

20	BRING 3.12 4.10	EAT 38.85
1	EAT 3.35	EAT 7.30
BRING 4.58 3.92	EAT 62.02	EAT 122.77
2	EAT 29.56	EAT 19.86
BRING 4.60 4.81	BRING 0.64 2.81	BRING 0.21 3.51
BRING 1.69 3.59	10	EAT 17.22
8	BRING 3.37 3.04	EAT 0.12
BRING 3.13 2.78	BRING 2.52 1.10	BRING 4.10 0.38
EAT 21.99	BRING 3.77 1.81	2
BRING 2.82 4.93	EAT 204.61	BRING 1.53 4.60
BRING 3.22 2.70	EAT 4.12	BRING 2.41 2.06
EAT 28.66	BRING 3.51 0.95	4
EAT 95.37	BRING 2.06 1.68	BRING 3.96 2.30
EAT 124.94	BRING 3.80 2.70	EAT 42.60
EAT 16.54	BRING 1.37 3.77	BRING 2.71 1.69
5	EAT 205.71	EAT 2.67
BRING 2.66 0.05	6	7
EAT 1.03	BRING 4.59 1.53	BRING 1.93 2.68
BRING 2.14 2.80	EAT 37.88	EAT 21.25
BRING 0.89 0.53	EAT 13.39	EAT 9.23
BRING 2.83 1.64	EAT 46.59	EAT 0.35
2	BRING 2.91 1.95	EAT 0.27
BRING 2.77 0.94	EAT 29.45	EAT 0.14
BRING 4.01 0.36	10	BRING 3.24 0.66
7	BRING 0.23 4.64	6
BRING 2.39 3.48	BRING 3.49 4.03	BRING 1.24 2.38
EAT 39.04	BRING 4.32 3.13	BRING 0.11 1.03
BRING 2.58 4.26	BRING 1.30 4.99	EAT 0.79
BRING 0.97 0.32	BRING 4.16 4.82	BRING 0.27 3.63
EAT 61.37	BRING 0.26 3.09	BRING 1.23 2.72
BRING 4.50 0.76	BRING 0.96 0.79	BRING 4.61 0.91
EAT 90.38	BRING 4.13 3.11	
2	BRING 4.41 4.60	
BRING 1.47 3.36	BRING 2.44 0.36	
BRING 2.36 3.03	2	
6	BRING 0.66 2.89	
BRING 3.87 4.01	BRING 2.32 4.65	
BRING 2.59 4.62	7	
EAT 98.09	BRING 2.32 2.75	
BRING 0.90 1.14	BRING 3.16 0.91	
BRING 0.94 3.06	EAT 2.25	
EAT 152.10	BRING 1.08 2.22	
10	EAT 18.89	
BRING 1.52 0.95	BRING 3.43 4.32	
EAT 3.42	EAT 157.49	
BRING 1.09 2.12	1	
BRING 3.06 3.21	BRING 0.91 3.78	
EAT 89.47	9	
	BRING 3.94 4.23	

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Test Output To Screen:

258.33	3.48	75.05
-----	11.39	72.80
319.75	105.82	80.93
351.96	16.35	62.04
-----	141.73	221.71
85.56	138.38	64.22
63.57	76.36	-----
186.74	46.80	9.83
274.69	50.42	-----
246.03	-----	206.29
150.66	108.46	167.44
25.72	130.41	160.14
9.18	211.23	37.37
-----	6.62	17.51
1.11	2.50	18.00
0.08	39.27	0.78
40.37	61.66	0.66
41.68	184.15	20.73
82.95	206.38	-----
-----	0.67	33.83
22.66	-----	71.42
40.84	101.27	-----
-----	63.39	113.31
62.45	50.00	70.71
23.41	3.41	109.70
112.49	55.28	107.03
113.44	25.83	-----
52.07	-----	31.36
100.42	0.77	10.11
10.04	154.98	0.88
-----	338.49	0.53
22.81	364.98	0.26
75.83	627.03	0.12
-----	627.69	21.89
188.68	629.98	-----
286.04	796.63	11.50
187.95	1077.68	11.54
190.85	1084.41	10.75
199.34	-----	11.58
47.24	3.95	24.51
-----	82.58	85.26
6.90	-----	-----
	46.50	

