

Sorting

Counting steps in an algorithm

Requirements

Create file in python with a **comment** containing the academic honesty pledge as shown below. Add another, separate comment to the file containing your name

- Write python code that generates data points in a csv file as described. There needs to be at least **200** different data points for the line. Consider using lists of thousands random elements to get good results. Attach your python source in using the dropbox link in cobra learning.
- **Attach the graph you created as a image or an excel spreadsheet.**

```
# I honor Parkland's core values by affirming that I have  
# followed all academic integrity guidelines for this work.  
  
# your name
```

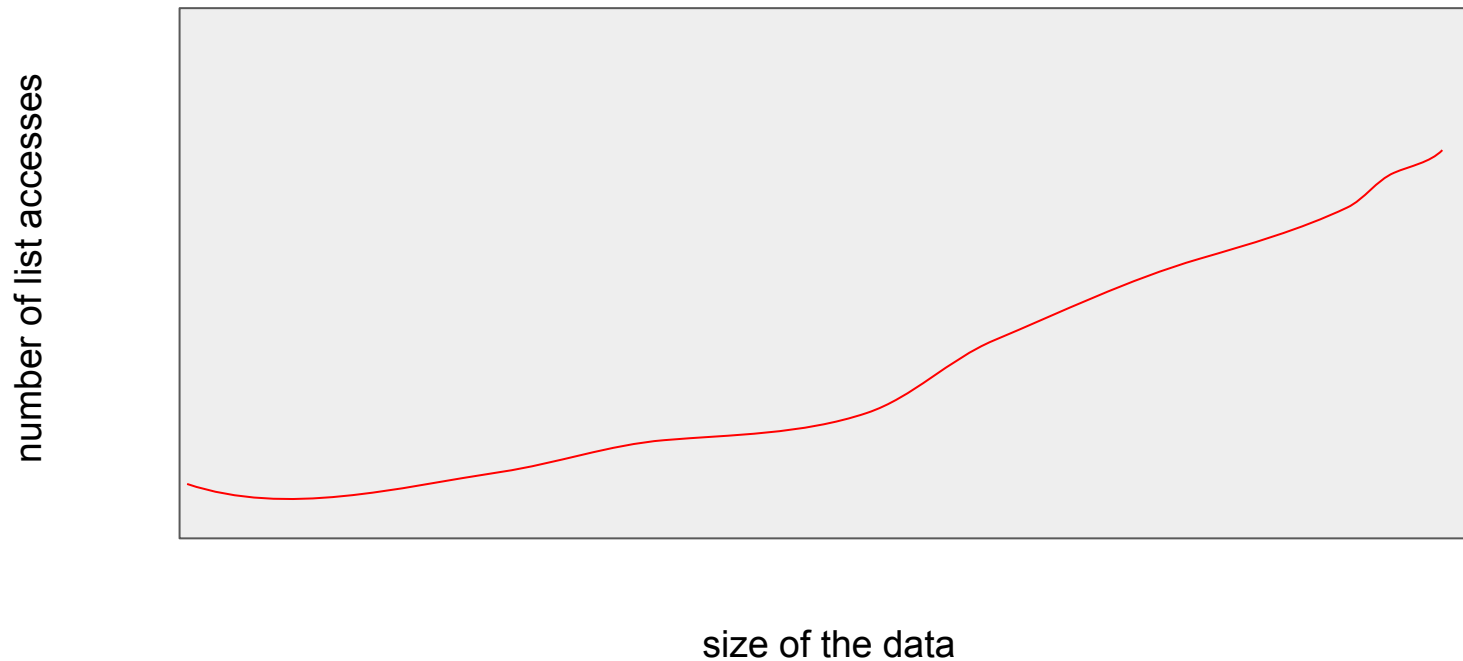
Data generation requirements

- You must use the **insertion sort** as described on a later slide.
- You need to generate a graph
- You have to count the number of **list visits** in the code.
- You'll need to run the sort 200 times with **different lists** of **different sizes** with **different random values** to get the data points. Use sizes in the thousands. (You should pick random values with very few possible duplicates)
- This code should probably take a while to run (a couple of minutes at least, but overnight would give better data)

Use this insertion sort in python as a starting point.

<https://www.geeksforgeeks.org/python-program-for-insertion-sort/>

Output sample



.csv files can be read directly into excel

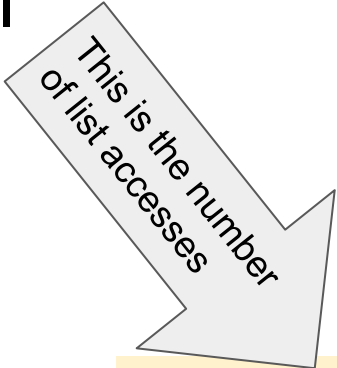
10, 123123

13, 243952

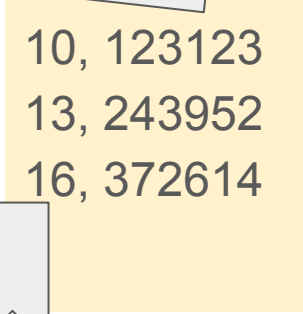
16, 372614

Use python to write to a file called 'something.csv' and read that in with excel.

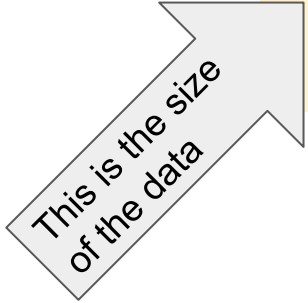
https://www.w3schools.com/python/python_file_write.asp



This is the number
of list accesses



10, 123123
13, 243952
16, 372614



This is the size
of the data

Can html tables be cut and pasted into excel?