



East West University

Course Name : Discrete Mathematics

Course Code : CSE106

Section : 7

PROJECT REPORT

Submitted by

Student ID	Student Name
2025-1-60-186	Shafin Rahman
2025-1-60-194	Tawsif Islam
2025-1-60-195	Ayman Rahman

Submitted to :

Ahmed Abdal Shafi Rasel

Department of Computer Science & Engineering, EWU

Group-03

Programme Output:

1.Repeat steps 1 and 2 for $n = 2000$, $n = 3000$, $n = 4000$, and $n = 5000$.

```
• Enter the number of vertices: 1000

-----
Sum of in-degrees : 500043
Sum of out-degrees : 500043
Sum of in-degrees & out-degrees are equal.
The computational time : 2.000 ms

Enter the number of vertices: 2000

-----
Sum of in-degrees : 1999810
Sum of out-degrees : 1999810
Sum of in-degrees & out-degrees are equal.
The computational time : 12.000 ms

Enter the number of vertices: 3000

-----
Sum of in-degrees : 4500228
Sum of out-degrees : 4500228
Sum of in-degrees & out-degrees are equal.
The computational time : 25.000 ms

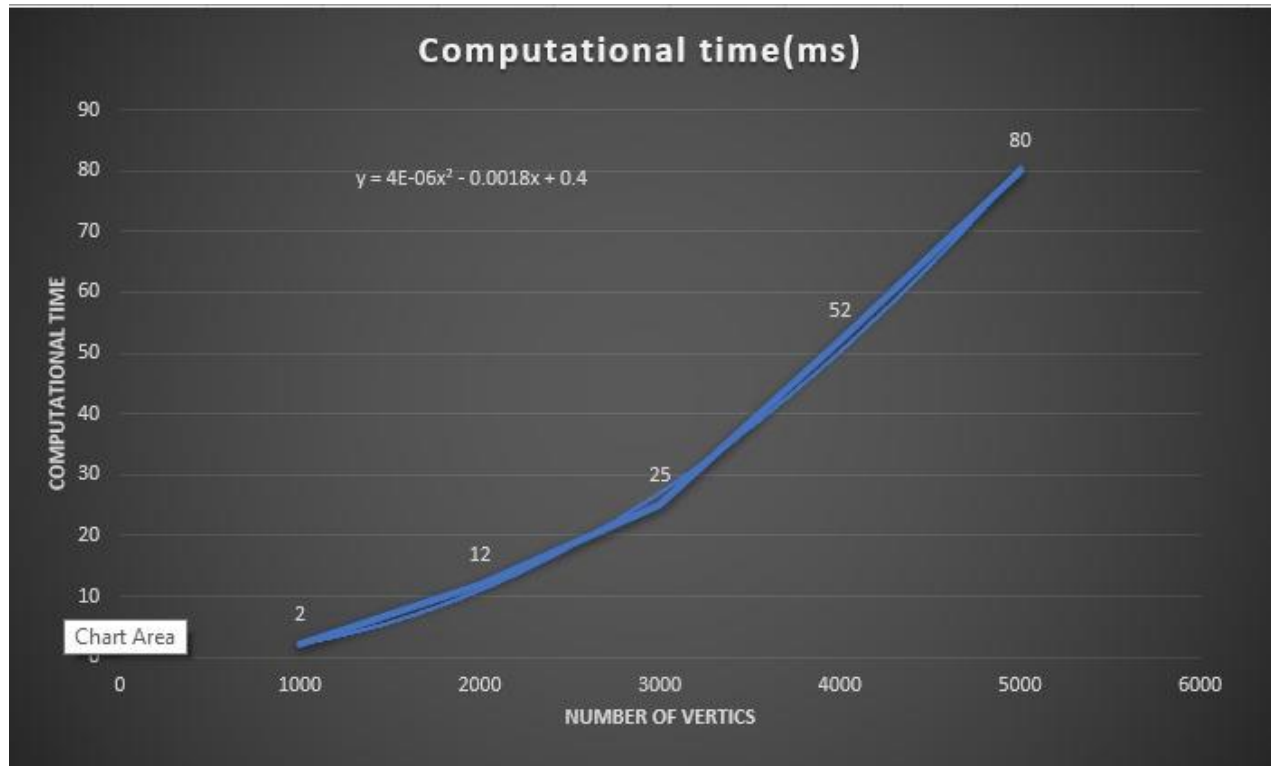
Enter the number of vertices: 4000

-----
Sum of in-degrees : 7999928
Sum of out-degrees : 7999928
Sum of in-degrees & out-degrees are equal.
The computational time : 52.000 ms

Enter the number of vertices: 5000

-----
Sum of in-degrees : 12500006
Sum of out-degrees : 12500006
Sum of in-degrees & out-degrees are equal.
The computational time : 80.000 ms
```

2.Computation Graph and Chart:



Number of Vertices(n)	Computation Time
1000	2.00
2000	12.00
3000	25.00
4000	52.00
5000	80.00

Conclusion : From the graph, we get the complexity as a function of $F(N) = 4E-06x^2 + 0.0018x + 0.4$ and theoretically we get the time complexity. So, both the time complexity from the program are the same.