Design Strategies Week 4: Word Searches
Presented by Prof. Fred Martin and Mark Sherman

Your task:

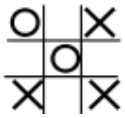
Develop a process to find all the straight-line words that are hidden in a grid.

Example: Tic Tac Toe

Solving tic-tac-toe is pretty easy. There is a simple series of rules, which if you follow, will guarantee you won't lose. You can think of these rules as a *strategy*, but when you follow them all strictly is can be considered an *algorithm.* An algorithm is just a set of instructions that make up a process.

Instruction Set for Tic Tac Toe

1. If you have two in a row, and the third is empty, take the empty to make 3.
2. If the opponent has two in a row, and the third is empty, take the empty to block.
3. If a fork can be created, do it. *(In the figure to the right X has created a fork, where O needs to block in two places at once.)*



4. If the opponent is about to make a fork, block the fork.
5. If the center is open, take it.
6. If a corner is open, take it.
7. If a side is open, take it.

> **Algorithm**
>
> A process or set of rules to be followed in calculations or other problem-solving operations.

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The Word Search

Y	E	S	L	F
M	N	H	R	I
P	T	O	U	R
A	C	E	M	E

Word list:

- Ace
- Fire
- Shoe
- Tour
- Yes

Did you find all the words?

What did you do to find them all?

Did the words just "jump out at you?" …. What if they don't? How can you know for sure that you found *all* the words?

Your Algorithm

Write down any rules or strategies you used.

1.

2.

3.

4.

5.

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Your Algorithm for Word Search

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

If you need more rules, grab some more paper and add your own numbers. You can have as many as you want.