Assignment 2: Treemaps

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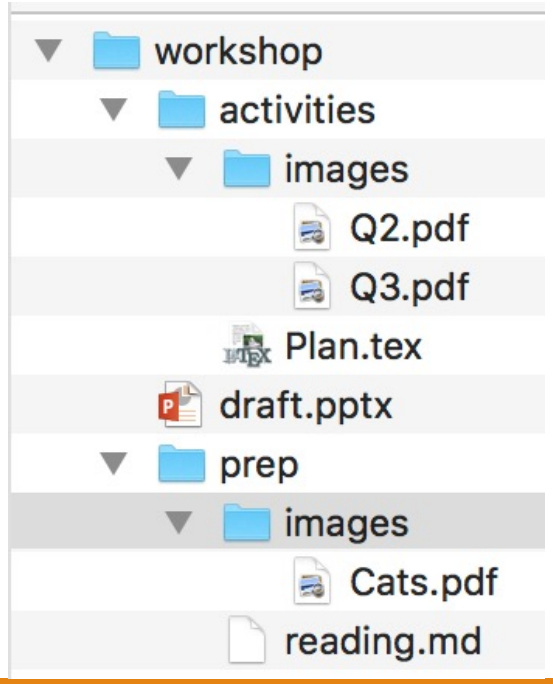
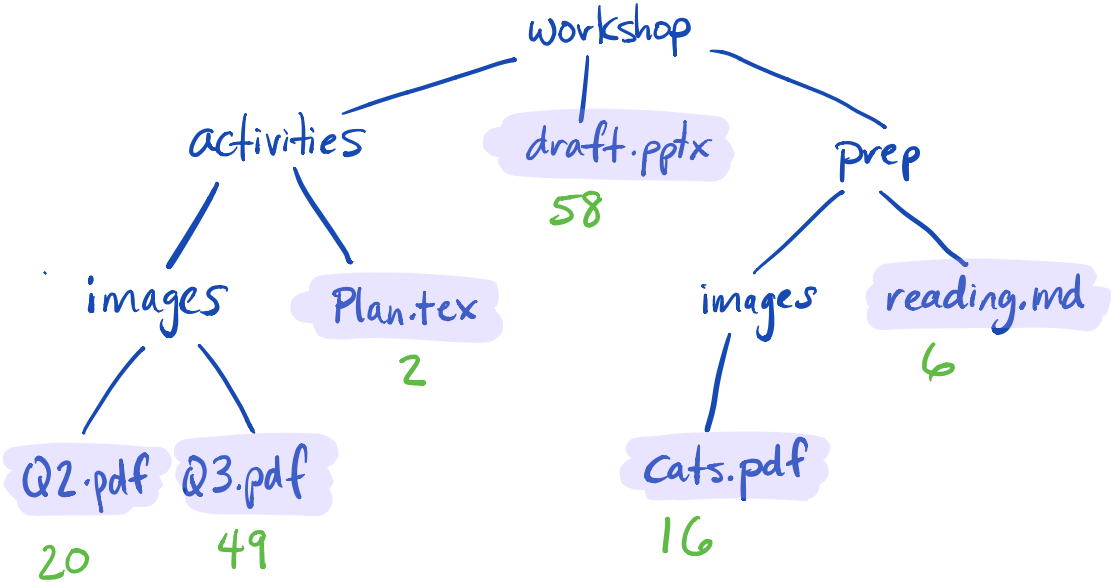
Representing sized hierarchical data

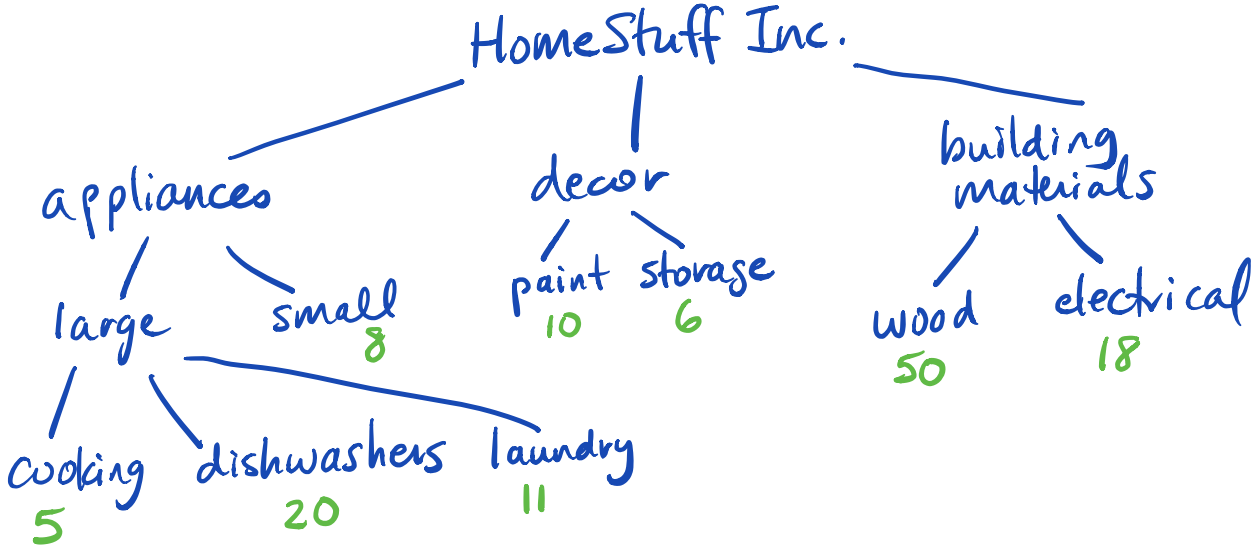
Sometimes with hierarchical data, the leaves have a size.





