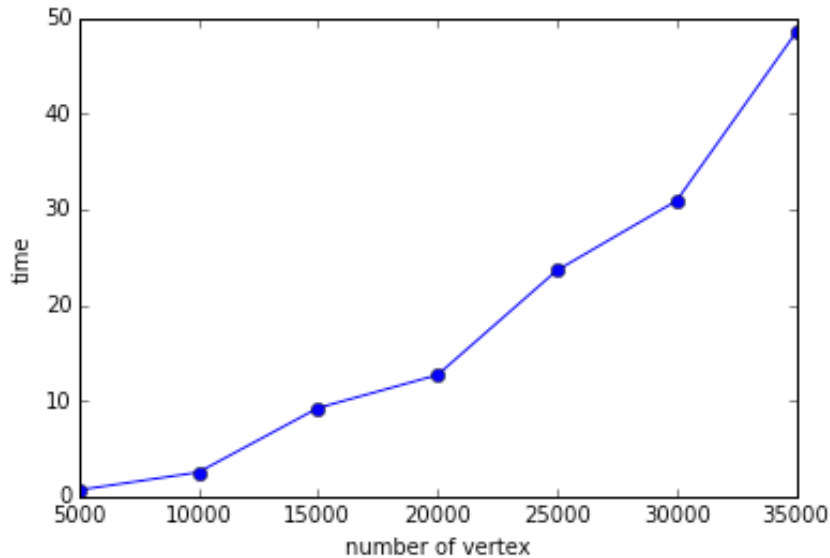


Exercise 1

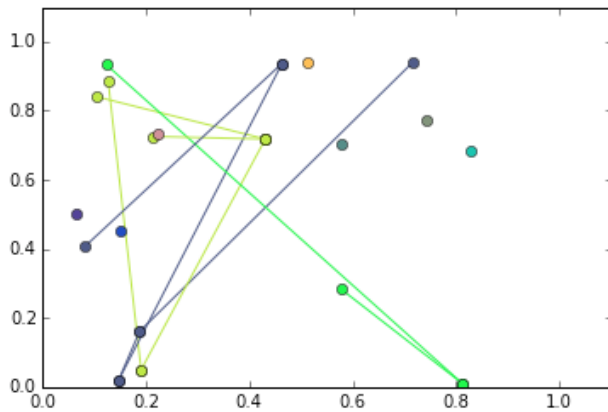
See code

Exercise 2

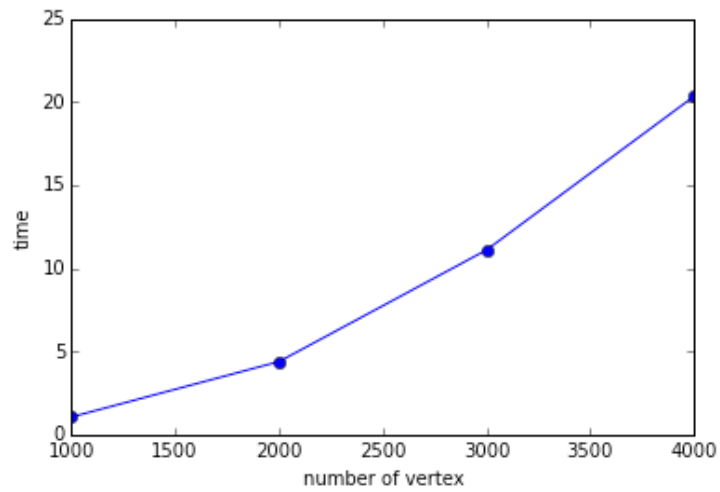
The complexity of my algorithm is $O(n)$. Time plot shows below:

**Exercise 3**

Example: $n = 20$, $e = 10$

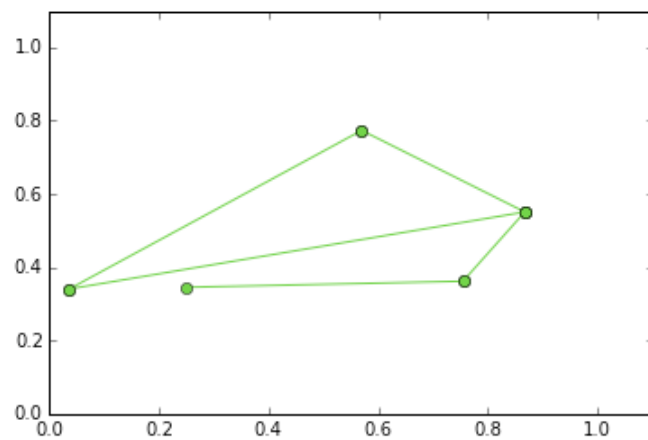
**Exercise 4**

The complexity of my algorithm is $O(n^2)$. Time plot shows below:

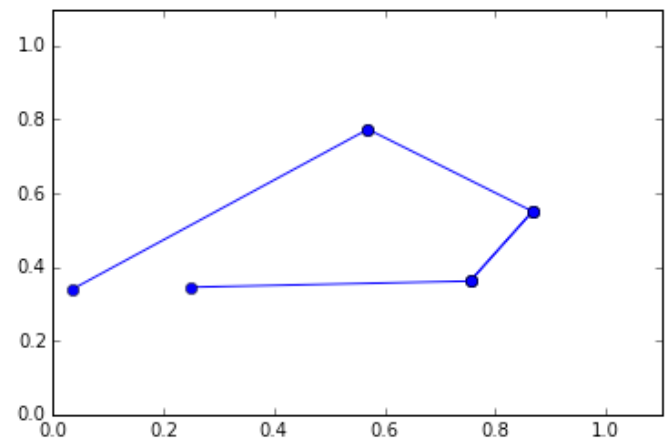


Exercise 5

Example: $n = 5$, $e = 5$, connected = True



Graph



MST