




Tree Maps

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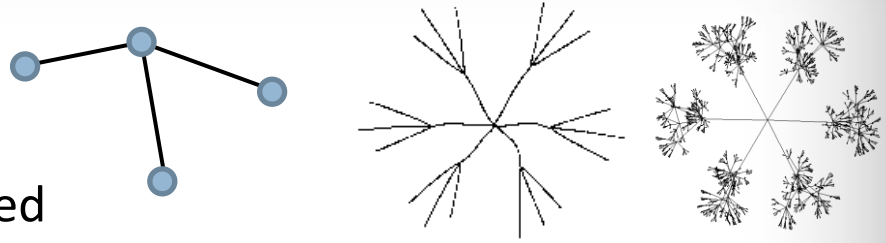
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Trees and Hierarchies

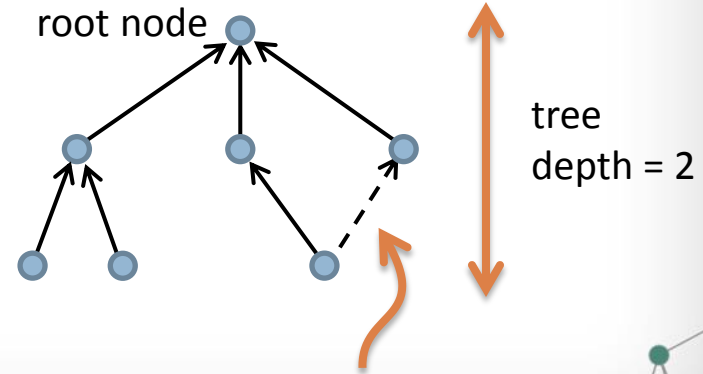
- Tree

- n nodes, $n-1$ edges
- minimally (simply) connected
- Single parent node can have multiple child nodes (siblings)



- Hierarchy

- acyclic directed graph
- Typically height-based layout used



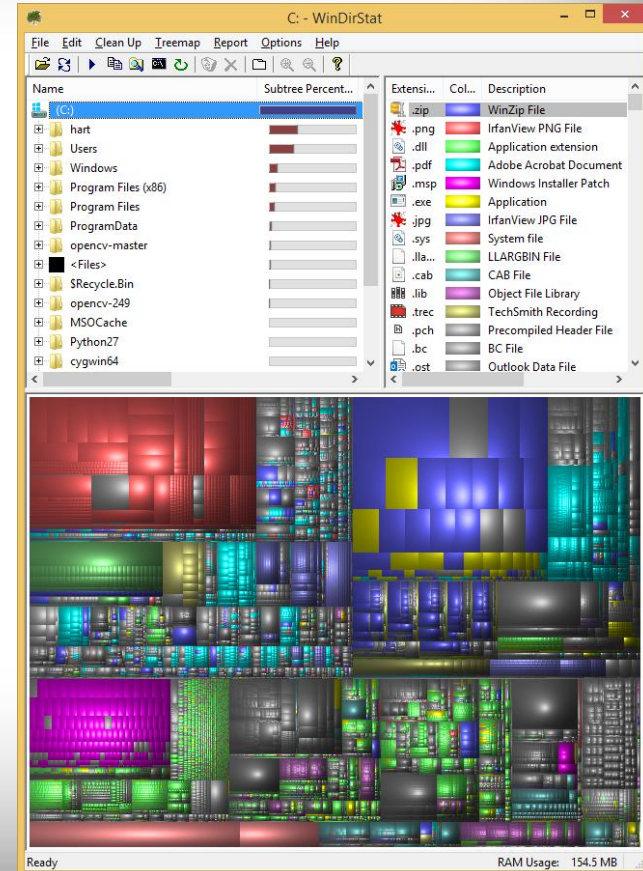
adding this edge means the child node has two parents in the hierarchy, which would no longer be a tree





Treemaps

- Schneiderman, ACM Trans. on Graphics 11(1), 1992, pp. 92-99
- Maps quantities to area
- Color used to differentiate areas
- Shading delineates hierarchical regions
- Hue nominal category axis



