Minimum Vertex Cover

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*Resumo* – Este trabalho apresenta uma análise de esforço computacional de algoritmos de grafos, nomeadamente o Minimum Vertex Cover.

*Abstract* - Must be in English.

# I. Introduction

# II. Another heading (The 1ª letter is caps)

Fig. 1 - Minimize formula

## A. Graph Generation

The graph is generated based on the choice of random number between 1, 9 (x, y). The min vertices are ten, due to the implementation of percentage of edges [25, 50, 75]. In this problem doesn’t make sense to have 0 and 100, coz exist a need to check the vertices that are connected to all.

After the generation the graph is initialled by full filling the number of points of vertices until the percentage of edges is reach, with are randomly determinate. At the same time is created an Adjacent matrix for the algorithm minimum vertex cover.

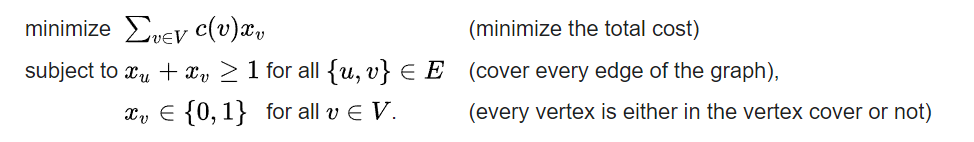
The graph and the adjacent are saved in different files. The graph file is called “output\_graph.txt” and adjacent matrix is “adj\_matrix.txt”.

*B. Determination of Minimum Vertex Cover*

A vertex cover of a graph is a set of vertices that includes at least one endpoint of every edge of the graph.

The minimum vertex cover is the optimization problem of finding the smallest vertex cover in a graph.

The weighted of minimum vertex cover can be formulated as the following formula.



# References

[1] <http://dgtlview.blogspot.com/2015/07/vertex-cover-python-implementation.html>

[2] <https://www.geeksforgeeks.org/vertex-cover-problem-set-1-introduction-approximate-algorithm-2/>

[3] <https://en.wikipedia.org/wiki/Vertex_cover>