UIL Computer Science Competition

District 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.

II. Table of Contents

Problem #1
60 Points

1. Adrian

Program Name: Adrian.java **Input File: adrian.dat**

Test Input File: None

Test Output to Screen:

```
JAVA
PYTHON
SWIFT
ADA
C
C++
COBOL
FORTRAN
ALGOL
BASIC
DELPHI
PASCAL
PL1
JAVASCRIPT
```

Problem #2
60 Points

2. Arusha

Program Name: Arusha.java **Input File: arusha.dat**

Test Input File: (indentations are continuations of long lines)

```
10
ABCDE L
ABCDE R
AB LLL
sswzibsegmrvplkqmlbnzjfmdnbzvivn
   RLLLRLLRRLRRRLLRRLLRRLRLLLRLRLLLLLRLLLRRRRLLLLLRRLRLLLRLLRRLRLLRRLRLR
ioqsfktdljctzzihbgjaxllsqd LLRLRLLLRLLLLLLRRLRRRLRRLLLR
zptnfidjoqdpjyrdqrnpghufinamguqtbdzmhknutcriagwuvxnjdyjjikcqpqwdirgpwe
   LLLLRLRRLRRLLLRRLLRLLLLLRRRRLLLLRRLLRRLRLRLRRLLLLLRRRLRLRLLLLLRLRRRLLRRRLLLRR
   LLLLRRLRRRLRRLRR
krblmjodj RLRLLRRRRLLRLLRLLR
dzyippbxinffobwhebdxybawewyyui
   RLLLRLRRLRLRRRLLRLLRLRLLRLLRRRRLLRLRRRRLRLLRRRLLLLRLLRLLRRLRLLRLRLRLRRRRLLLLR
   RLR
hopvxjplhhhiw
   LLRLRLRRLRRRRRLRRRRLLRLLRLLLLLLLRLLRRRRLLLRLRLLLLRLLRRLLLRLLRRRRLLLLLLLRRLRRLRR
   LLRLL
tvzdiofnvfsolpfxylqiebisbsggtynqnhsryqrmuhmvgkukfrypibgexzjkgtvztnwzumplxzdnohmp
   LRLRRLRRLLLRLRLRRRLRLLRLRLRRRRLRRLLRRLRRLRLRLLRRLLRLRLLLLRRRLRRRLLRRRLRRLLLLR
   RRRRLRRRRRRRRLRLRRL
```

Test Output to Screen:

```
BCDEA
EABCD
BA
mrvplkqmlbnzjfmdnbzvivnsswzibseg
tdljctzzihbgjaxllsqdioqsfk
joqdpjyrdqrnpghufinamguqtbdzmhknutcriagwuvxnjdyjjikcqpqwdirgpwezptnfid
krblmjodj
dzyippbxinffobwhebdxybawewyyui
hiwhopvxjplhh
tnwzumplxzdnohmptvzdiofnvfsolpfxylqiebisbsggtynqnhsryqrmuhmvgkukfrypibgexzjkgtvz
```

Problem #3
60 Points

3. Catherine

Program Name: Catherine.java **Input File: catherine.dat**

Test Input File:

```
8
logic texas
purse purse
china cloth
shoes ascot
abcde edcba
chair wreck
bugle bagel
steam teams
```

Test Output to Screen:

```
*****
PURSE
C***h
*s*o*
edCba
*r*c*
B*Gel
teams
```

Problem #4
60 Points

4. Diane

Program Name: Diane.java **Input File: diane.dat**

Test Input File:

```
10
12 and 20
30 and 20
22 and 27
1/7 and 2/5
0 and -21
5 1/3 and 7 5/7
10 1/4 and -11 2/3
-1/2 and -3/4
2/3 and -2/3
20 and -1/11
```

Test Output to Screen:

```
32
50
49
19/35
-21
13 1/21
-1 5/12
-1 1/4
0
19 10/11
```