Treemaps

Quantitative

Position

Length

Angle

Slope

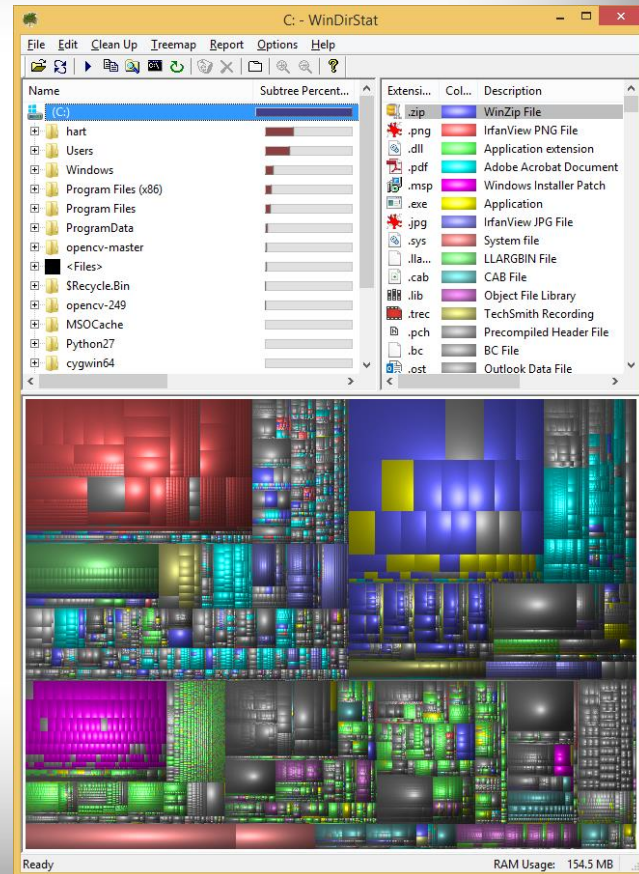
Area

Volume

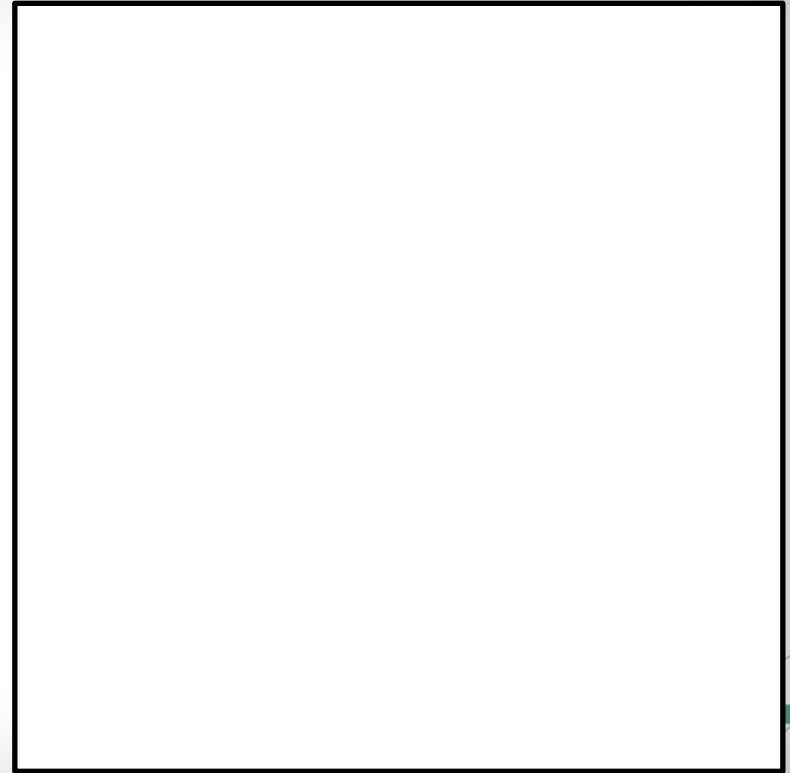
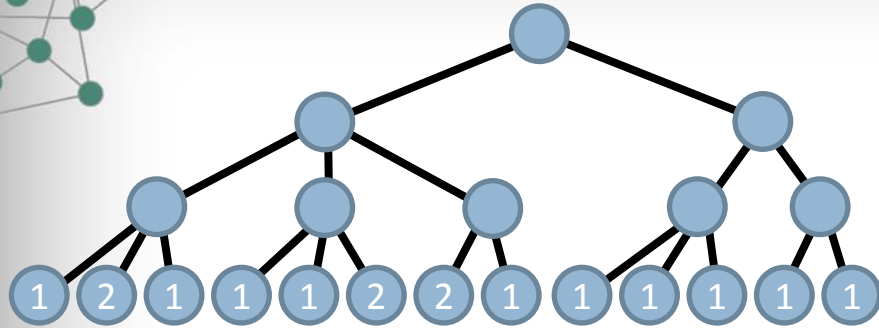
Density

Saturation

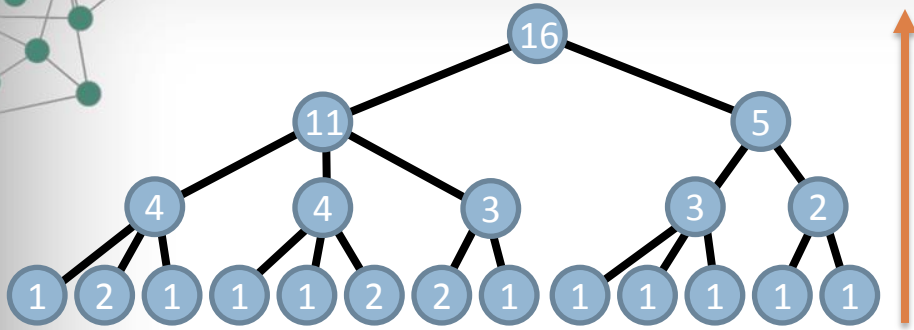
Hue



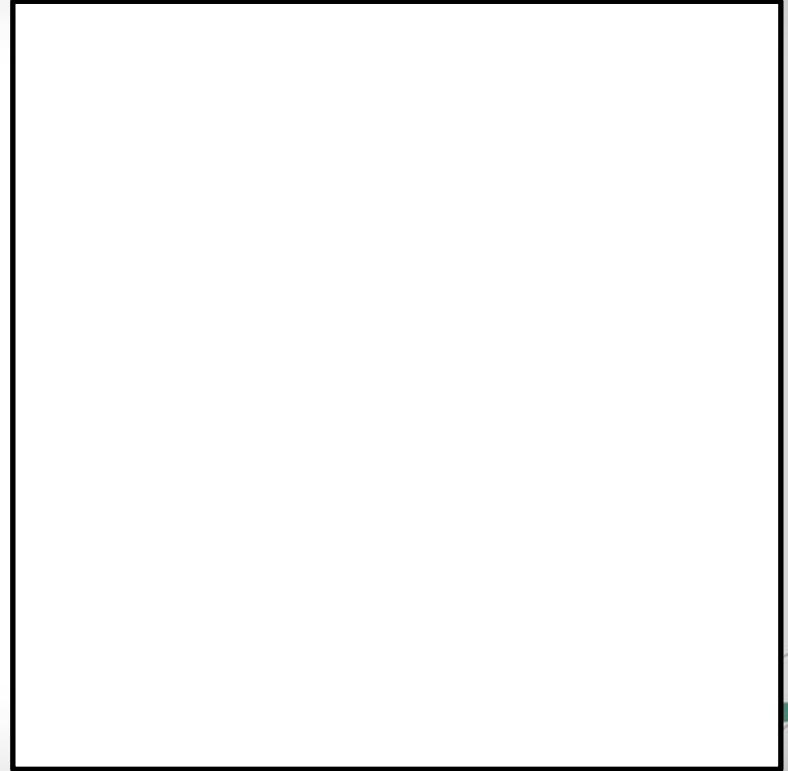
Treemap Layout



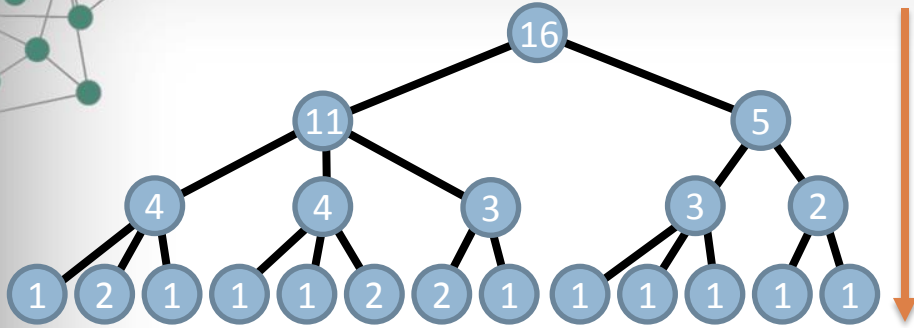
Treemap Layout



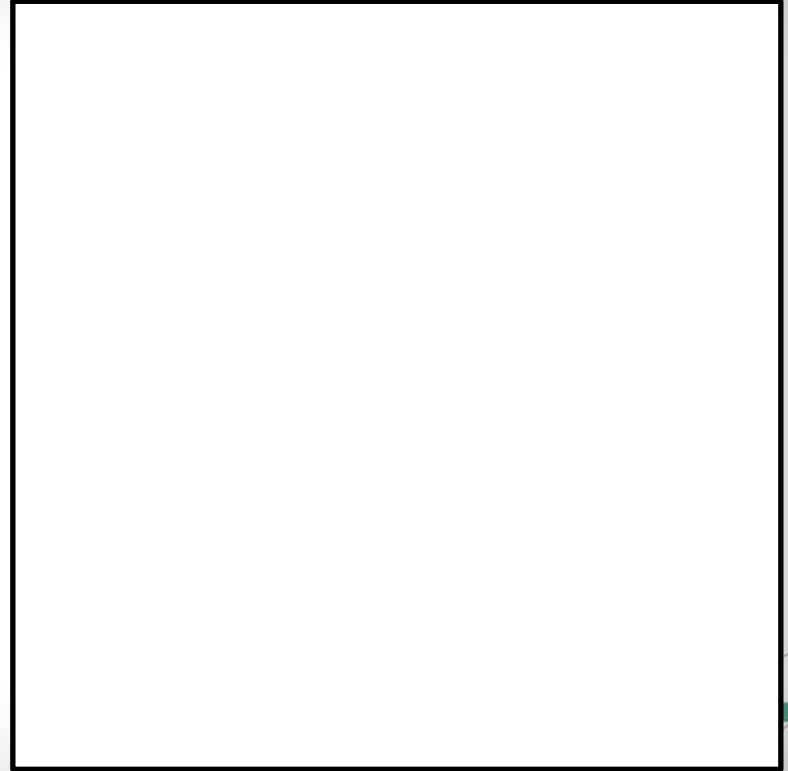
- Set parents node values to sum of child node values from bottom up



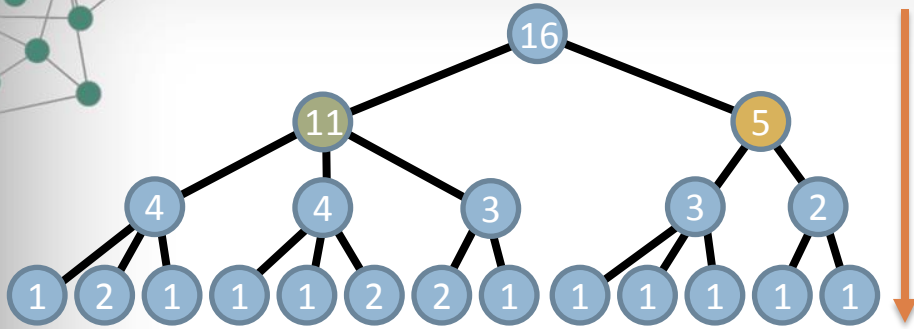
Treemap Layout



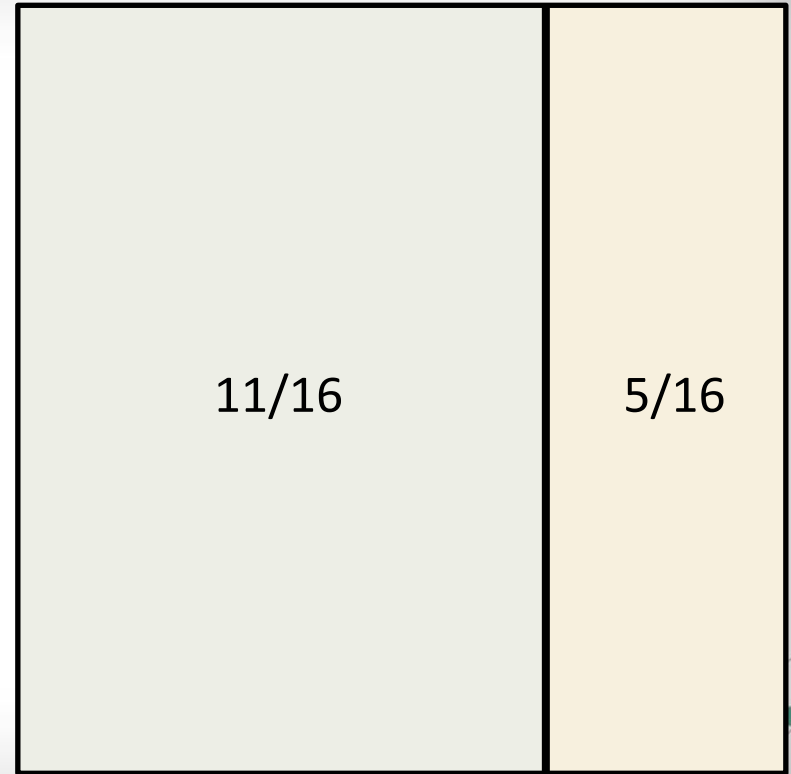
- Set parents node values to sum of child node values from bottom up
- Partition based on current node's value as a portion of parent node's value from top down



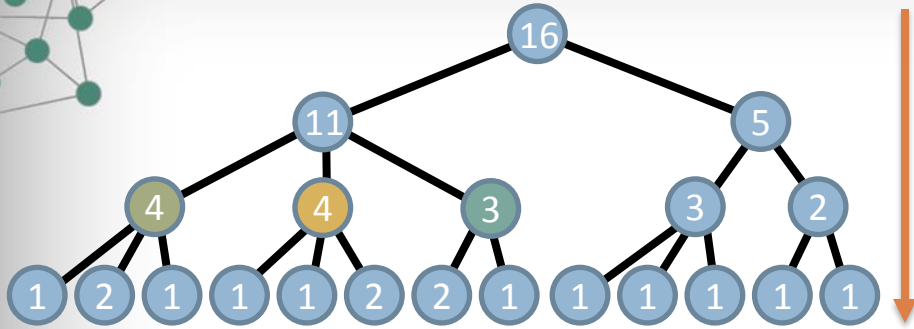
Treemap Layout



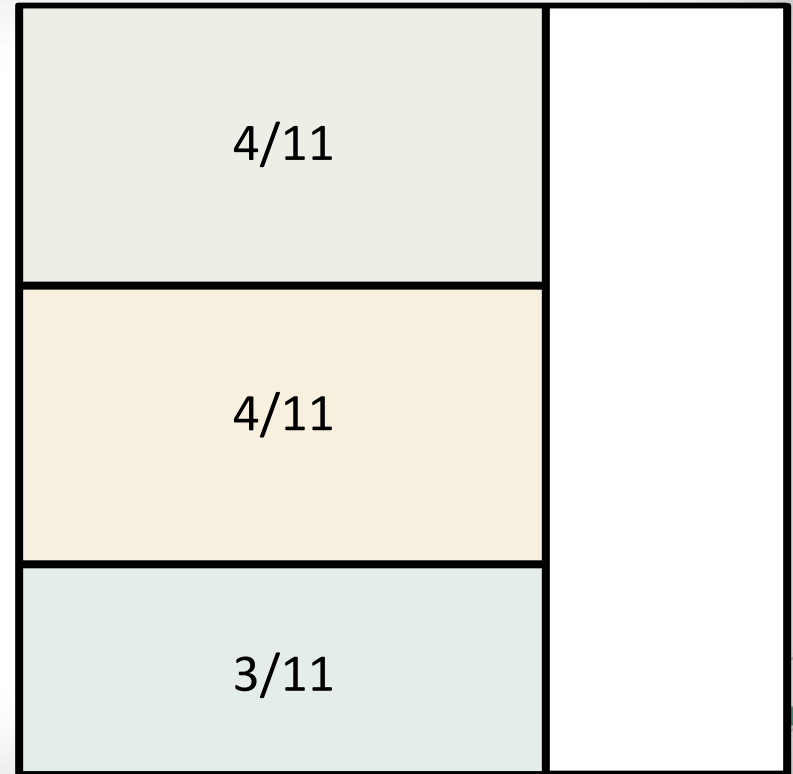
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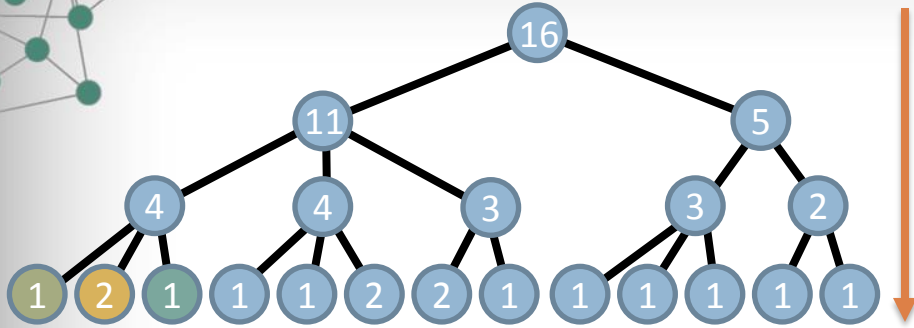
Treemap Layout



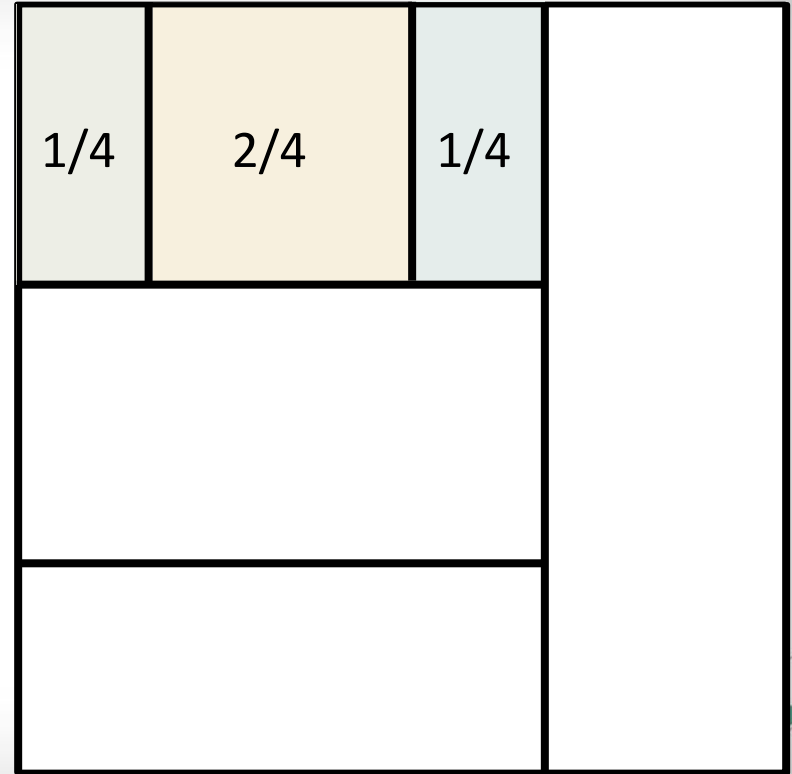
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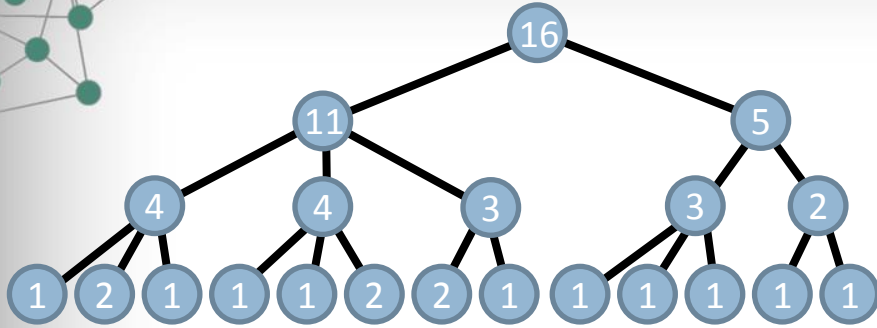
Treemap Layout



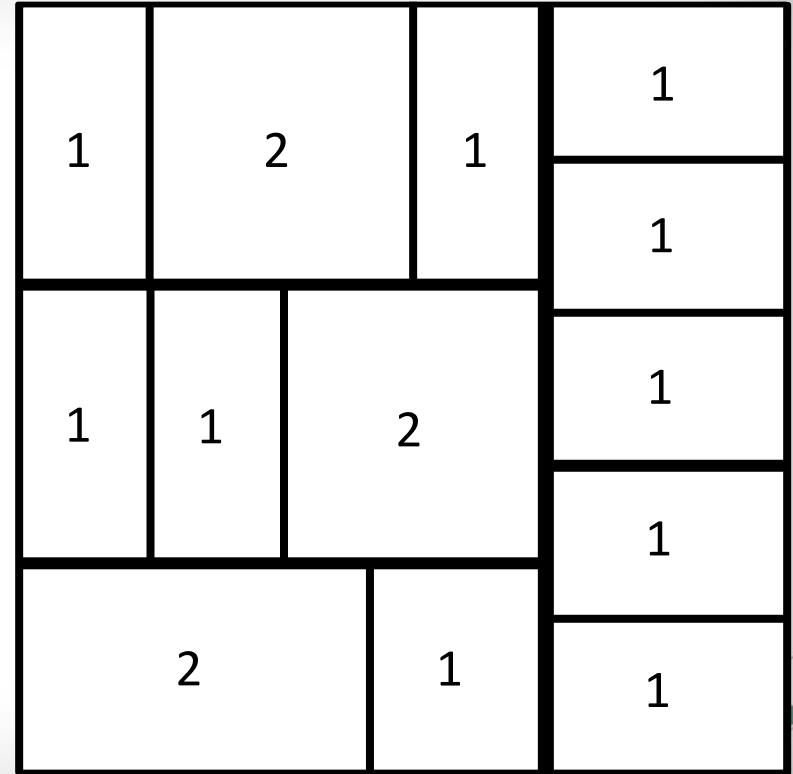
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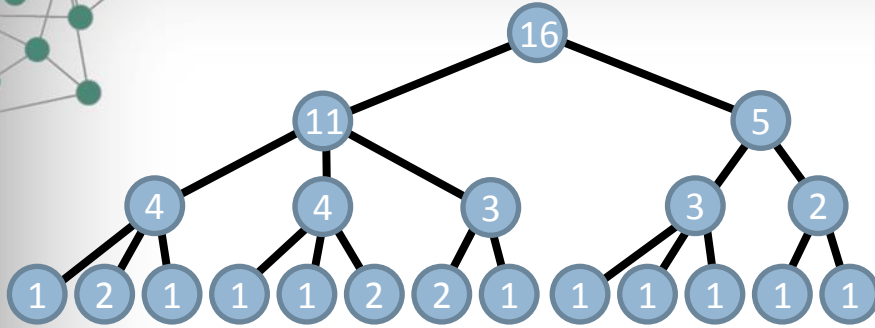
Treemap Layout



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Treemap Layout



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