DS Assignment 2: Computing Runtime

Table 1: Linear Search	
Number to Search	Time (sec)
1	0.000531772
500	0.001182376
900	0.000760978

Table 2: Sorting	
Sorting Algorithm	Time (sec)
Bubble Sort	0.02972334
Merge Sort	0.00349211
Quick Sort (Pivot as first index value)	**0.00287206**

Table 3: Binary Search	
Number	Time (sec)
1	0.000003867
500	0.000003436
900	0.000003918

Table 4: Result												
Algorithm	Time (sec) for # 1				Time (sec) for # 500				Time (sec) for # 900			
Linear Search	**0.000531772**				**0.001182376**				**0.000760978**			
Binary Search	Bubble	Merge	Quick	Best	Bubble	Merge	Quick	Best	Bubble	Merge	Quick	Best
	0.0297	0.0035	0.0029	Q.	0.0297	0.0035	0.0029	Q.	0.0297	0.0035	0.0029	Q.

Conclusion:

Linear Search performs better than Binary Search + Sorting, across all sorting methods (Table 4).

However, Binary Search is much faster (on average) than Linear Search if the data is sorted (Table 1, Table 3).