Big-O Notation

Linear Search

- One single For Loop – therefore if n items it will loop n times
- O(n)

Bubble Sort

- For one pass of the algorithm – e.g. one set of comparisons it will loop n-1 times
- At worst – this would have to loop another n-1 times
- Two For loops – one nested inside the other
- Therefore technically n-1 * n-1 times
    - Roughly speaking n^2
    - Therefore: $O(n^2)$

Binary Search

- Very efficient algorithm
- O(log n)
- Links with the Binary Number System
- E.g. 1000 items would need at most 10 comparisons
- 30 items would need at most 5 comparisons