Pseudocode:

get\_filename()

GET filename

RETURN filename

read\_file( filename )

READ filename into the variable ‘list’

RETURN list

sort\_list( list )

n = len(list)

FOR i 🡨 0 … n – 1 #1

FOR j 🡨 0 … n - i – 1 #2

IF list[j] > list[j+1]

list[j], list[j+1] = list[j+1], list[j] #3

PUT list

main()

filename = get\_filename()

list = read\_file( filename )

sort\_list( list )

Efficiency: O(n^2)

TRACE:

TEST CASE : [31, 72, 10, 32, 18, 95, 25, 50]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | i | j | n | list[j] | list[j+1] |
| 1 | 0 | 0 | 8 | 31 | 72 |
| 2 | 0 | 0 | 8 | 31 | 72 |
| 3 | 0 | 0 | 8 | 31 | 72 |
| 1 | 1 | 6 | 8 | 50 | 95 |
| 2 | 1 | 6 | 8 | 50 | 95 |
| 3 | 1 | 6 | 8 | 50 | 95 |
| 1 | 2 | 5 | 8 | 50 | 72 |
| 2 | 2 | 5 | 8 | 50 | 72 |
| 3 | 2 | 5 | 8 | 50 | 72 |
| 1 | 3 | 4 | 8 | 32 | 50 |
| 2 | 3 | 4 | 8 | 32 | 50 |
| 3 | 3 | 4 | 8 | 32 | 50 |
| 1 | 4 | 3 | 8 | 31 | 32 |
| 2 | 4 | 3 | 8 | 31 | 32 |
| 3 | 4 | 3 | 8 | 31 | 32 |
| 1 | 5 | 2 | 8 | 25 | 31 |
| 2 | 5 | 2 | 8 | 25 | 31 |
| 3 | 5 | 2 | 8 | 25 | 31 |
| 1 | 6 | 1 | 8 | 18 | 25 |
| 2 | 6 | 1 | 8 | 18 | 25 |
| 3 | 6 | 1 | 8 | 18 | 25 |