

Computer Science Problem of the Month

(<http://narnia.homeunix.com/~robert/PoTM/>)

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Background:

Believe it or not, the following algorithm will successfully sort an array **A** of size **length**, where A is an array of values indexed from 0 to length-1:

```
Sort(A, length):
  x = 1
  y = 2
  while x < length - 1:
    if A[x-1] < A[x]:
      swap(A,x-1, x)
      x = x - 1
      if x <= 0 :
        x = 1
    else:
      x = y
      y = y + 1
```

Problem:

Find the big-theta worst-case time complexity of this function in terms of number of comparisons.

Solutions:

To submit a solution to the problem of the month, e-mail your answer and a complete, rigorous justification of your answer, to robert@narnia.homeunix.com. I will give a cash prize of one dollar to the person who submits the first correct solution. Subsequent solvers will be recognized on the web page, but not awarded the cash prize.