# Ford Fulkerson Analysis

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2011A7PS225H

## 1 About the algorithm

The algorithm was published in 1956 by *L. R. Ford, Jr.* and *D. R. Fulkerson.*

The idea behind the algorithm is as follows: As long as there is a path from the source (start node) to the sink (end node), with available capacity on all edges in the path, we send flow along one of these paths. Then we find another path, and so on. A path with available capacity is called an augmenting path.

## 2 Observations (time in miliseconds)

Number of Vertex : 6

| **Number of Edges** | **T1** | **T2** | **T3** | **Average Time** |
|---|---|---|---|---|
| 7 | 202 | 211 | 232 | 215 |
| 8 | 270 | 289 | 267 | 275.33 |
| 9 | 379 | 371 | 415 | 388.33 |
| 10 | 422 | 332 | 354 | 369.33 |

Number of Vertex : 7

| **Number of Edges** | **T1** | **T2** | **T3** | **Average Time** |
|---|---|---|---|---|
| 7 | 111 | 131 | 127 | 123 |
| 8 | 289 | 255 | 248 | 264 |
| 9 | 264 | 305 | 242 | 270.33 |
| 10 | 2264 | 1622 | 1929 | 1938.33 |

Number of Vertex : 8

| Number of Edges | T1 | T2 | T3 | Average Time |
|---|---|---|---|---|
| 10 | 223 | 207 | 210 | 213.33 |
| 11 | 602 | 588 | 573 | 587.67 |
| 12 | 2155 | 2351 | 2085 | 2197 |

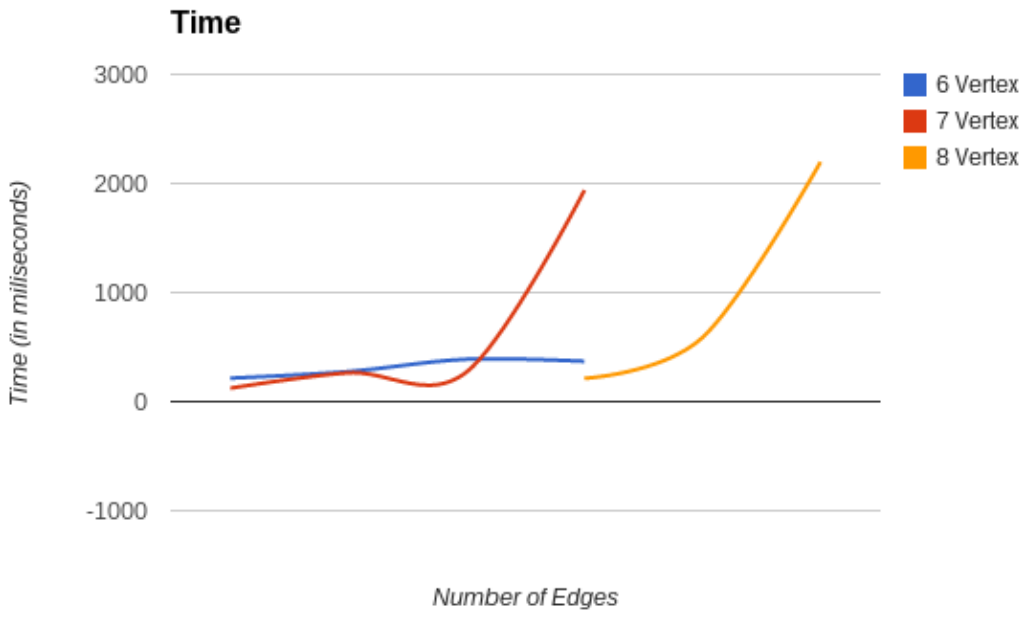


Figure 1: A simple caption

# 3 Conclusions

The runtime of Ford-Fulkerson is bounded by O(Ef), where E is the number of edges in the graph and f is the maximum flow in the graph