Problem #5
60 Points

5. Facundo

Program Name: Facundo.java **Input File: facundo.dat**

Test Input File:

```
10
ABCDEFG 0
ABCDEFG 1
ABCDEFG 2
ABCDEFG 3
ABCDEFGHIJ 0
ABCDEFGHIJ 1
ABCDEFGHIJ 2
ABCDEFGHIJ 3
ABCDEFGHIJKLMNOPQRSTUVWXYZ 10
ABCDE 50
```

Test Output to Screen:

```
ABCDEFG
AEBFCGD
ACEGBDF
ABCDEFG
ABCDEFGHIJ
FAGBHCIDJE
CFIADGJBEH
GCJFBIEAHD
MZLYKXJWIVHUGTFSERDQCPBOAN
AEDCB
```

Problem #6
60 Points

6. Haru

Program Name: Haru.java **Input File: haru.dat**

Test Input File: (indentations are continuations of long lines)

```
10
1
5 6 R
6 6 L
3
3 3 RRR
5 4 DDD
1
0 0 U
1 1 L
2
0 0 UR
1 1 DL
2
0 0 UU
1 1 UU
2
5 5 LR
10 10 RR
3
5 4 DDD
3 3 RRR
100
0 0
   LLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLL
   LLLLLLLLLL
100 100
   RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR
   RRRRRRRRRR
100
0 0
   DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
   DDDDDDDDDD
100 100
   UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
   UUUUUUUUUU
3
0 1 DDD
0 0 RUL
```

Test Output to Screen:

```
HEAD ON
P2 WIN
HEAD ON
DOUBLE SPIKE
DRAW
P2 WIN
P1 WIN
DOUBLE SPIKE
DOUBLE SPIKE
P2 WIN
```

Problem #7
60 Points

7. Kristina

Program Name: Kristina.java **Input File: kristina.dat**

Test Input File: (lines that start with → are continuation of previous line)

```
25
PRE + - * 7 5 - 9 6 -5
POST 7 5 * 9 6 - - -5 +
POST 2 8 3 4 2 * / + -
PRE - 2 + 8 / 3 * 4 2
POST -39 9 + -35 -44 * -100 / -
PRE + -97 - * 47 29 / ^ 3 5 100
POST 2 8 * 3 4 2 / + -
PRE + - * - 7 5 9 6 -5
POST 19 -4 100 10 / * 4 3 ^ - *
POST 100 5 3 ^ -12 -3 / * +
PRE / ^ + 21 -17 3 * - -2 -9 -3
PRE - * 27 41 + / * 28 -20 + -99 47 * 15 29
POST 27 41 * 28 -20 * -99 47 + / 15 29 * + -
POST 83 -55 + 65 21 - 100 7 / -32 -76 - * 11 45 - * / +
PRE + + 83 -55 / - 65 21 * / 100 7 * - -32 -76 - 11 45
POST 18 67 -41 93 -58 28 21 -92 0 67 -55 -5 88 -78 -59 -67 21 44 19 0 44 22 -37
→ 74 -36 + + + + + + + + + + + + + + + + + + + + + + + + + + +
PRE / * / * / * / * / * / * / * / * / * / * / * / * 6 54 -1 -3 7 37 70 24 80 66
→ -13 -53 62 -40 84 -89 -89 78 101 -89 53 -55 -87 -95 93
POST 2 10 ^ 4 2 ^ + 3 5 ^ 5 3 ^ + - 7 3 ^ 6 3 ^ - 8 5 ^ 9 3 ^ - + *
PRE * - + ^ 2 10 ^ 4 2 + ^ 3 5 ^ 5 3 + - ^ 7 3 ^ 6 3 - ^ 8 5 ^ 9 3
POST 1 2 * 3 4 * * 5 6 * * 7 8 * * 9 10 * *
PRE * * * * * 10 9 * 8 7 * 6 5 * 4 3 * 2 1
POST 2 30 ^ 16 2 ^ / 4 3 ^ * 8 5 ^ / 32 2 ^ * 2 10 ^ /
PRE - * 123 -456 / + - -789 234 + 567 -890 - + -345 678 / 901 77
POST 10 11 + 12 + 13 + 14 + 15 + 15 -30 + + -28 14 + + 13 -26 + + -24 12 + + 11
→ -22 + + -10 +
PRE / * * / * -67 -91 * 46 82 + * 44 39 * 71 80 * / * 39 78 * 61 25 * * -16 33 /
→ -98 48 * / * -79 -80 * 10 25 / * -82 -96 * -71 -7
```

