# MDM-2024 Homework N

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## Contents

# List of Figures

## 0.1 Improved Algorithm

- how the algorithm works

- the improvement is the selection of the cliques with the smallest degree. - the algorithm only works by pruning using the Theorem:

- the theorem formula. - the only way to improve the algorithm is to improve the pruning - the pruning happens more often only, if the condition happens more often, and none of the supersets of S, can be a-cliques - to make the condition true as often as possible, the upper bound on the RHS of the theorem should be maximized - to maximize that is to minimize the - (negative part) . this is happening, when the $\deg(v)$ is minimized (denoting the degree of neighbours in the total graph) - thus the algorithm should always iterate through neighbours in the order from the smallest degree $\deg(v)$ to the largest degree as last.

- the picture of the improvement in a graph - .png - explanation if any non-linearities (and thought that whether the alpha value should make a difference there? ) - discussion how the size of the graph would affect the alpha....