

Problem 1:

Objective: Comparison of Selection Sort and Insertion Sort

Task:

1. You have to implement Selection Sort and Insertion Sort
2. Populate the input array of size n by generating random integers
3. Record the time to accomplish the sorting
4. The input size can vary from 10 to 100000.
5. Generate best case, average case and worst case scenario and record the timing
6. Plot running time of both the sorting algorithm against the input array size n (ex: $n=10,100,200,500,1000,2000,5000,10000$)

Submission:

1. Code in C++
2. You have to submit the codes and a report containing complexity analysis, machine configuration and the plots

Problem 2:

Objective: Given a set S , generate all distinct subsets of it i.e., find distinct power set of set S .
Print all distinct Subsets of a given Set.

Task:

1. You have to implement Power set algorithm
2. Populate the input set of n elements by generating random characters or digits {0-9, a-z, A-Z}
3. Record the time to accomplish the set generation
4. The number of elements can vary from 5 to 50
5. Plot running time of the algorithm against the number of elements in the set

Submission:

1. Code in C++
2. You have to submit the codes and a report containing complexity analysis, machine configuration and the plot

Deadline: Will be announced in moodle