Problem #5
60 Points

5. Harry

Program Name: Harry.java

Input File: harry.dat

Test input file:

```
8
NILBBIAKEABEGGBS BANANA
GRUNFORIRESTRPUN PIG
SUPERSTAR GOLD
ZBOEYKGGIYNLDZ ZOOLOGY
BTHOOEERAYLE BEETLE
TEXAS TEXAS
ZHIZISZSNZOZOPZY Z
APPLE ABCDEFGHIJKLMNOPQRSTUVWXYZ
```

Test output to screen:

```
ILIKEEGGS
RUNFORRESTRUN
SUPERSTAR
BEKIND
HOORAY
ALL LETTERS ARE GONE
HISNOOPY
L
```

Problem #6

60 Points

6. Ishita

Program Name: Ishita.java

Input File: ishita.dat

Test Input File:

```

10      () (()) ()
        ()) (())
          () () (((() ()))) (() )
            () () () () () () () () () () () () ()
              () () () () ((())) ())) () () () (()) () ()
                (((((((((( ((((((())) )))) )))) )))) ))
                  (((((((()))) )) (((() ( ( ( ( ( ))) ))))
                    ()
                      ) (
                        ())
```

Test Output To Screen:

3
0
7
16383
0
0
0
0
0
0

Problem #7
60 Points

7. Manoj

Program Name: Manoj.java

Input File: manoj.dat

Test input file:

```
10
0 50 20 M C
100 190 145 M F
32 212 171 F M
30 70 77 F M
0 10 80 C M
10 20 95 C F
0 50 5 C F
0 50 -40 F C
0 50 -10 M C
200 290 50 F M
```

Test output to screen:

```
20 degrees M = 40 degrees C
145 degrees M = 122 degrees F
171 degrees F = 171 degrees M
77 degrees F = 40 degrees M
80 degrees C = 8 degrees M
95 degrees C = 203 degrees F
5 degrees C = 41 degrees F
-40 degrees F = -40 degrees C
-10 degrees M = -20 degrees C
50 degrees F = 209 degrees M
```

Problem #8
60 Points

8. Micha

Program Name: Micha.java

Input File: micha.dat

Test Input File:

```
15
ing
tion
ern
ive
ill
est
ete
uter
nity
nal
ical
ther
ence
ance
age
Micha has noticed that some letter sequences like ing and tion among many
other combinations seem to appear frequently in commonly used words Such
patterns can be used as clues for deciphering encrypted messages However
trying to find the most common patterns can be a real challenge as she
visually scans sentences She would like a program that can flawlessly
complete the task and help her gather data
Micha will provide the text to be scanned along with a list of suspected common letter
sequences She would like to get a report showing the number of times specific sequences
were found in the text To make your task easier all punctuation marks including hyphens
and special characters have been eliminated and replaced by spaces if needed There could
be numbers in the text
In philosophical terms the UIL Computer Science Contest is a competition that challenges
students to apply programming concepts and skills as well as their knowledge of the designated
programming language The contest is also an opportunity for students to expand their knowledge
of computer science beyond the classroom and to foster their interest in the field
The contest was established in the 1990 91 school year with several goals in mind Among them were
the goals of further strengthening the UIL math and science program with a new technological
component and to support Texas public schools in meeting the growing demand for computer
education
The UIL contest was modeled in many ways on the College Boards Advanced Placement curriculum for
computer science and the foundations of the contest can still be found there For the first
eight years of its existence Pascal was the designated programming language for the contest
Beginning with the 1998 99 school year the AP curriculum moved to c plus plus and UIL Computer Science
did likewise Finally beginning in the 2003 04 school year the contest moved from c plus plus to Java
This keeps UIL Computer Science in line not only with the AP curriculum but also with trends in
collegiate computer science curricula and the professional programming community
Java is the designated programming language for UIL Computer Science
The above 16 lines were copied from UIL Academics and Computer Science Web pages
```

Test Output To Screen:

```
"ing" 15
"tion" 6
"ern" 2
"ive" 0
"ill" 3
"est" 9
"ete" 1
"uter" 9
"nity" 2
"nal" 2
"ical" 2
"ther" 5
"ence" 14
"ance" 1
"age" 5
```

