UIL Computer Science Competition

Invitational B 2023

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.

II. Table of Contents

Problem #1
60 Points

1. Dilmini

Program Name: Dilmini.java **Input File: NONE**

Test Input File: NONE

Test Output To Screen:

```
__________$$$$$$$$$
_________$_________$$
_________$_$$$$$$$_$$
_________$_$_____$_$$
_________$_$_____$_$$
_________$_$_____$_$$
_________$_$_____$_$$
_________$_$$$$$$$_$$
_________$_________$$
__________$$$$$$$$$
_________$_________$$
________$_1__2__3_$$$
_______$_4__5__6_$$$
______$_7__8__9_$$$
_____$_*__0__#_$$$
____$_________$$$
_____$$$$$$$$$$
______$$$$$$$$
```

Problem #2
60 Points

2. Emily

Program Name: Emily.java **Input File: emily.dat**

Test Input File:

```
20
1 + 2
5 - 1
4 * 3
8 x 6
9 X 4
20 / 6
40 / 10
2 + 1
1 - 5
3 * 4
6 x 8
4 X 9
6 / 20
10 / 40
-5 + 23
-255 + 0
255 + 6
-4 x -5
-30 / 5
36 / -12
```

Test Output To Screen:

```
1 + 2 = 3
5 - 1 = 4
4 * 3 = 12
8 x 6 = 48
9 X 4 = 36
20 / 6 = 3 remainder 2
40 / 10 = 4 remainder 0
2 + 1 = 3
1 - 5 = -4
3 * 4 = 12
6 x 8 = 48
4 X 9 = 36
6 / 20 = 0 remainder 6
10 / 40 = 0 remainder 10
-5 + 23 = 18
-255 + 0 = -255
255 + 6 = 261
-4 x -5 = 20
-30 / 5 = -6 remainder 0
36 / -12 = -3 remainder 0
```

Problem #3
60 Points

3. Fiorella

Program Name: Fiorella.java **Input File: fiorella.dat**

Test Input File:

```
10
2 2 2 2 8
2 2 2 2 514
3 2 3 16 52
6 7 8 10 2362
2 2 2 2 8192
3 2 3 1 64
1 212 1 1 2
4 2 4 2 258
3 3 3 3 12
3 3 3 3 59052
```

Test Output To Screen:

```
0
7
2
2
10
2
0
4
0
8
```

Problem #4
60 Points

4. Jacob

Program Name: Jacob.java **Input File: jacob.dat**

Test Input File:	Test Output To Screen:
25	3.1396825396825
4	3.1420718170718
7	3.1416106990405
23	3.1415928891421
101	3.1415926539194
911	3.0000000000000
0	3.1666666666667
1	3.1333333333333
2	3.1452380952381
3	3.1415926533405
1000	3.1415926652257
277	3.1415926613640
317	3.1415926566480
433	3.1415926555425
503	3.1415926544835
653	3.1415926516018
500	3.1415926541638
757	3.1415926540116
839	3.1415926538413
997	3.1417360992607
11	3.1415924109720
100	3.1415926228048
200	3.1415926444226
300	3.1415926528640
700	3.1415926532480
900	

Problem #5
60 Points

5. Karen

Program Name: Karen.java **Input File: karen.dat**

Test Input File:

```
10
90
91
144
500000
1111
1
1000000
77777
200
40001
```

Test Output to Screen:

```
81
100
144
499849
1089
1
1000000
77841
196
40000
```

Problem #6
60 Points

6. Lautaro

Program Name: Lautaro.java **Input File: lautaro.dat**

Test Input File:

```
15
(833) 691-2590
(323)-432-3222
(34) 345-2341
(233) 888 7876
888 888-8888
888-888-8888
(333) 333-3333
(432) 33-2345
(8900) 456-4567
(899) 1234-1234
(432) 123-123
(452) 321-12345
(321) 3214-12345
(900) 32-345
Your Teacher is My Teacher.
```