Test Output to Screen:

```
27
27
-6
-6
-15
1264
11
7
-1976
600
-3
662
662
28
28
78
-33
21615552
21615552
3628800
3628800
8192
-56084
0
20827
```

Problem #8
60 Points

8. Lavanya

Program Name: Lavanya.java **Input File: lavanya.dat**

Test Input File:

```
18
2
3
4
5
9
123456
654321
121212121
1000000001
11
13
13
97531
1999999999
2000000000
2147483645
2147483646
2147483647
```

Test Output to Screen:

```
2 = 2
3 = 3
4 = 2 * 2
5 = 5
9 = 3 * 3
123456 = 2 * 2 * 2 * 2 * 2 * 2 * 3 * 643
654321 = 3 * 218107
121212121 = 83 * 577 * 2531
1000000001 = 7 * 11 * 13 * 19 * 52579
11 = 11
13 = 13
13 = 13
97531 = 7 * 13933
1999999999 = 31 * 64516129
2000000000 = 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 5 * 5 * 5 * 5 * 5 * 5 * 5 * 5 *
5 * 5
2147483645 = 5 * 19 * 22605091
2147483646 = 2 * 3 * 3 * 7 * 11 * 31 * 151 * 331
2147483647 = 2147483647
```

Problem #9
60 Points

9. Manos

Program Name: Manos.java **Input File: manos.dat**

Test Input File:

```
10
0 1
1 1
1 2
50 50
50 7
100 100
100 99
99 100
99 99
100 0
```

Test Output to Screen:

```
P1
P2
P1
P2
P1
P2
P1
P1
P2
P1
```

Problem #10
60 Points

10. Michaela

Program Name: Michaela.java **Input File: michaela.dat**

Test Input File: (indentations are continuations of long lines)

```
11
a
ab
a b
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
a b c d e f g h i j k l m n o p q r s t u v w x y z
A B C D E F G H I J K L M N O P Q R S T U V X X Y Z
THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG
to all the judges out there grading this please know i did not make this output
   hard to grade on purpose it just came out this way
please forgive me
if you are not using an autograder i am really really sorry
```