Problem #9
60 Points

9. Pamela

Program Name: Pamela.java

Input File: pamela.dat

Test Input File:

```

7
5 4
160      918      572      587
817      155      703      903
471      468      962      311
890      575      532      128
266      259      442      167
7 9
286      523      961      240      866      234      252      688      437
922      182      702      925      651      613      820      477      580
10       516      533      639      239      51       538      300      268
620      473      663      705      10       210      85       597      613
459      608      828      465      669      327      932      174      950
984      413      465      788      958      760      817      402      531
571      511      757      62       581      444      650      271      65
2 2
814      950
678      74
3 3
178      839      937
593      918      43
27       989      126
9 2
487      157
73       522
774      717
297      781
17       968
505      305
298      86
862      363
879      131
2 9
511      497      871      383      240      15       83       997      264
891      9       936      75       346      637      431      846      247
10 10
166      362      637      809      518      897      445      495      388      79
492      996      354      277      904      90       458      470      692      783
489      279      744      690      415      314      965      275      547      863
662      730      625      235      149      567      231      555      171      277
2       239      859      270      781      998      340      29       208      587
311      349      792      732      490      927      102      494      838      1000
579      392      62       995      657      483      0       586      950      836
477      870      334      574      996      139      344      378      366      359
119      672      895      75       721      669      450      199      176      90
484      26       810      338      248      105      312      499      811      925
    
```

Output on next page...

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Pamela - Test Output To Screen:

Case: 1

Row Sums:	2237	2578	2212	2125	1134
Row Mins:	160	155	311	128	167
Col Sums:	2604	2375	3211	2096	
Col Maxs:	890	918	962	903	
Min Mins:	128				
Max Maxs:	962				

=====

Case: 2

Row Sums:	4487	5872	3094	3976	5412	6118	3912		
Row Mins:	234	182	10	10	174	402	62		
Col Sums:	3852	3226	4909	3824	3974	2639	4094	2909	3444
Col Maxs:	984	608	961	925	958	760	932	688	950
Min Mins:	10								
Max Maxs:	984								

=====

Case: 3

Row Sums:	1764	752
Row Mins:	814	74
Col Sums:	1492	1024
Col Maxs:	814	950
Min Mins:	74	
Max Maxs:	950	

=====

Case: 4

Row Sums:	1954	1554	1142
Row Mins:	178	43	27
Col Sums:	798	2746	1106
Col Maxs:	593	989	937
Min Mins:	27		
Max Maxs:	989		

=====

Case: 5

Row Sums:	644	595	1491	1078	985	810	384	1225	1010
Row Mins:	157	73	717	297	17	305	86	363	131
Col Sums:	4192	4030							
Col Maxs:	879	968							
Min Mins:	17								
Max Maxs:	968								

=====

Case: 6

Row Sums:	3861	4418							
Row Mins:	15	9							
Col Sums:	1402	506	1807	458	586	652	514	1843	511
Col Maxs:	891	497	936	383	346	637	431	997	264
Min Mins:	9								
Max Maxs:	997								

=====

Case: 7

Row Sums:	4796	5516	5581	4202	4313	6035	5540	4837	4066	4558
Row Mins:	79	90	275	149	2	102	0	139	75	26
Col Sums:	3781	4915	6112	4995	5879	5189	3647	3980	5147	5799
Col Maxs:	662	996	895	995	996	998	965	586	950	1000
Min Mins:	0									
Max Maxs:	1000									

=====

Problem #11

60 Points

11. Shekhar

Program Name: Shekhar.java

Input File: shekhar.dat

Test Input File:

[illegible]

Test Output To Screen:

[illegible]

