1. Describe the alg

-**Heapsort** is acomparison-based sorting algorithm to create a sorted array (or list), and is part of the selection sort family.

-Rosetta Code

-with the heap push https://mail.python.org/pipermail/python-list/2007-March/418135.html

2. Shows testing Code

- i think it is very efficient for the data set I selected

-firstly, heap sort lag is divided into 2 parts

-1st, heap is built out of data. It is very good with dealing with large data sets just like the one I selected

-2nd, sorted array created by repeatedly removing the largest element from the heap & inserting it into the array.

The array is reconstructed after each removal. Once all objects removed from the heap, we have a sorted array.

-The array can be spilt into 2 parts, the sorted array and the heap.

-The only cost in this data extraction is the heap's invariant.

-Because of this, it is efficient for the data set chosen.

3. in the code

4. I chose this Bank & Marketing data (http://archive.ics.uci.edu/ml/datasets/Bank+Marketing), because it was a large data set, multivariate data set characteristics, real attribute characteristics, classification associated tasks and it related to business. I like that this data set is done in direct marketing campaigns, over 45211 phone calls, of a Portuguese banking institution in the goal to predict if the client will subscribe a term deposit. This is interesting to me because they are using this very abstract data approach in order to create real predictions that will affect their business.