**Searching & Sorting**

**Bubble** **Sort** Pseudo-code

**Bubble** **Sort** [Python] Code

**Insertion** **Sort** Pseudo-code

**Insertion** **Sort** [Python] Code

**Sort Comparison**

Having implemented the bubble & insertion sorts using Python, below are how ‘long’ each algorithm took to execute on several different sized data sets.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sort Method | Number of Elements | | | |
| 1,000 | 10,000 | 100,000 | 1,000,000 |
| Bubble Sort |  |  |  |  |
| Insertion Sort |  |  |  |  |

My Conclusions/Notes

**Linear** **Search** Pseudo-code

**Linear** **Search** [Python] Code

**Binary** **Search** Pseudo-code

**Binary** **Search** [Python] Code

**Search Comparison**

Having implemented the linear & binary searches using Python, below are how ‘long’ each algorithm took to execute on several different sized data sets.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sort Method | Number of Elements | | | |
| 1,000 | 10,000 | 100,000 | 1,000,000 |
| Linear Search |  |  |  |  |
| Binary Search |  |  |  |  |

My Conclusions/Notes

Question: Is it fair to compare the linear search and the binary search – should you include the time taken to sort a dataset before you can use a binary search?