Test Output To Screen:

```
Valid Phone Number.
No Calls for You.
No Calls for You.
No Calls for You.
No Calls for You.
No Calls for You.
Valid Phone Number.
No Calls for You.
No Calls for You.
No Calls for You.
No Calls for You.
No Calls for You.
No Calls for You.
No Calls for You.
No Calls for You.
No Calls for You.
```

Problem #7
60 Points

7. Mario

Program Name: Mario.java **Input File: mario.dat**

Test Input File:

```
10
3 ABCDEFG
4 AB
1 ABCDEFG
5 QWERTY
2 ASDFGH
10 TELEVISION
8 BIFOCAL
2 PRESIDENT
1 CEILING
3 PAJAMAS
```

Test Output to Screen:

```
GFEDCBA
error
GBCDEFA
YTREWQ
HGDFSA
NOISIVELET
error
TNESIDERP
GEILINC
SAMAJAP
```

Problem #8
60 Points

8. Petra

Program Name: Petra.java **Input File: petra.dat**

Test Input File:

```
10
21
44
700
369
12345
45678
301
88
1
999998
```

Test Output to Screen:

```
3
44
7
9
3
6
1
88
1
1
```

Problem #9
60 Points

9. Rishita

Program Name: Rishita.java **Input File: rishita.dat**

Test Input File:

```
UNIVERSITY PHYSICS I LAB,PHYS-2125,TEXAS REPUBLIC COLLEGE
ELEMENTARY STATISTICAL METHODS,MATH-1342,TEXAS REPUBLIC COLLEGE
COMPUTER ORGANIZATION,COSC-2325,BEXAR COMMUNITY COLLEGE
PROGRAMMING FUNDAMENTALS I,COSC-1336,TEXAS REPUBLIC COLLEGE
UNIVERSITY PHYSICS I,PHYS-2325,TEXAS REPUBLIC COLLEGE
INTRODUCTION TO COMPUTER PROGRAMMING,COSC-1315,BEXAR COMMUNITY COLLEGE
C PROGRAMMING,COSC-1320,TEXAS VIRTUAL COLLEGE
CALCULUS I,MATH-2313,TEXAS VIRTUAL COLLEGE
PROGRAMMING FUNDAMENTALS II,COSC-1337,TEXAS REPUBLIC COLLEGE
INTRODUCTION TO COMPUTER PROGRAMMING,COSC-1315,TEXAS REPUBLIC COLLEGE
PROGRAMMING FUNDAMENTALS I,COSC-1336,TEXAS VIRTUAL COLLEGE
PROGRAMMING FUNDAMENTALS III,COSC-2336,TEXAS VIRTUAL COLLEGE
CALCULUS II,MATH-2314,TEXAS REPUBLIC COLLEGE
COLLEGE ALGEBRA,MATH-1314,WATER HOLE COLLEGE
ELEMENTARY PHYSICS,PHYS-1310,VETERAN COLLEGE OF TEXAS
COLLEGE PHYSICS I LAB,PHYS-1101,TEXAS REPUBLIC COLLEGE
PHYSICAL SCIENCE II LAB,PHYS-1117,TEXAS VIRTUAL COLLEGE
CALCULUS III,MATH-2315,TEXAS REPUBLIC COLLEGE
ELEMENTARY PHYSICS I,PHYS-1305,TEXAS REPUBLIC COLLEGE
SOLAR SYSTEM,PHYS-1304,TEXAS REPUBLIC COLLEGE
ELEMENTARY PHYSICS II LAB,PHYS-1107,TEXAS REPUBLIC COLLEGE
PHYSICAL SCIENCE I,PHYS-1315,WATER HOLE COLLEGE
PRE-CALCULUS MATH,MATH-2312,WATER HOLE COLLEGE
MATHEMATICS FOR TEACHERS II,MATH-1351,VETERAN COLLEGE OF TEXAS
UNIVERSITY PHYSICS II,PHYS-2326,BEXAR COMMUNITY COLLEGE
COLLEGE PHYSICS I,PHYS-1301,BEXAR COMMUNITY COLLEGE
ELEMENTARY PHYSICS I LAB,PHYS-1105,TEXAS REPUBLIC COLLEGE
PHYSICAL SCIENCE I LAB,PHYS-1115,TEXAS VIRTUAL COLLEGE
COLLEGE PHYSICS II LAB,PHYS-1102,VETERAN COLLEGE OF TEXAS
CALCULUS II,MATH-2314,BEXAR COMMUNITY COLLEGE
PHYSICAL SCIENCE II,PHYS-1317,TEXAS VIRTUAL COLLEGE
UNIVERSITY PHYSICS II LAB,PHYS-2126,WATER HOLE COLLEGE
LINEAR ALGEBRA,MATH-2318,VETERAN COLLEGE OF TEXAS
MATHEMATICS FOR TEACHERS I,MATH-1350,WATER HOLE COLLEGE
ELEMENTARY PHYSICS II LAB,PHYS-1307,TEXAS VIRTUAL COLLEGE
DISCRETE MATHEMATICS,MATH-2305,BEXAR COMMUNITY COLLEGE
COLLEGE PHYSICS II,PHYS-1302,WATER HOLE COLLEGE
PLANE TRIGONOMETRY,MATH-1316,TEXAS VIRTUAL COLLEGE
SOLAR SYSTEM LAB,PHYS-1104,VETERAN COLLEGE OF TEXAS
MATHEMATICS FOR TEACHERS II,MATH-1351,WATER HOLE COLLEGE
MATHEMATICS FOR TEACHERS I,MATH-1350,VETERAN COLLEGE OF TEXAS
PROGRAMMING FUNDAMENTALS II,COSC-1337,VETERAN COLLEGE OF TEXAS
PROGRAMMING FUNDAMENTALS III,COSC-2336,VETERAN COLLEGE OF TEXAS
INTRODUCTION TO COMPUTING,COSC-1301,TEXAS VIRTUAL COLLEGE
DIFFERENTIAL EQUATIONS,MATH-2320,BEXAR COMMUNITY COLLEGE
```

