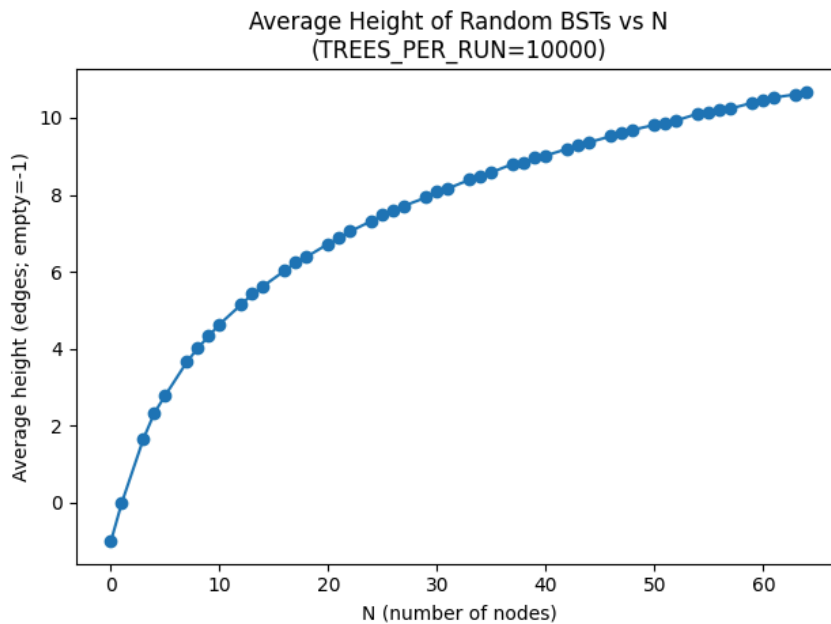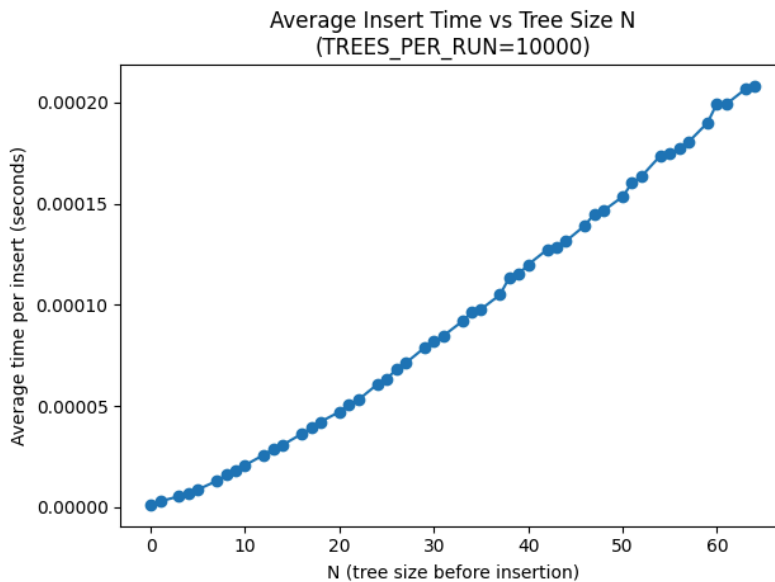n_max = 64

Average Height of Random BSTs vs N
(TREES_PER_RUN=10000)

The curve is following a O(logn) pattern, which was expected. The x-axis represents the number of nodes in a given tree compared against the y-axis which is the average height of a given tree. As the number of nodes increases, the average height of the trees slowly increases following a logn pattern.

Average Insert Time vs Tree Size N
(TREES_PER_RUN=10000)

This curve is more linear, which was not expected. The curve should represent an O(logn) growth pattern, but since the sample size of data is smaller, we are only seeing the beginning of it, which makes it look linear. If we went up to a larger value N, we would observe a log(n) running time pattern.