

Documentation:

The Program has 3 main Classes: Grid, State, Rule . It simulates Childrens' Puzzle Book.

Main points in the Code:

Main function: create a Grid, an array of words (from the Input) and an Initiate state and call flailWildy function.

flailWildy: main while loop which checks each time if the game was over and if not, locates in the grid the next word from the "bank".

allCandidates: there are 8 possible directions for each word and MxN initiate places on the grid. So, it calls precondition function 8MN times and create a list with possible rules for apply.

precondition: A Boolean type function which checks:

1. if writing the word on the grid is "out of bounds"
2. if writing the word on the grid is "overlap another word"

applyRule: locates the word on the grid by the following steps:

1. Creating a new updates list of words
2. deep copy of the previous grid
3. placing the current word in the grid
4. Creating a new State and return it.

Outputs:

```
+---+---+---+---+---+---+---+---+---+
|  |g|  |  |m|u|m|i|t|p|o|m|
+---+---+---+---+---+---+---+---+---+
|  |r|  |c|  |l|  |  |  |d|i|
+---+---+---+---+---+---+---+---+---+
|k|a|  |i|l|o|y|  |c|e|l|s|
+---+---+---+---+---+---+---+---+---+
|c|p|a|t|i|c|r|  |a|  |a|s|
+---+---+---+---+---+---+---+---+---+
|a|h|g|s|s|a|t|d|n|h|n|i|
+---+---+---+---+---+---+---+---+---+
|r|s|e|i|p|l|e|  |n|c|o|o|
+---+---+---+---+---+---+---+---+---+
|t|e|n|r|  |n|m|  |i|r|i|n|
+---+---+---+---+---+---+---+---+---+
|k|a|t|u|d|  |m|  |b|a|t|a|
+---+---+---+---+---+---+---+---+---+
|c|r|  |e|  |  |y|  |a|e|a|r|
+---+---+---+---+---+---+---+---+---+
|a|c|  |h|  |  |s|  |l|s|r|y|
+---+---+---+---+---+---+---+---+---+
|b|h|a|d|m|i|s|s|i|b|l|e|
+---+---+---+---+---+---+---+---+---+
|  |  |  |  |  |g|l|o|b|a|l|
+---+---+---+---+---+---+---+---+---+

remaining words:
[]
```

```
+---+---+---+---+---+---+---+---+---+
|g|  |  |  |d|n|e|d|a|e|d|  |
+---+---+---+---+---+---+---+---+---+
|r|  |y|r|a|n|o|i|s|s|i|m|
+---+---+---+---+---+---+---+---+---+
|a|a|h|e|u|r|i|s|t|i|c|  |
+---+---+---+---+---+---+---+---+---+
|p|  |d|b|a|c|k|t|r|a|c|k|
+---+---+---+---+---+---+---+---+---+
|h|l|c|m|m|u|m|i|t|p|o|s|
+---+---+---+---+---+---+---+---+---+
|s|t|a|  |i|  |l|  |  |  |e|
+---+---+---+---+---+---+---+---+---+
|e|  |n|n|  |s|  |a|  |  |a|
+---+---+---+---+---+---+---+---+---+
|a|  |n|e|o|  |s|  |b|  |r|
+---+---+---+---+---+---+---+---+---+
|r|  |i|  |g|i|p|i|  |o|  |c|
+---+---+---+---+---+---+---+---+---+
|c|  |b|  |  |a|t|s|b|  |l|h|
+---+---+---+---+---+---+---+---+---+
|h|  |a|  |  |  |a|i|l|  |g|
+---+---+---+---+---+---+---+---+---+
|  |  |l|l|a|c|o|l|r|l|e|  |
+---+---+---+---+---+---+---+---+---+

remaining words:
['symmetry']
```

```
+---+---+---+---+---+---+---+---+---+
| | | | | | | a | p | s | i | l |
+---+---+---+---+---+---+---+---+---+
| | | | | | | g | | | | |
+---+---+---+---+---+---+---+---+---+
| | | | g | | e | | | | |
+---+---+---+---+---+---+---+---+---+
| | | | l | c | a | n | n | i | b | a | l |
+---+---+---+---+---+---+---+---+---+
| | | | o | | t | | | | |
+---+---+---+---+---+---+---+---+---+
| l | | | b | | | | | | |
+---+---+---+---+---+---+---+---+---+
| o | | | a | d | n | e | d | a | e | d | |
+---+---+---+---+---+---+---+---+---+
| c | | | l | | | | | | |
+---+---+---+---+---+---+---+---+---+
| a | d | m | i | s | s | i | b | l | e | | |
+---+---+---+---+---+---+---+---+---+
| l | | b | a | c | k | t | r | a | c | k | |
+---+---+---+---+---+---+---+---+---+
| | | | c | i | t | s | i | r | u | e | h |
+---+---+---+---+---+---+---+---+---+
| g | r | a | p | h | s | e | a | r | c | h | |
+---+---+---+---+---+---+---+---+---+

remaining words:
['missionary', 'optimum', 'rational', 'search', 'symmetry']
```

```
+---+---+---+---+---+---+---+---+---+
| | | | d | g | | l | | | | |
+---+---+---+---+---+---+---+---+---+
| | e | k | e | r | h | i | | | | |
+---+---+---+---+---+---+---+---+---+
| m | l | c | a | a | e | s | g | | | |
+---+---+---+---+---+---+---+---+---+
| i | b | a | d | p | u | p | l | | | |
+---+---+---+---+---+---+---+---+---+
| s | i | r | e | h | r | o | o | | | a |
+---+---+---+---+---+---+---+---+---+
| s | s | t | n | s | i | p | b | | | g | |
+---+---+---+---+---+---+---+---+---+
| i | s | k | d | e | s | t | a | | e | | l |
+---+---+---+---+---+---+---+---+---+
| o | i | c | | a | t | i | l | n | | a | |
+---+---+---+---+---+---+---+---+---+
| n | m | a | | r | i | m | t | | c | | |
+---+---+---+---+---+---+---+---+---+
| a | d | b | | c | c | u | | o | | | |
+---+---+---+---+---+---+---+---+---+
| r | a | | | h | | m | l | | | | |
+---+---+---+---+---+---+---+---+---+
| y | l | a | b | i | n | n | a | c | | | |
+---+---+---+---+---+---+---+---+---+

remaining words:
['rational', 'search', 'symmetry']
```