**Crozzle TXT file**

The format of a crozzle TXT file is described below. An example can be seen in the file “Test 1 Crozzle.txt”.

1. Lines contain zero or more white spaces are allowed.
2. Lines containing a comment are allowed. The symbol // will indicate the start of a comment, the end of line will represent the end of a comment. It will be possible to mix data and a comment on one line. For example:

ROWS=10 // A crozzle of 10 rows.

1. There will be a line containing the file name of a configuration file. This can be an absolute or a relative file name. Two examples are:

CONFIGURATION\_FILE="C:\\temp\config.txt" // absolute

CONFIGURATION\_FILE=".\..\config.txt" // relative

1. There will be a line containing the file name of a file that contains a comma separated list of words. This file name can also be absolute or relative. Two examples are:

WORDLIST\_FILE="C:\\temp\words.txt" // absolute

WORDLIST\_FILE=".\..\words.txt" // relative

1. There will be a line containing a positive integer representing the actual number of rows in the crozzle. For example:

ROWS=10

1. There will be a line containing a positive integer representing the actual number of columns in the crozzle. For example:

COLUMNS=10

1. For each horizontal word displayed in a crozzle (as depicted in Figure 1) there is a line of data. For example:

ROW=2,OSCAR,9

Such a line includes the following three kinds of values, separated by commas:

* 1. the orientation identifier, equals symbol, and the row number. This number indicates which row the word is placed: the first row is represented by the number 1,
  2. the actual word, and
  3. the column number of the first letter of that word: the first column is represented by the number 1.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | R | O | B | E | R | T |  |  |  |  |  |  |  |  |
|  |  |  | I |  |  |  |  | O | S | C | A | R |  | W |
|  | J | I | L | L |  |  |  |  |  | H |  |  |  | E |
|  | E |  | L |  |  |  |  | H |  | A |  |  |  | N |
|  | S |  |  |  |  |  |  | A |  | R |  |  |  | D |
|  | S |  | M | A | R | Y |  | R |  | L | A | R | R | Y |
|  | I |  | A |  | O |  |  | R |  | E |  |  |  |  |
|  | C |  | R |  | G | A | R | Y |  | S |  |  |  |  |
| J | A | C | K |  | E |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | R |  |  |  |  |  |  |  |  |  |

Figure 1.

1. For each vertical word displayed in a crozzle (as depicted in Figure 1) there is a line of data. For example:

COLUMN=11,CHARLES,2

Such a line includes the following three kinds of values, separated by commas:

1. the orientation identifier, equals symbol, and the column number. This number indicates which column the word is placed: the first column is represented by the number 1,
2. the actual word, and
3. the row number of the first letter of that word: the first row is represented by the number 1.
4. As there is no predefined ordering to these data items, the following 2 crozzle file examples are valid.

|  |  |
| --- | --- |
| CONFIGURATION\_FILE=".\Config.txt"  WORDLIST\_FILE=".\Words.txt"  ROWS=10  COLUMNS=15  ROW=1,ROBERT,2  ROW=3,JILL,2  COLUMN=2,JESSICA,3  COLUMN=4,BILL,1 | COLUMNS=15  ROWS=10  WORDLIST\_FILE=".\Words.txt"  CONFIGURATION\_FILE=".\Config.txt"  COLUMN=4,BILL,1  COLUMN=2,JESSICA,3  ROW=3,JILL,2  ROW=1,ROBERT,2 |
| **Crozzle file example 1.** | **Crozzle file example 2.** |

**Configuration TXT file**

The format of a configuration TXT file is described below. An example can be seen in the file “Test 1 Configuration.txt”.

1. Lines contain zero or more white spaces are allowed.
2. Lines containing a comment are allowed. The symbol // will indicate the start of a comment, the end of line will represent the end of a comment. It will be possible to mix data and a comment on one line. For example:

LOGFILE\_NAME=".\..\log.txt" // relative file name

1. There will be a line containing the file name of a log file. This can be an absolute or relative file name. Two examples are:

LOGFILE\_NAME="C:\\temp\log.txt" // absolute file name

LOGFILE\_NAME=".\..\log.txt" // relative file name

1. There will be two lines, each containing a positive integer representing limits to the number of unique words in the word list. For example:

MINIMUM\_NUMBER\_OF\_UNIQUE\_WORDS=10

MAXIMUM\_NUMBER\_OF\_UNIQUE\_WORDS=1000

A valid word list file does not contain duplicates.