Problem #12
60 Points

12. Thomas

Program Name: Thomas.java

Input File: tomas.dat

Test Input File: (wrapped lines, without intervening blank lines, are a single line of input, blank lines in data)
9

```

2 22 222 3 33333 3333333333 4 44444 444444 5 55555 555 6 66666 666 77777 77 7777777
77777777 8 888888888888 888 99999 99 9999999 999999999999

2222 66666 3333333333 0 777777777777 666 0 6666666666 99999999999 0 333333 33
555555555555 555 666666 99999 0 2222 66666666666 33333333 777 444 222 2222222 66666666666
7777 0 2222 777777777777 55555555555 0 66666 666666 8 0 9 44444444 2 88888888888 0
99999999999999 666666 888888888888 77777777777777 0 222222222 666666 888888888888 66 8
7777777 999 0 222 2 66 0 3333 666 0 333 666666666 77777777777 0 99999999999999 666 88 0
77777777777777 999 55555555555 0 9 44 2222222 8888 0 99999999999 666666666 88 0 222222 2 66666 0
3333333333 666666666666 0 333333 666 77777777777 0 999 666666 88888 777 0 222 666
88888888 66 8 777 999999999999999

999999999 33333333333 0 222 2 66666666 0 66 66666666666 8888888 0 44444 33 555555555555
7 0 33 888 33 777 999 666666 66 33 0 22222222 88 8888888 0 33 888888888888 33333333333
77777777777777 999 666666 66 33 0 222 222222222 66 0 44444444444 33333333333 555 7 0
7777 666666666666 6 33 666 66666 33333

22 33333 0 88888888 44 33 0 222222 444444444444 2 66666 4 33333 0 9999999 6666666666 88 0
999999999 2 66666 8888 0 8888888 666666666666 0 77777777 33 33 0 444 66666 0 8 44 33 0
999999999 666666 7777777 555 3333

9 33333 0 8 44 33333333 0 7 33333333333 666 77777 555 33333333 0 666666666666 333 0
88888888 444444444444 33 0 88 66 444 8 33 3 0 7777777777777777 8888 2 8 33333333 77777777 0
444444 66 0 6666666666 777 3333333333 33 777 0 8 666666666666 0 333333333333 666666666666
777 6 0 2 0 66666666666 666666 777 33 0 7 33 777 333 33 222 88888888888 0 88888 66666666
444 6666666666 66 0 33333 7777 8 22222222222 22 555555 444 7777777777777777 444444444444 0
5555 888888888888 77777777 8888888888 444444444444 22222222222 33 0 444444444444
666666666666 7777 888888888 7777777 33333 0 3 666666666666 6 33333333 77777777 8 444444
222222 0 8 7777777 2222222 66666 777777 88 444 555555555555 444444444444 8 99999999999 0
7 77777777777 666 888888888888 444 3333333 33333 0 333 666666 7777777 0 8888 44 33 0
222222222 666 6 6 666 66 0 3 33333333 333 33 66 7777777777777777 33333333333 0 77777 777
666 6 666 88888888 33333333333 0 8 44 33 0 4 33 66666 33333 777 2222 555555555 0 9 33
555555 3333333333 2 777 33 0 2222 666666666666 3333 0 7777 33333333 222 88 777 33 0 8
444444444444 33333 0 22 555555 33333333333 7777 7777 444 66 4 7777777777777777 0 666
333333333333 0 555555 444 22 33 777 8888 999 0 88888888 666666 0 6666666666 88
7777777777777777 77777777 33333333 555555555 888 33333 7777777777777777 0 2222 66666666
33333333 0 666666 888888888 777 0 7 666 7777777777777777 88888888888 33333333
7777777777777777 444 8 999 0 3 666666 0 6666666666666 77777777777 3333 2 444 66 0
2222222222 666666666 3333 0 33333333 777777777777 8 2 22 555555555 4444444444 7777 44 0
8888 44444 444444 777777777777 0 222 666 66 7777 8 444444444444 88888888888 88 8
444444444444 666 666666666666 0 333333333333 666666666666 77777777777 0 8 44 333333333333 0
88888 666666666 444 8 33333 3 0 7777 8 2 8888 33333 7777777777777777 0 666 3333333333 0 2 6
33333 777 444 222222 2

44 666 666666666 6666666666 777 0 88888888888 44 33 0 88888888888 333333333333 9999999999 2
7777777777777777 0 333 555 2 4444444 0 4444444444444 0 7 555555555555 33 3333 44444444444
33 0 2222222222 555555555555 555 33333333 4444 444444444444 2222 66 222 33 0 88888888888
666666 0 88888888 44 33 33 0 8 33 99 222222222 7777 0 666666 666666666 33333 0 7777 8 2
8888 33 0 88888 66666 3 33 77777777777 0 44444444444 666666666666 3 0 666 66 33 0 2 66666
33333333 0 444 66666666 33333333 444 888888 444444444444 7777 444444 22222 555 333333333

