Project 1-1: Chromatic Numbers: Phase 1

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**>Introduction of people in the group:**

Project Leader:

planning, prepares meetings, responsible for product, monitors progress

Product Coordinator:

Assigns tasks, manages documentation, makes code readable

Presentation Coordinator:

Responsible for presentation, tests hardware, coherence of slides

**>Stating problem**

**>Flow chart**

**>Algorithms**

Exceptions:

Graphs: without edges, odd-cycled, bipartite, complete graphs

Brooks’ Theorem:

Determining the largest number of edges for any node

(=upper bound) – except when it’s odd or complete

Brute force:

Works for relatively small chromatic numbers

Chromatic number max. 15 (otherwise too slow)

Clique algorithm:

Determine lower bound by finding the biggest complete subgraph = lower bound (faster brute force, more precise results)

**>Results**

Brute force: 15,

Complete: 13,

Bipartite: 3,5,6,8

Brooks: 17

**>Conclusion**

Higher speed = lower precision (quality)

**>Planning**

Developing further the algorithms (precision and speed improvement).

Adding GUI (Graphical User Interface) for the game.

Make a new Gantt chart

Meetings