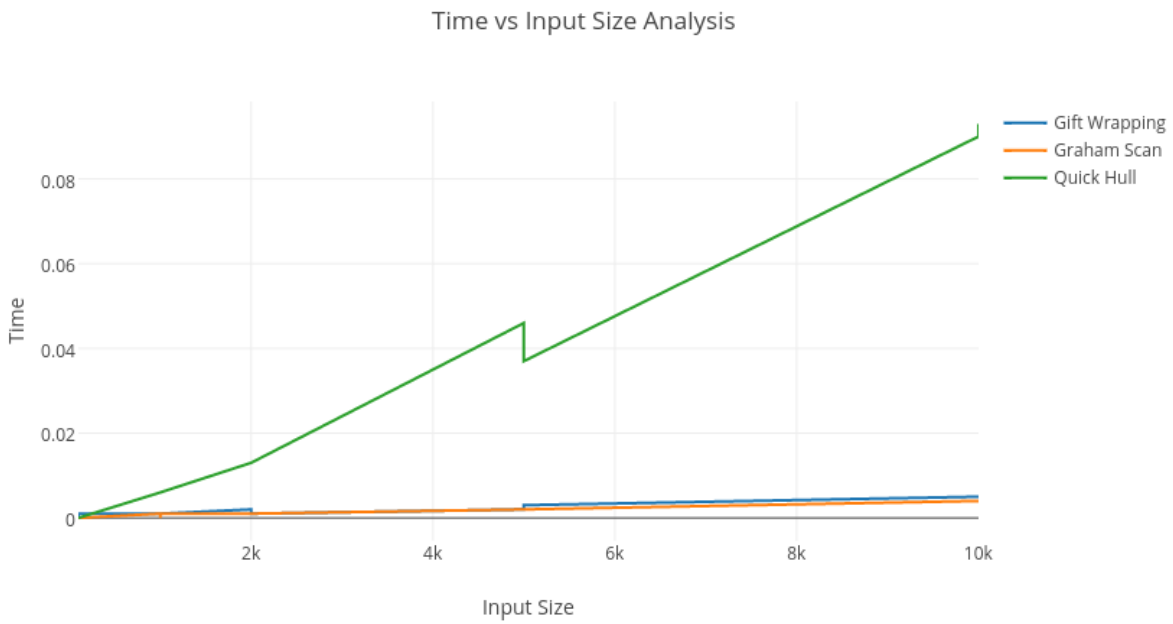
Assignment 4



Data Table

Input Size	Gift Wrapping	Graham Scan	Quick Hull
100	0	0	0
100	0	0	0
100	0.001	0	0
1000	0.001	0	0.006
1000	0.001	0.001	0.006
1000	0.001	0	0.006
2000	0.002	0.001	0.013
2000	0.002	0.001	0.013
2000	0.001	0.001	0.013
5000	0.003	0.002	0.046

5000	0.003	0.002	0.046
5000	0.003	0.002	0.037
10000	0.005	0.004	0.09
10000	0.005	0.004	0.091
10000	0.005	0.004	0.093

Special Case Analysis

1) Gift Wrapping Algorithm
- Input Size: 100 Convex Hull SIze: 100 Execution Time: 0.001
- Input Size: 1000 Convex Hull SIze: 1000 Execution Time: 0.054
- Input Size: 2000 Convex Hull SIze: 2000 Execution Time: 0.08
- Input Size: 5000 Convex Hull SIze: 5000 Execution Time: 0.499
- Input Size: 10000 Convex Hull SIze: 10000 Execution Time: 1.891

2) Graham Scan
- Input Size: 100 Convex Hull SIze: 100 Execution Time: 0
- Input Size: 1000 Convex Hull SIze: 1000 Execution Time: 0
- Input Size: 2000 Convex Hull SIze: 2000 Execution Time: 0.001
- Input Size: 5000 Convex Hull SIze: 5000 Execution Time: 0.001
- Input Size: 10000 Convex Hull SIze: 10000 Execution Time: 0.003

3) Quick Hull
- Input Size: 100 Convex Hull SIze: 100 Execution Time: 0.001
- Input Size: 1000 Convex Hull SIze: 1000 Execution Time: 0.009
- Input Size: 2000 Convex Hull SIze: 2000 Execution Time: 0.022
- Input Size: 5000 Convex Hull SIze: 5000 Execution Time: 0.113
- Input Size: 10000 Convex Hull SIze: 10000 Execution Time: 0.201