Lab_07 Sort Design

Pseudocode

```
user_file <- GET file containing a list of words
READ user_file as json_user_file
words <- load(json_user_file)                    # 1

SET i_pivot <- length of words - 1               # 2

WHILE i_pivot > 0

    SET i_largets <- first item of words         # 4

    FOR i_check ... words before i_pivot         # 5
        IF i_check > i_largest                   # 5.1
            SET i_largest <- i_check

    IF i_largest > words[i_pivot]
        SWAP words[i_pivot] and i_largest        # 6

    SET i_pivot - 1                              # 7

PUT words                                        # 8
```

Algorithmic Efficiency

$O(n^2)$

The FOR loop will execute dependent on the size of n then be repeated by the WHILE loop dependent on the size of n as well. So my assumption would be $O(n^2)$

Program Trace

Row	words	i_pivot	words[i_pivot]	i_largest	i_check
1	["26", "6", "90", "55"]	/	/	/	/
2	["26", "6", "90", "55"]	3	55	/	/
4	["26", "6", "90", "55"]	3	55	26	/
5	["26", "6", "90", "55"]	3	55	26	26
5	["26", "6", "90", "55"]	3	55	26	6
5	["26", "6", "90", "55"]	3	55	26	90
5.1	["26", "6", "90", "55"]	3	55	90	90
6	["26", "6", "55", "90"]	3	90	90	90
7	["26", "6", "55", "90"]	2	55	90	90
4	["26", "6", "55", "90"]	2	55	26	26
5	["26", "6", "55", "90"]	2	55	26	26
5	["26", "6", "55", "90"]	2	55	26	6
7	["26", "6", "55", "90"]	1	55	55	55
4	["26", "6", "55", "90"]	1	6	26	55
5	["26", "6", "55", "90"]	1	6	26	26
6	["6", "26", "55", "90"]	1	26	26	26
7	["6", "26", "55", "90"]	0	26	26	26
8	["6", "26", "55", "90"]				