COM2031 EXAM NOTES, CONDENSED

02 AC 01
Lovelace Lab 129
Time: 15:30 - 17:30

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Contents

1 Divide and Conquer

1.1 Tiling example

Did the 2^n grid tilings problem.

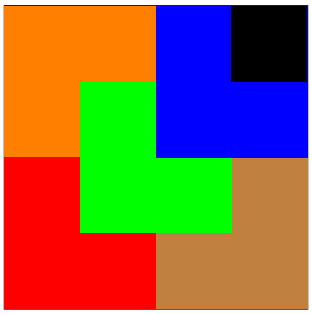

Figure 1: Example of a 4x4 grid with some tiles

1.1.1 Base case

Base case is 2^1

wich is just a 2 by 2 grid. only 4 ways to tile it with L shape tiles.

1.1.2 Recursive case

2^2 comes next. We can divide the grid into 4 quadrants. We can tile the grid by tiling the 4 quadrants.

Did quicksort runthrough.

2 Graphs

2.1 Graph representation

- Adjacency matrix
- Adjacency list
- Edge list

2.2 Graph traversal

- Depth-first search
- Breadth-first search

2.3 Minimum spanning tree

- Kruskal's algorithm
- Prim's algorithm