Test Output To Screen: (indentations are continuations of long lines)

```
Message #1: -.....-
Message #2: -.....- -....-.
Message #3: -.....- -..... -....-.
Message #4: -.....- -....-. -....-- -...-.. -...-.- -...--. -...--- -..-... -..-
   ..- -..-.-. -..-.-- -..--.. -..--.- -..---. -..---- -.-.... -.-...- -.-..-. -
   .-..-- -.-.-.. -.-.-.- -.-.--. -.-.--- -.--... -.--..- -.--.-.
Message #5: -.....- -....-. -....-- -...-.. -...-.- -...--. -...--- -..-... -..-
   ..- -..-.-. -..-.-- -..--.. -..--.- -..---. -..---- -.-.... -.-...- -.-..-. -
   .-..-- -.-.-.. -.-.-.- -.-.--. -.-.--- -.--... -.--..- -.--.-.
Message #6: -.....- -..... -....-. -..... -...-- -..... -...-.. -..... -...-.-
   -..... -...--. -..... -...--- -..... -..-... -..... -..-..- -..... -..-.-. -
   ..... -..-.-- -..... -..--.. -..... -..--.- -..... -..---. -..... -..---- -
   ..... -.-.... -..... -.-...- -..... -.-..-. -..... -.-..-- -..... -.-.-.. -
   ..... -.-.-.- -..... -.-.--. -..... -.-.--- -..... -.--... -..... -.--..- -
   ..... -.--.-.
Message #7: -.....- -..... -....-. -..... -...-- -..... -...-.. -..... -...-.-
   -..... -...--. -..... -...--- -..... -..-... -..... -..-..- -..... -..-.-. -
   ..... -..-.-- -..... -..--.. -..... -..--.- -..... -..---. -..... -..---- -
   ..... -.-.... -..... -.-...- -..... -.-..-. -..... -.-..-- -..... -.-.-.. -
   ..... -.-.-.- -..... -.-.--. -..... -.-.--- -..... -.--... -..... -.--..- -
   ..... -.--.-.
Message #8: -.-.-.. -..-... -...-.- -..... -.-...- -.-.-.- -..-..- -....-- -..-
   .-- -..... -...-. -.-..-. -..---- -.-.--- -..---. -..... -...--. -..---- -.-
   -... -..... -..-.-. -.-.-.- -..--.- -.-.... -.-..-- -..... -..---- -.-.--. -
   ...-.- -.-..-. -..... -.-.-.. -..-... -...-.- -..... -..--.. -.....- -.--.-.
   -.--..- -..... -...-.. -..---- -...---
Message #9: -.-.-.. -..---- -..... -.....- -..--.. -..--.. -..... -.-.-.. -..-
   ... -...-.- -..... -..-.-. -.-.-.- -...-.. -...--- -...-.- -.-..-- -..... -
   ..---- -.-.-.- -.-.-.. -..... -.-.-.. -..-... -...-.- -.-..-. -...-.- -.....
   -...--- -.-..-. -.....- -...-.. -..-..- -..---. -...--- -..... -.-.-.. -..-
   ... -..-..- -.-..-- -..... -.-.... -..--.. -...-.- -.....- -.-..-- -...-.- -
   ..... -..-.-- -..---. -..---- -.-.--- -..... -..-..- -..... -...-.. -..-..- -
   ...-.. -..... -..---. -..---- -.-.-.. -..... -..--.- -.....- -..-.-- -...-.-
```

-..... -.-.-.. -..-... -..-..- -.-..-- -..... -..---- -.-.-.- -.-.-.. -.-....
-.-.-.- -.-.-.. -..... -..-... -.....- -.-..-. -...-.. -..... -.-.-.. -..----
-..... -...--- -.-..-. -.....- -...-.. -...-.- -..... -..---- -..---. -.....
-.-.... -.-.-.- -.-..-. -.-.... -..---- -.-..-- -...-.- -..... -..-..- -.-.-
.. -..... -..-.-. -.-.-.- -.-..-- -.-.-.. -..... -...-- -.....- -..--.- -
...-.- -..... -.-.---- -.-.-.- -.-.-.. -..... -.-.-.. -..-... -..-..- -.-..--
-..... -.-.--- -.....- -.--..-
Message #10: -.-.... -..--.. -...-.- -.....- -.-..-- -...-.- -..... -...--. -..-
--- -.-..-. -...--- -..-..- -.-.--. -...-.- -..... -..--.- -...-.-
Message #11: -..-..- -...--. -..... -.--..- -..---- -.-.-.- -..... -.....- -.-
..-. -...-.- -..... -..---. -..---- -.-.-.. -..... -.-.-.- -.-..-- -..-..- -
..---. -...--- -..... -.....- -..---. -..... -.....- -.-.-.- -.-.-.. -..----
-...--- -.-..-. -.....- -...-.. -...-.- -.-..-. -..... -..-..- -..... -.....-
-..--.- -..... -.-..-. -...-.- -.....- -..--.. -..--.. -.--..- -..... -.-..-.
-...-.- -.....- -..--.. -..--.. -.--..- -..... -.-..-- -..---- -.-..-. -.-..-
. -.--..-