```

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44 88 555 555555555 2 22222 2 555 666666 666666 0 222 2 66666 33 222 555555555 0 222222222
2222222 66666666666 33333333 22222 55 0 44444 88888888 555 55555 222222222 22222222 2
555555 666666 666 0 222222222 222222 66666666 33 22222222222 55555555 0 222 2 66 33 222
55

2 6 2 77777777777777 444 555 555 666 0 22 999 0 6666666666 666666666 777 66 444 66666666
0 88 777777777777 0 333 77777777777777 666666666 6666 0 77777777 2 66666666666 0 2 66
88888888 666 66666666 33 0 33333333333 888 33 7777777 999 8888 44444444444 444444444444 66
44444444444 0 8 44444444 2222222222 8888888 0 444 0 4444444 666666666666 8 0 444 7777 0
5555555555 88 77777777 88888888888 0 999999999999 44 2 8 0 444444444 8888888888
33333333333 0 4444444444 666666 8 0 666 66 0 999999999999 44444444 33 66666666666 0 8
444444444 2 8888 0 777777777777 88 66 0 444444444 7777 0 44 444 4444 44444444444 0 444444
666666666 0 8888888888 44 2222 8 0 8888 33 9999999999 2222222222 77777777777 0 7777 55555
999 0 444 55555555555 555 0 22222 33333 0 22222222222 88 22222 55555555555 444444444 66
0 2222 8 0 8888888 44 33333 0 222 666 88 66 8 999999999999999 0 333333333333 2 4444444444
777 0 2 6 2 77777777777777 444444444 555555 555 666666666666 0 22 999 0 6666666
66666666666 7777777 66666666 444 66 0 2222222222 6 2 77777777777 444444444444 555
555555555 666666666 0 444444444 555555555 555 0 22222222 33 0 8888888 444444444444
33333333333 777 33

88888888 44 333333333 0 77 88 444 222222222 55555555 0 22 777 6666666666 9 66 0 333333333333
666666666 999999 0 5555555555 88 6 7 7777 0 666666666666 888888888888 33333 777 0 8 44
33333333333 0 555555 2222 999999999999 9999999 0 3 666666666 4

Test Output To Screen: (blank lines will NOT appear in screen output, used her to see wrapped lines)

ABCDEFGHIJKLMNOPQRSTUVWXYZ

AND SO MY FELLOW AMERICANS ASK NOT WHAT YOUR COUNTRY CAN DO FOR YOU ASK WHAT YOU
CAN DO FOR YOUR COUNTRY

WE CAN NOT HELP EVERYONE BUT EVERYONE CAN HELP SOMEONE

BE THE CHANGE YOU WANT TO SEE IN THE WORLD

WE THE PEOPLE OF THE UNITED STATES IN ORDER TO FORM A MORE PERFECT UNION
ESTABLISH JUSTICE INSURE DOMESTIC TRANQUILITY PROVIDE FOR THE COMMON DEFENSE
PROMOTE THE GENERAL WELFARE AND SECURE THE BLESSINGS OF LIBERTY TO OURSELVES AND
OUR POSTERITY DO ORDAIN AND ESTABLISH THIS CONSTITUTION FOR THE UNITED STATES OF
AMERICA

HONOR THE TEXAS FLAG I PLEDGE ALLEGIANCE TO THEE TEXAS ONE STATE UNDER GOD ONE
AND INDIVISIBLE

HULLABALOO CANECK CANECK HULLABALOO CANECK CANECK

AMARILLO BY MORNIN UP FROM SAN ANTONE EVERYTHING THAT I GOT IS JUST WHAT IVE GOT
ON WHEN THAT SUN IS HIGH IN THAT TEXAS SKY ILL BE BUCKIN AT THE COUNTY FAIR
AMARILLO BY MORNIN AMARILLO ILL BE THERE

THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG