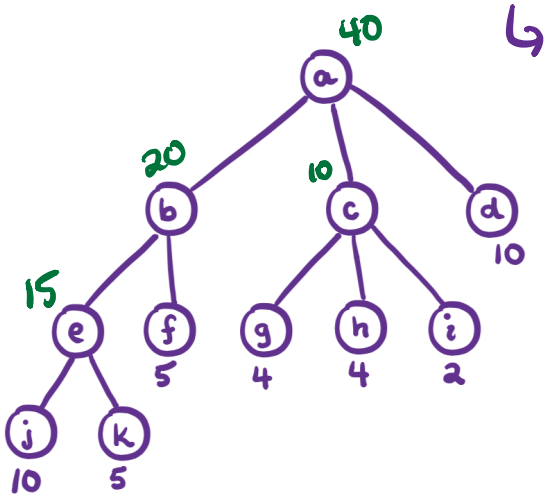
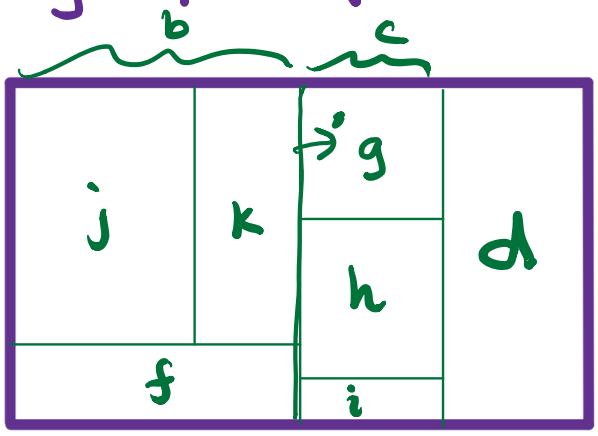
# CSC148 - Introduction to Assignment 2: Treemap

The goal of this worksheet is to help you get familiar with some of the concepts you'll need to complete Assignment 2.

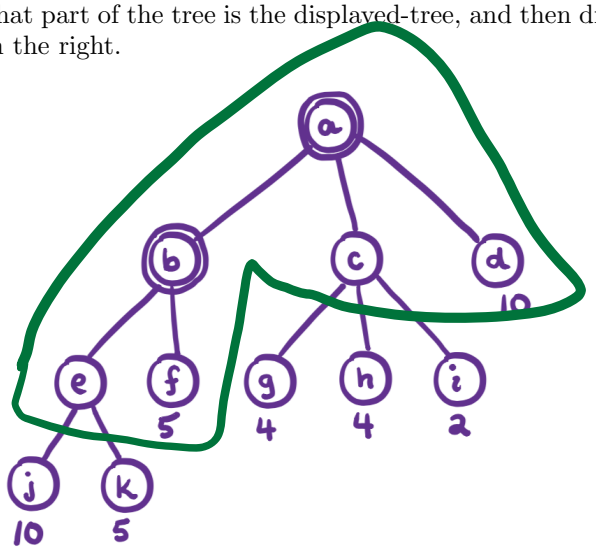
1. It's your turn to draw a treemap. Take a look at the diagram below representing a data tree. The values below the leaves represent the size of the data for each of those leaves. First, in the tree, write down the sizes of the internal nodes. Then, fill in the rectangle on the right with a treemap representation of the entire data tree. (You can use the letters for each leaf in the tree to label your treemap, or use colour to relate each leaf to its rectangle in the treemap.)

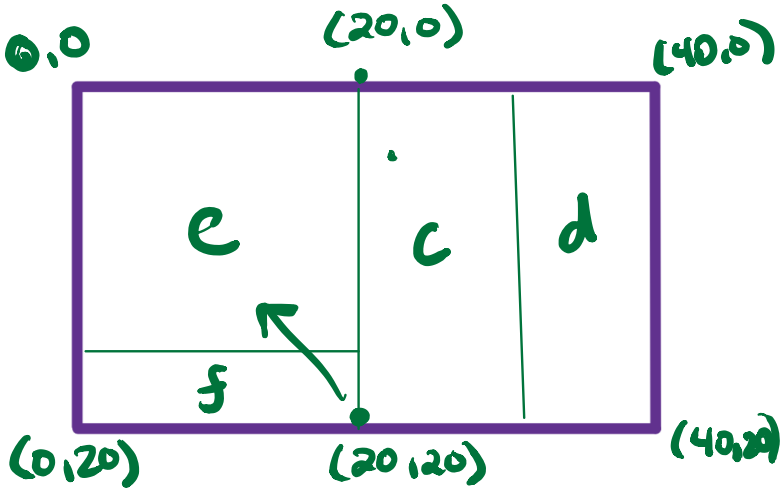



everything expanded




2. Here's the same tree, but this time we've used a double-circle to indicate that a tree node is expanded. Indicate for yourself what part of the tree is the displayed-tree, and then draw the treemap representation of this displayed-tree in the rectangle on the right.




3. Go back to your treemaps in the previous two parts and label the top-left corner of the outermost rectangle as the origin: (0, 0). Assume for each that the outermost rectangle is 40 units wide and 20 units tall.

   Complete the table below. For each point given, fill in the letter for the tree node whose rectangle includes that point. Do so for each of the two treemaps. In the case that a point lies on a boundary, choose the rectangle closest to the origin.

| (x-coordinate, y-coordinate) | Treemap #1 | Treemap # 2 |
|---|---|---|
| (5, 5) | j | e |
| (10, 10) | | |
| (22, 2) | g | c |
| (22, 10) | h | c |
| (22, 19) | | |
| (20, 20) | f | f |
| (30, 30) | out of range. | |