Problem #11
60 Points

11. Pankaj

Program Name: Pankaj.java **Input File: pankaj.dat**

Test Input File: (indentations are continuations of long lines)

```
11
A,B,C,D,E,F,G,H,I,J,K,L
A<->E,A<->F,A<->G,A<->H,A<->I,A<->J,A<->K,A<->L,B<->E,B<->F,B<->G,B<->H,B<-
   >I,B<->J,B<->K,B<->L,C<->E,C<->F,C<->G,C<->H,C<->I,C<->J,C<->K,C<->L,D<-
   >E,D<->F,D<->G,D<->H,D<->I,D<->J,D<->K,D<->L
A,B,C,D,E,F,G,H,I,J,K,L
A<->E,A<->F,A<->G,A<->H,A<->I,A<->J,A<->K,A<->L,B<->E,B<->F,B<->G,B<->H,B<-
   >I,B<->J,B<->K,B<->L,C<->E,C<->F,C<->G,C<->H,C<->I,C<->J,C<->K,C<->L,D<-
   >E,D<->F,D<->G,D<->H,D<->I,D<->J,D<->K,D<->L,G<->H
A,B,C,D,E,F,G,H
A<->B,A<->D,A<->E,B<->F,B<->C,C<->G,C<->D,D<->H,H<->E,E<->F,F<->G
A,B,C,D,E,F,G,H
A<->B,A<->D,A<->E,C<->F,B<->C,C<->G,C<->D,D<->H,H<->E,E<->F,F<->G
A,B,C,D,E,F,G
A<->F,B<->F,C<->E,C<->G,D<->G
A,B,C,D,E,F,G
A<->F,B<->F,C<->E,C<->G,D<->G,A<->E
A,B,C,D,E,F,G
A<->F,B<->F,C<->E,C<->G,D<->G,A<->D
A,B,C,D,E,F,G
A<->F,B<->F,C<->E,C<->G,D<->G,A<->D,B<->G
Alex,Pete,Bob,Quinn,Cade,Reid,Dave
Alex<->Pete,Alex<->Quinn,Alex<->Reid,Bob<->Pete,Bob<->Quinn,Bob<->Reid,Cade<-
   >Pete,Cade<->Quinn,Cade<->Reid,Dave<->Pete,Dave<->Quinn,Dave<->Reid
Alex,Pete,Bob,Quinn,Cade,Reid,Dave
Alex<->Pete,Alex<->Quinn,Alex<->Reid,Bob<->Pete,Bob<->Quinn,Bob<->Reid,Cade<-
   >Pete,Cade<->Quinn,Cade<->Reid,Dave<->Pete,Dave<->Quinn,Dave<->Reid,Alex<-
   >Dave
Alex,Pete,Bob,Quinn,Cade,Reid,Dave
Alex<->Dave
```

Test Output to Screen:

```
Test case 1: possible
Test case 2: impossible
Test case 3: possible
Test case 4: impossible
Test case 5: possible
Test case 6: possible
Test case 7: possible
Test case 8: impossible
Test case 9: possible
Test case 10: impossible
Test case 11: possible
```

