

# M05017: Word Finder Puzzle



R	O	R	A	N	G	E	C	H	R	B
G	W	A	D	I	B	A	N	A	N	A
A	W	A	T	E	R	M	E	L	O	N
V	M	A	G	O	M	A	P	P	O	B
O	Q	L	R	E	A	O	M	P	E	A
C	Y	E	A	T	P	E	A	E	P	A
A	B	M	P	I	P	G	R	A	M	M
D	P	O	E	P	L	R	K	R	A	A
O	R	N	S	A	E	N	A	R	E	N
V	P	I	N	E	A	P	P	L	E	G
C	H	E	R	R	Y	X	Z	A	E	O

## Planning the Logic:

Your script should:

- search the row and column locations separately using 2 loop structures
- look for the word in forwards and backwards directions
- use test locations to check each potential location of the word
- Once the word has been found, store the location in 'word\_loc' and quit searching

`% Given Code:`

```
word = 'mango';  
n_word = numel(word);  
word_db = double(word);  
  
puzzle_size = 12;  
puzzle = CreateWordPuzzle(puzzle_size, word);
```

`% We will use a 'searching' variable to indicate if the code needs to continue searching for the word`

```
searching = true;
```

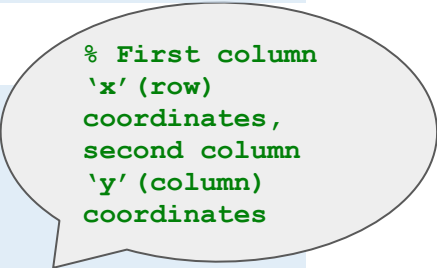
`% If the word is found in the first direction searched, searching will be made false and the second loop will not run`

`% Start by initializing your output variable 'word_loc'`

```
word_loc = zeros(numel(word),2);
```

```
word_loc =
```

0	0
0	0
0	0
0	0
0	0



`% First column  
'x' (row)  
coordinates,  
second column  
'y' (column)  
coordinates`

R	O	R	A	N	G	E	C	H	R	B
G	W	A	D	I	B	A	N	A	N	A
A	W	A	T	E	R	M	E	L	O	N
V	M	A	G	O	M	A	P	P	O	B
O	Q	L	R	E	A	O	M	P	E	A
C	Y	E	A	T	P	E	A	E	P	A
A	B	M	P	I	P	G	R	A	M	M
D	P	O	E	P	L	R	K	R	A	A
O	R	N	S	A	E	N	A	R	E	N
V	P	I	N	E	A	P	P	L	E	G
C	H	E	R	R	Y	X	Z	A	E	O

% Starting by searching the columns...

```

for ii=1:puzzle_size
    for jj = 1:(puzzle_size-n_word+1)
        col = puzzle(:,ii);
        loc = jj:(jj+n_word-1);
        test = col(loc);
        if isequal(word_db, test')
            word_loc(:,1) = loc;
            word_loc(:,2) = ii;
            searching = false;
            break
        elseif isequal(word_db, flip(test'))
            word_loc(:,1) = flip(loc);
            word_loc(:,2) = ii;
            searching = false;
            break
        end
    end
end
end

```

% Make sure to transpose your test word when searching in a column direction

R	O	R	A	N	G	E	C	H	R	B
G	W	A	D	I	B	A	N	A	N	A
A	W	A	T	E	R	M	E	L	O	N
V	M	A	G	O	M	A	P	P	O	B
O	Q	L	R	E	A	O	M	P	E	A
C	Y	E	A	T	P	E	A	E	P	A
A	B	M	P	I	P	G	R	A	M	M
D	P	O	E	P	L	R	K	R	A	A
O	R	N	S	A	E	N	A	R	E	N
V	P	I	N	E	A	P	P	L	E	G
C	H	E	R	R	Y	X	Z	A	E	O

% Searching rows next...

if searching

for ii=1:puzzle\_size

for jj = 1:(puzzle\_size-n\_word+1)

row = puzzle(ii,:);

loc = jj:(jj+n\_word-1);

test = row(loc);

if isequal(word\_db,test)

word\_loc(:,1) = ii;

word\_loc(:,2) = loc;

break

elseif isequal(word\_db,flip(test))

word\_loc(:,1) = ii;

word\_loc(:,2) = flip(loc);

break

end

end

end

end

	1	2	3	4	5	6	7	8	9	10	11
1	R	O	R	A	N	G	E	C	H	R	B
2	G	W	A	D	I	B	A	N	A	N	A
3	A	W	A	T	E	R	M	E	L	O	N
4	V	M	A	G	O	M	A	P	O	B	
5	O	Q	L	R	E	A	O	M	P	E	A
6	C	Y	E	A	T	P	E	A	E	P	A
7	A	B	M	P	I	P	G	R	A	M	M
8	D	P	O	E	P	L	R	K	R	A	A
9	O	R	N	S	A	E	N	A	R	E	N
10	V	P	I	N	E	A	P	P	L	E	G
11	C	H	E	R	R	Y	X	Z	A	E	O

% Column Direction:

word\_loc =

5	6
6	6
7	6
8	6
9	6

% Row Direction:

word\_loc =

10	6
10	7
10	8
10	9
10	10