~ Output continues on next page ~

~ Rishita, continued ~

Test Output To Screen:

```
BEXAR COMMUNITY COLLEGE
   COSC-1315   INTRODUCTION TO COMPUTER PROGRAMMING
   COSC-2325   COMPUTER ORGANIZATION
   MATH-2305   DISCRETE MATHEMATICS
   MATH-2314   CALCULUS II
   MATH-2320   DIFFERENTIAL EQUATIONS
   PHYS-1301   COLLEGE PHYSICS I
   PHYS-2326   UNIVERSITY PHYSICS II
TEXAS REPUBLIC COLLEGE
   COSC-1315   INTRODUCTION TO COMPUTER PROGRAMMING
   COSC-1336   PROGRAMMING FUNDAMENTALS I
   COSC-1337   PROGRAMMING FUNDAMENTALS II
   MATH-1342   ELEMENTARY STATISTICAL METHODS
   MATH-2314   CALCULUS II
   MATH-2315   CALCULUS III
   PHYS-1101   COLLEGE PHYSICS I LAB
   PHYS-1105   ELEMENTARY PHYSICS I LAB
   PHYS-1107   ELEMENTARY PHYSICS II LAB
   PHYS-1304   SOLAR SYSTEM
   PHYS-1305   ELEMENTARY PHYSICS I
   PHYS-2125   UNIVERSITY PHYSICS I LAB
   PHYS-2325   UNIVERSITY PHYSICS I
TEXAS VIRTUAL COLLEGE
   COSC-1301   INTRODUCTION TO COMPUTING
   COSC-1320   C PROGRAMMING
   COSC-1336   PROGRAMMING FUNDAMENTALS I
   COSC-2336   PROGRAMMING FUNDAMENTALS III
   MATH-1316   PLANE TRIGONOMETRY
   MATH-2313   CALCULUS I
   PHYS-1115   PHYSICAL SCIENCE I LAB
   PHYS-1117   PHYSICAL SCIENCE II LAB
   PHYS-1307   ELEMENTARY PHYSICS II LAB
   PHYS-1317   PHYSICAL SCIENCE II
VETERAN COLLEGE OF TEXAS
   COSC-1337   PROGRAMMING FUNDAMENTALS II
   COSC-2336   PROGRAMMING FUNDAMENTALS III
   MATH-1350   MATHEMATICS FOR TEACHERS I
   MATH-1351   MATHEMATICS FOR TEACHERS II
   MATH-2318   LINEAR ALGEBRA
   PHYS-1102   COLLEGE PHYSICS II LAB
   PHYS-1104   SOLAR SYSTEM LAB
   PHYS-1310   ELEMENTARY PHYSICS
WATER HOLE COLLEGE
   MATH-1314   COLLEGE ALGEBRA
   MATH-1350   MATHEMATICS FOR TEACHERS I
   MATH-1351   MATHEMATICS FOR TEACHERS II
   MATH-2312   PRE-CALCULUS MATH
   PHYS-1302   COLLEGE PHYSICS II
   PHYS-1315   PHYSICAL SCIENCE I
   PHYS-2126   UNIVERSITY PHYSICS II LAB
```