1. There will be a line containing a string representing the score of an invalid crozzle. For example:

INVALID\_CROZZLE\_SCORE="INVALID CROZZLE"

1. There will be a line containing a Boolean representing whether or not to display the crozzle using uppercase or lowercase letters. For example:

UPPERCASE=true

1. There will be a line containing a string representing a HTML style, which can be used to manage how to render a crozzle. For example:

STYLE="<style> table, td { border: 1px solid black; border-collapse: collapse; } td { width:24px; height:18px; text-align: center; } </style>"

1. There will be two lines containing colour codes representing the background colour of empty and non-empty crozzle cells. For example:

BGCOLOUR\_EMPTY\_TD=#777777

BGCOLOUR\_NON\_EMPTY\_TD=#ffffff

1. There will be four lines containing limits on the size of a crozzle’s grid. For example:

MINIMUM\_NUMBER\_OF\_ROWS=4

MAXIMUM\_NUMBER\_OF\_ROWS=400

MINIMUM\_NUMBER\_OF\_COLUMNS=8

MAXIMUM\_NUMBER\_OF\_COLUMNS=800

1. There will be four lines containing limits on the number of horizontal and vertical words within a valid crozzle. For example:

MINIMUM\_HORIZONTAL\_WORDS=1

MAXIMUM\_HORIZONTAL\_WORDS=100

MINIMUM\_VERTICAL\_WORDS=1

MAXIMUM\_VERTICAL\_WORDS=100

1. There will be four lines containing limits on the number of intersecting vertical words for each horizontal word, and the number of intersecting horizontal words for each vertical word. For example:

MINIMUM\_INTERSECTIONS\_IN\_HORIZONTAL\_WORDS=1

MAXIMUM\_INTERSECTIONS\_IN\_HORIZONTAL\_WORDS=100

MINIMUM\_INTERSECTIONS\_IN\_VERTICAL\_WORDS=1

MAXIMUM\_INTERSECTIONS\_IN\_VERTICAL\_WORDS=100

1. There will be two lines containing limits on the number of duplicate words allowed within a crozzle. For example:

MINIMUM\_NUMBER\_OF\_THE\_SAME\_WORD=1

MAXIMUM\_NUMBER\_OF\_THE\_SAME\_WORD=1

1. There will be two lines containing limits on the number of valid disconnected groups of words that are allowed within a crozzle. For example:

MINIMUM\_NUMBER\_OF\_GROUPS=1

MAXIMUM\_NUMBER\_OF\_GROUPS=1

A maximum value of 1 indicates that all words in the crozzle are within 1 connected group of words. The crozzle in Figure 1 shows 2 disconnected groups of words; one group is shaded in yellow, the other group is shaded in orange.

1. There will be one line containing the number of points per word within a crozzle. For example:

POINTS\_PER\_WORD=10

The seven horizontal and seven vertical words in the crozzle depicted in Figure 1 would score 70+70=140 points, based on this example.

1. There will be one line containing the number of points per letter, where each such letter is at the intersection of a horizontal and vertical word. For example:

INTERSECTING\_POINTS\_PER\_LETTER="A=1,B=2,C=2,D=2,E=1,F=2,G=2,H=2,I=1,J=4,K=4,L=4,M=4,N=4,O=1,P=8,Q=8,R=8,S=8,T=8,U=1,V=16,W=16,X=32,Y=32,Z=64"

The four letters M, R, L and Y are the intersecting letters on the 6th row in Figure 1. These letters would score 4+8+4+32=48 points, based on this example.

1. There will be one line containing the number of points per letter, where each such letter is not at the intersection of a horizontal and vertical word. For example:

NON\_INTERSECTING\_POINTS\_PER\_LETTER="A=0,B=0,C=0,D=0,E=0,F=0,G=0,H=0,I=0,J=0,K=0,L=0,M=0,N=0,O=0,P=0,Q=0,R=0,S=0,T=0,U=0,V=0,W=0,X=0,Y=0,Z=0"

The seven letters S, A, Y, R, A, R and R are the non-intersecting letters on the 6th row in Figure 1. These letters would score 0 points, based on this example.

**Word list TXT file**

The format of a word list TXT file is described below. An example can be seen in the file “Test 1 Wordlist.txt”.

1. Comma separated words appear on line 1.
2. A valid word list file does not contain duplicates.