Marking Outline for Assignment 1

Implementation / Code (35 marks):

- Correctly implement binary search: **10 marks**
- Correctly implement trinary search: **10 marks**
- Correctly implement a sorting function: **10 marks**
- Documentation/style is acceptable: **5 marks**

Experiments (30 marks):

- Conduct experiments using a broad range of values of n similar to those suggested in the assignment description (1000, 2000, 4000, 8000, 16000): **5 marks**
- Effectively utilize a method for generating an array of n randomly selected integers: **5 marks**
- Conduct experiments using a set of 10*n search values: **5 marks**
- Utilize clock functions correctly for measuring the total time required to search for the k search values: **5 marks**
- Effectively utilize implemented binary search algorithm for searching for the k search values in / not in the array: **5 marks**
- Effectively utilize implemented trinary search algorithm for searching for the k search values in / not in the array: **5 marks**

Report (35 marks):

- Correctly describe the relationship between the time taken by binary vs. trinary search for searching for values in arrays of varying sizes, based upon observations made from experimental data: **15 marks**
- Correctly evaluate and describe the difference (if experimental data suggests there exists any), between searching for values existing in the array and searching for values that do not exist in the array: **10 marks**
- Correctly evaluate and describe whether or not binary search and trinary search belong to $O(\log(n))$ from experimental data: **10 marks**