Problem #10
60 Points

10. Shivani

Program Name: Shivani.java **Input File: shivani.dat**

Test Input File: (*indented lines are continuations of previous line*)

```
15
6
12
25
53
123456789
234567890
345678901
1234567890
1
2
3
12345670987654123456789876543345678765
123454321234
234567654334567876545678987653576886567865643546787654357987867564387986756435675867867564367586798675643
0
```

Test Output To Screen: (*indented lines are continuations of previous line*)

```
56
364
2925
26235
313612736252315226397035
215106948284414107056018
6884420214044052050454651
313612729393604748070560180
1
4
10
313612125648698381628978249890078539444825647697249986989585021840047472475488546518835042618878109765064006208120
313593922690148606789819349221940
215106297193670771803814128384475041290554774651543484144705038436998341167933939307340866201413423279684182378111659236516025054647480701505322683497330697968818205640361578456408363933756514398435086087952706795503990018873029954628904111106589828458262983777704310137571524067705444646297856080176946029880239090
0
```

Problem #11
60 Points

11. Tushar

Program Name: Tushar.java **Input File: tushar.dat**

Test Input File: (*rows of data indented and right-aligned here for readability, actual data single tab delimited*)

```
7
5 6
1     6     11    15    18    20
21    2     7     12    16    19
25    22    3     8     13    17
28    26    23    4     9     14
30    29    27    24    5     10
4 4
-13   -9    -5    -1
-14   -10   -6    -2
-15   -11   -7    -3
-16   -12   -8    -4
3 2
1     -6
-2    5
3     -4
2 2
-33   4
-83   2
12 12
-85   -2    100   -23   39    -96   -98   35    -3    -18   -85   -95
-79   22    46    -80   5     31    20    -71   64    32    -35   -38
-3    87    65    -90   -12   30    -50   -74   91    14    -38   100
24    33    -13   -2    7     53    30    -26   44    55    70    90
-27   69    -4    20    -76   -48   0     36    -24   -54   -78   33
9     91    51    21    21    -51   29    -69   3     84    -37   -18
41    94    89    80    -92   -2    -88   17    -12   72    23    -83
-19   -39   -54   -16   71    -95   25    29    5     -40   51    41
95    -66   40    79    -100  -15   76    -56   -34   -83   37    36
-67   -36   -58   -70   95    36    -12   29    -88   -95   -16   -59
61    -18   6     18    21    58    -67   -49   -35   53    -36   -33
85    59    40    47    -55   -22   31    19    96    83    62    -27
3 12
-51   -49   94    21    -3    96    -22   31    37    60    -82   -28
-52   86    -26   -2    81    -10   -29   43    -99   -10   -92   26
46    23    77    -42   59    59    22    47    92    88    -69   7
```

~ Input & Output continues on next page ~

~ Tushar, continued ~

```
12 3
-3    1     55
-28   26    -23
4     -92   89
-56   16    -43
61    -17   -24
-49   37    82
77    -40   -60
63    -91   -58
-78   -73   88
-17   -69   -58
-22   -59   76
-2    41    -77
```

