Project block 1.3

Find the smallest range for the chromatic number of a graph

Group 10

Tu Anh Dinh
Michal Jarski
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Vaishnavi Velaga
Rudy Wessels
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Summited: Wednesday January 23, 2019

Maastricht University

Department of Data Science and Knowledge Engineering

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Project coordinator: Prof. Jan Paredis

Preface

Summary

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Abbreviations and symbols

Chapter 1

Introduction

Chapter 2

Methods

2.1 Decomposing the graph

Seperate the disconnected graphs in the original graph
Use breadth-first search

2.2 Greedy algorithm

Sort the vertices based on their constraints
Try to reuse available colors.

2.3 Special cases

2.3.1 Bipartite

Use breadth-first search

2.3.2 Odd cycle

2.3.3 Complete graph

Check if every vertex is connected to all other vertices

2.4 Genetic algorithm

2.4.1 Fitness function

Based on the number of invalid coloring of each graph

Chapter 3

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Chapter 4

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Chapter 6

Conclusion

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Appendix