Assignment 1

Question 1a:

The Gale Shapley algorithm is known to have a time complexity of O(n^2). In our Gale Shapley Implementation, the number of hospitals and the number of students which wish to apply to the hospitals are not the same. As such, we have two variables *m* and *n*. This results in a time complexity of O(*m* x *n*).

Question 1b:

Unlike 1a, the preference list is not generated for us. As such we are required to generate our own preference list. This preference list is built around the fact that the work sites want the cheapest workers and the workers want the nearest work sites. In our implementation we assumed the staff members will propose to the workplace. The time complexity should also be O(*m* x *n*) as we are still using the gale shapely algorithm where *m* is the number of work sites available and *n* is the number of workers available.