Test Output To Screen: (*indented lines are continuation of previous line*)

```
3.00 8.00 12.50 16.00 18.50 20.00 22.50 26.00 28.50 30.00
-8.50 -6.00 -3.50 -1.00 -11.00 -13.50 -16.00
3.00 -6.00 -3.00 3.00
-15.50 4.00 -83.00
-31.50 -15.27 -8.20 26.67 14.75 -40.00 -19.83 43.20 20.25 15.67 -61.50 -95.00
   2.73 1.30 35.00 3.13 44.57 -4.83 -36.00 28.00 -15.00 60.00 85.00
37.33 -39.00 50.33 53.67 3.00 38.00 37.67 6.67 -14.00 -8.33 -28.00 -28.00 -14.50
   46.00
37.33 -11.00 55.00 -54.33 -1.33 3.00 12.67 -49.00 24.67 -22.67 -23.67 -51.00
   9.50 -2.00
```

Problem #12
60 Points

12. Vinay

Program Name: Vinay.java **Input File: vinay.dat**

Test Input File:

```
29
deified
Do geese see God?
Was it a car or a cat I saw?
Rats live on no evil star
Live on time, emit no evil
Step on no pets
Don't nod.
Evil olive.
Amore, Roma.
Yo, banana boy!
Dammit, I'm mad!
Borrow or rob?
I did, did I?
Draw, O coward!
Wonton? Not now!
Never odd or even.
Step on no pets.
Live not on evil.
Rise to vote, sir!
Stella won no wallets.
Won't lovers revolt now?
Delia saw I was ailed.
Too bad I hid a boot.
Red rum, sir, is murder.
Nate bit a Tibetan.
Ah. Satan sees Natasha.
Nat bit a Tibetan.
Step on no pe.
112233445566778899aabbccdde
```

~ Vinay Output on next page ~

~ Vinay Output ~

Test Output To Screen: (lines that are indented are continuation of previous line)

```
deified can be rearranged to form 6 distinct palindrome(s).
Do geese see God? can be rearranged to form 360 distinct palindrome(s).
Was it a car or a cat I saw? can be rearranged to form 60480 distinct
   palindrome(s).
Rats live on no evil star can be rearranged to form 3628800 distinct
   palindrome(s).
Live on time, emit no evil can be rearranged to form 907200 distinct
   palindrome(s).
Step on no pets can be rearranged to form 720 distinct palindrome(s).
Don't nod. can be rearranged to form 6 distinct palindrome(s).
Evil olive. can be rearranged to form 24 distinct palindrome(s).
Amore, Roma. can be rearranged to form 24 distinct palindrome(s).
Yo, banana boy! can be rearranged to form 120 distinct palindrome(s).
Dammit, I'm mad! can be rearranged to form 60 distinct palindrome(s).
Borrow or rob? can be rearranged to form 30 distinct palindrome(s).
I did, did I? can be rearranged to form 6 distinct palindrome(s).
Draw, O coward! can be rearranged to form 120 distinct palindrome(s).
Wonton? Not now! can be rearranged to form 180 distinct palindrome(s).
Never odd or even. can be rearranged to form 2520 distinct palindrome(s).
Step on no pets. can be rearranged to form 720 distinct palindrome(s).
Live not on evil. can be rearranged to form 720 distinct palindrome(s).
Rise to vote, sir! can be rearranged to form 720 distinct palindrome(s).
Stella won no wallets. can be rearranged to form 181440 distinct palindrome(s).
Won't lovers revolt now? can be rearranged to form 181440 distinct
   palindrome(s).
Delia saw I was ailed. can be rearranged to form 20160 distinct palindrome(s).
Too bad I hid a boot. can be rearranged to form 2520 distinct palindrome(s).
Red rum, sir, is murder. can be rearranged to form 20160 distinct palindrome(s).
Nate bit a Tibetan. can be rearranged to form 2520 distinct palindrome(s).
Ah. Satan sees Natasha. can be rearranged to form 30240 distinct palindrome(s).
Nat bit a Tibetan. can not be rearranged to form a palindrome.
Step on no pe. can not be rearranged to form a palindrome.
112233445566778899aabbccdde can be rearranged to form 6227020800 distinct
   palindrome(s).
```