Problem #12
60 Points

12. Shirley

Program Name: Shirley.java **Input File: shirley.dat**

Test Input File:

```
9
6 7
1859 739  0    1101 1569 312  635
1069 1789 164  678  568  1282 1633
1399 1780 56   0    183  234  1835
0    0    973  1155 1157 0    490
1750 1523 1714 388  670  0    1256
1926 1342 1342 1397 689  0    965
3 5
1865 201  1164 1265 248
164  1933 971  1030 166
1828 1624 1654 1136 1693
2 2
1234 0
0    1999
10 10
973  739  339  1187 0    56   734  369  468  213
1356 853  1345 0    1043 1688 1625 925  1792 1698
1772 188  688  860  0    841  706  208  1332 1861
1460 1186 1221 220  469  1843 1375 1005 1677 1301
401  1433 437  839  182  462  85   431  309  50
1015 164  1114 227  1811 962  1764 1376 498  190
1786 1264 1968 611  239  1635 539  1821 475  1151
1648 94   1362 163  1388 674  396  1067 618  440
743  420  1807 893  182  1209 896  1756 1901 1308
1537 1961 1153 196  329  1007 1401 734  1392 737
10 10
858  1570 1540 1414 1966 250  1353 418  651  1912
1691 0    0    0    0    0    0    0    0    931
487  0    1569 250  249  249  0    1665 0    1245
1153 0    1178 176  1686 660  183  250  0    250
1284 0    777  233  1175 1867 134  824  0    301
1128 0    250  237  250  1644 156  1278 0    805
1542 0    1195 167  1491 1865 249  833  0    1814
561  0    1141 0    249  249  0    1666 0    318
1423 0    0    0    0    0    0    0    0    801
822  1766 1264 250  1288 1837 1263 1440 654  418
10 10
1408 1042 1962 1444 1249 458  1137 685  1918 702
287  439  1112 906  1818 1161 979  615  365  447
1297 325  1905 1800 804  1291 1110 547  250  923
1308 844  1106 1148 295  1286 1793 788  888  1043
1428 1091 791  268  1899 966  1901 546  263  1518
1769 1736 1319 1277 606  554  350  251  411  1928
1986 1531 1441 1545 646  637  1038 1675 317  838
275  1077 1598 622  844  316  1950 1537 531  256
487  543  1597 327  1137 1807 253  1197 1327 1972
1770 1690 822  1068 379  250  1027 1032 1803 801
15 15
47   1375 382  23   1719 1051 1534 783  159  654  13   737  516  156  1051
1913 851  1760 100  1880 1527 278  1295 1793 1581 1022 1937 219  1934 477
555  1882 1102 1063 644  1359 1127 261  486  1398 500  217  1939 1917 743
469  1919 791  1408 1457 1153 1847 224  47   889  1370 394  583  353  1506
33   1223 712  764  608  976  1851 1516 1528 1347 1347 1197 1297 178  1037
```

```
302  739  1468 199  504  327  386  1488 754  1594 860  159  1964 910  133
762  1651 229  1767 445  671  1875 351  123  664  1005 1445 1076 1121 1
912  1702 1821 524  33   1468 1293 967  859  1056 1234 1985 642  229  65
762  2000 219  1004 184  128  1006 984  1698 1822 1529 971  1037 1213 377
1095 236  1641 1164 1395 54   829  1595 1277 948  171  1319 1870 954  1544
384  4    96   801  1478 725  1778 253  775  320  1672 1682 1878 830  557
1871 941  348  1013 1081 835  172  1931 162  730  1486 1981 25   730  1028
586  1164 1445 1576 1343 744  1769 644  1493 794  1336 620  4    1559 1430
39   396  818  1824 629  1085 1460 1612 279  1425 569  733  1863 1322 1517
465  1604 953  100  325  681  970  718  1212 316  835  356  5    963  1774
10 9
1905 801  0    0    1414 0    0    735  649
1046 1004 0    1132 0    1220 0    297  395
0    0    1209 0    1488 0    537  0    1499
335  1233 0    698  1488 738  0    0    388
812  0    1488 1441 1441 1727 529  0    1638
398  0    0    1732 1390 703  0    462  0
908  1336 691  0    365  0    161  807  0
0    0    1997 1509 0    1468 1656 791  0
1686 1507 0    1234 1505 0    0    1480 756
456  1382 0    208  248  920  0    1834 1495
7 5
1664 0    1525 0    1140
0    1691 0    1071 0
1864 0    0    0    1841
0    0    2000 0    0
1015 0    0    0    1312
0    1999 0    2000 0
565  1015 0    1259 723
```

Test Output to Screen:

```
Case #1:
16026 31.0
12324 28.6
8635 14.3
^^^^^^^^^^^^
Case #2:
14298 66.7
NONE
NONE
^^^^^^^^^^^^
Case #3:
NONE
NONE
NONE
^^^^^^^^^^^^
Case #4:
53239 49.0
36371 32.0
NONE
^^^^^^^^^^^^
Case #5:
38668 36.0
10638 8.0
6516 6.0
^^^^^^^^^^^^
Case #6:
103706 100.0
NONE
NONE
^^^^^^^^^^^^
Case #7:
211509 84.0
NONE
NONE
^^^^^^^^^^^^
Case #8:
15228 14.4
11958 12.2
10749 10.0
^^^^^^^^^^^^
Case #9:
3982 8.6
3579 8.6
NONE
^^^^^^^^^^^^
```