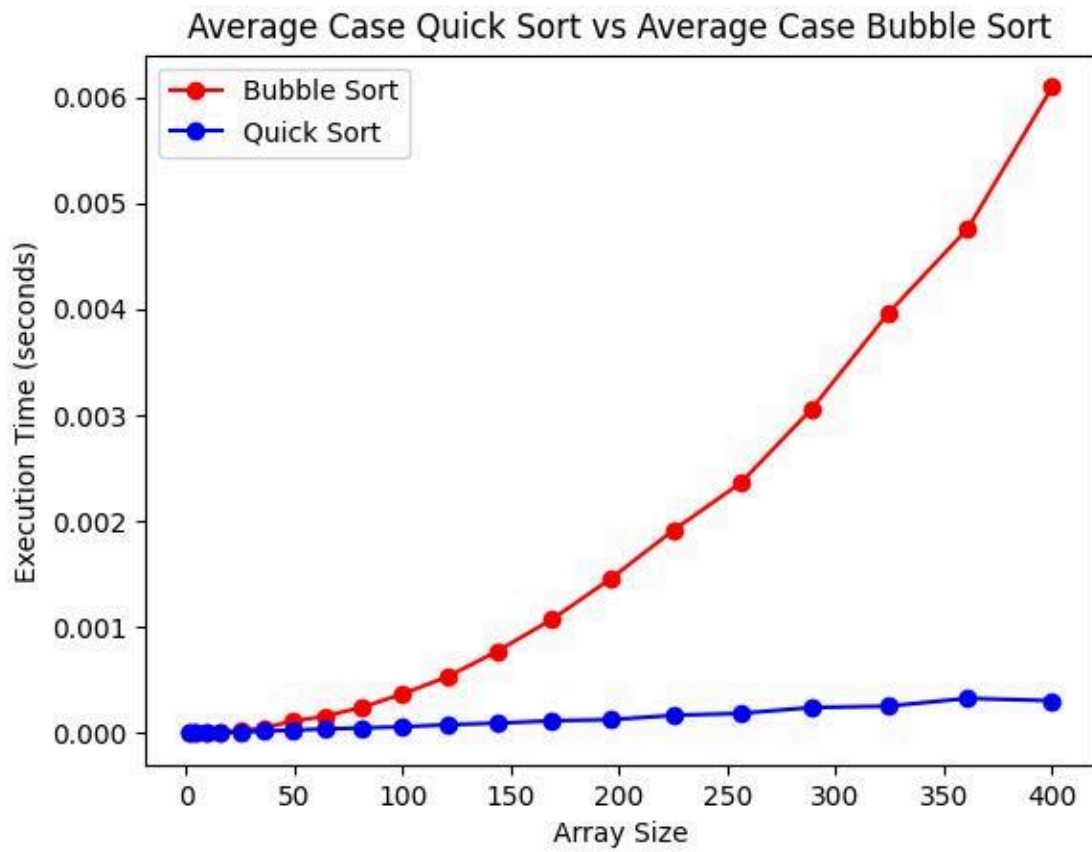
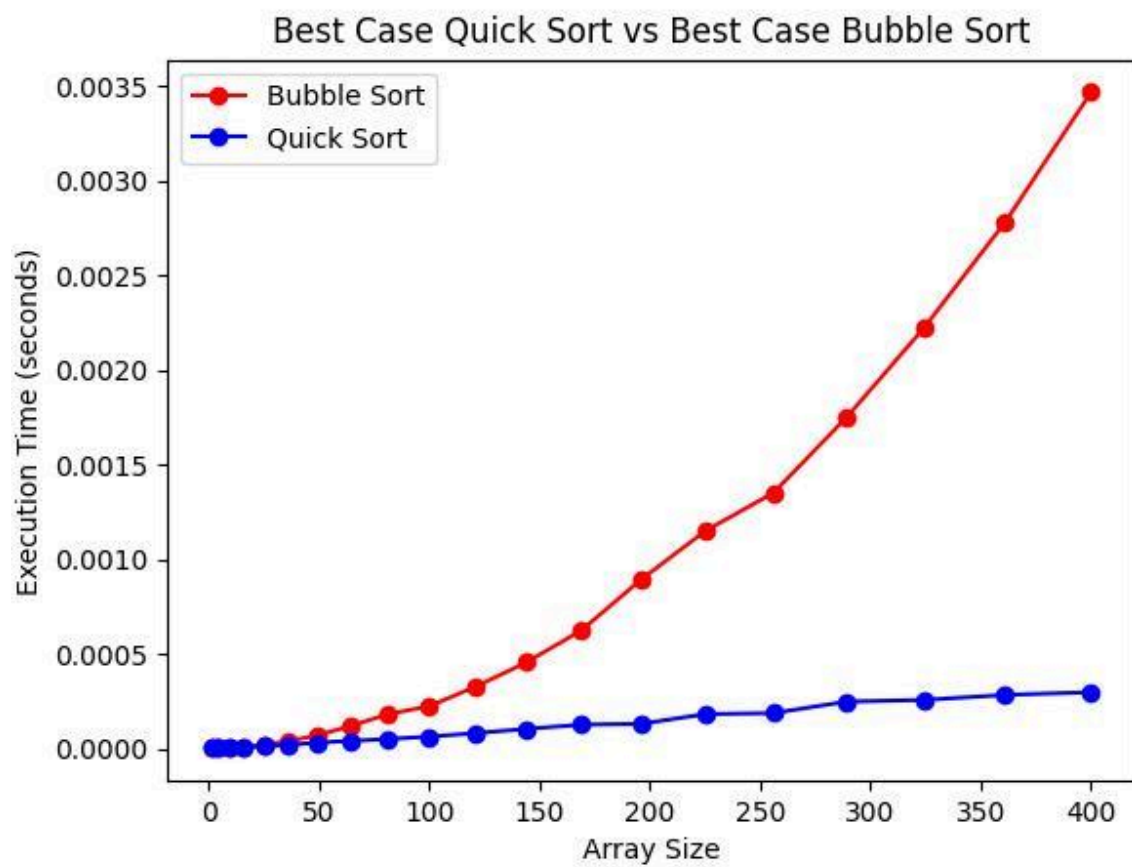
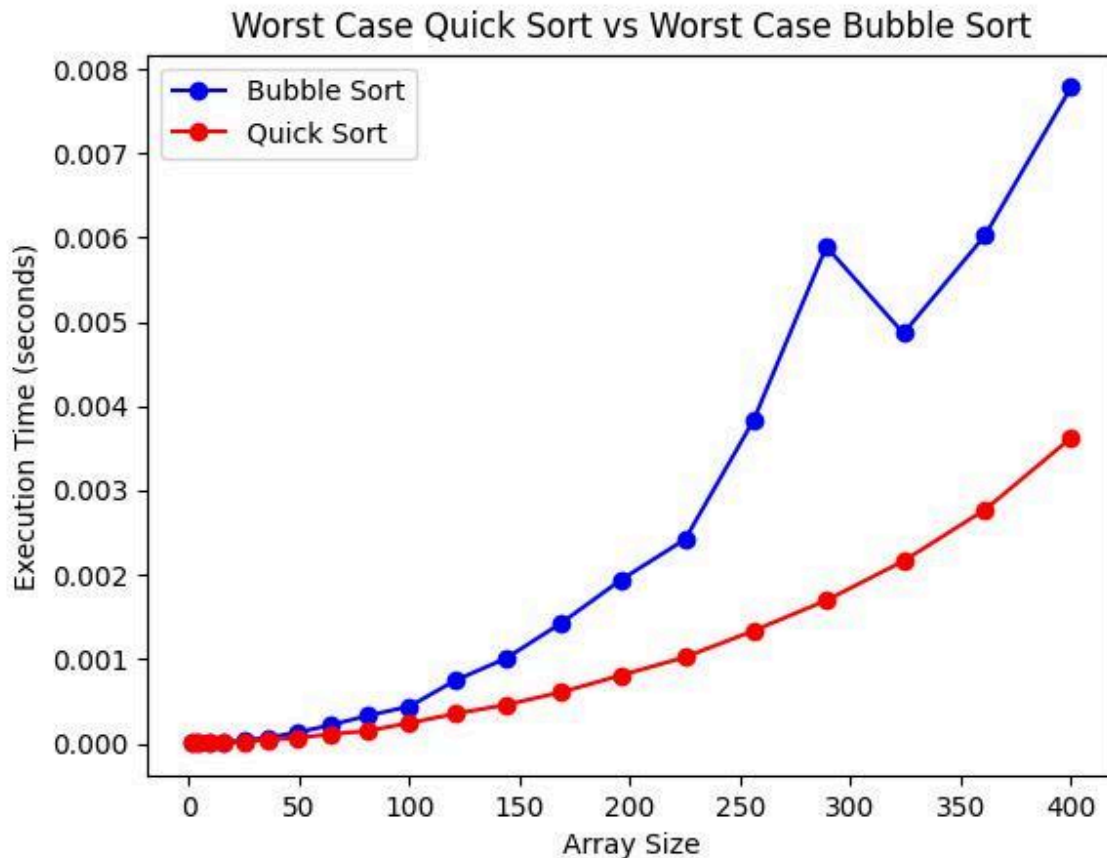


It is evident that quick sort is faster than bubble sort.

### Plots for question 3:







Three plots were created to showcase how long each algorithm took with their respective best, average and worst case. Comments are in the code as to how the test arrays were created.

## Question 4:

According to the graphs above, we can visually see that for the average case, the threshold for when the time starts to differ between quick sort and bubble sort is around when the size of the array reaches just below 50 items. Thus, we can conclude that for arrays with length < 50 (approximately), we could use bubble sort and it would not have a major impact on how fast the program runs.