Representing sized hierarchical data

Another example, with info on sales in a company:



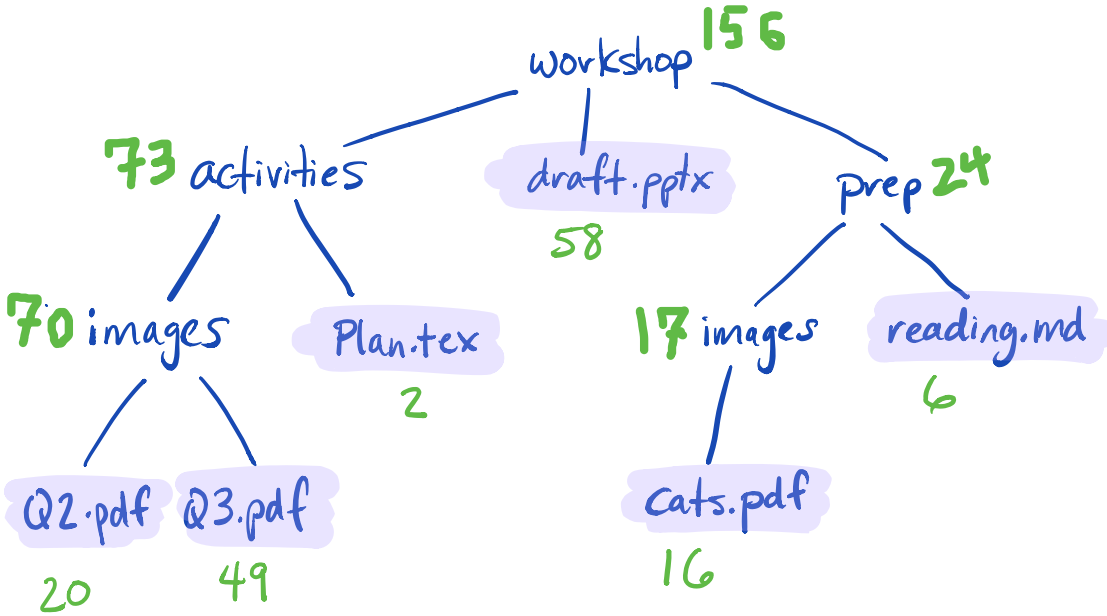
Representing sized hierarchical data

It makes sense to infer a size for the internal nodes:

The size of an internal node is the sum of the sizes of its subtrees….

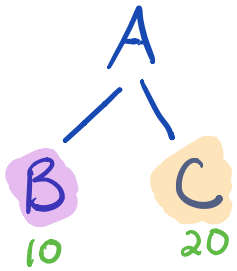
For this assignment, we'll tack on a "plus possibly some additional size (say +1 in this example)" for internal nodes.

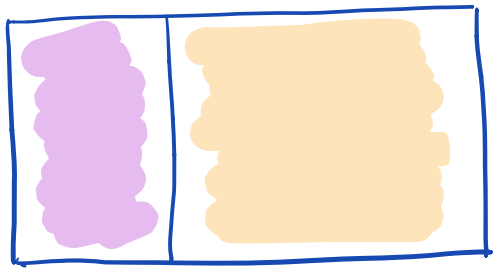
For example, on a computer, folders also take up space — even if they don't contain any files in them!

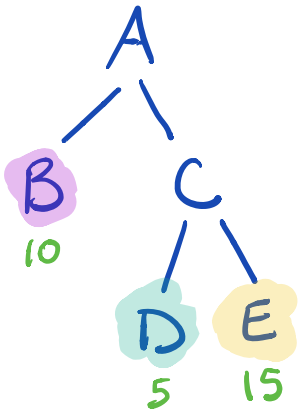


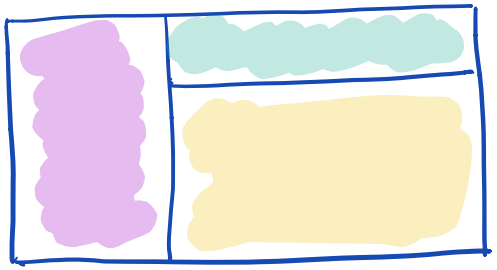
Visualizing that data with a “treemap”

A treemap visualizes hierarchical sized data as a set of nested rectangles.

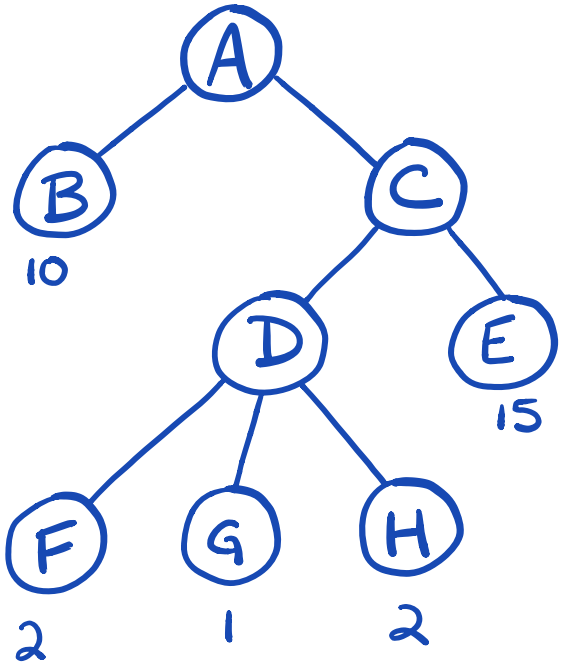




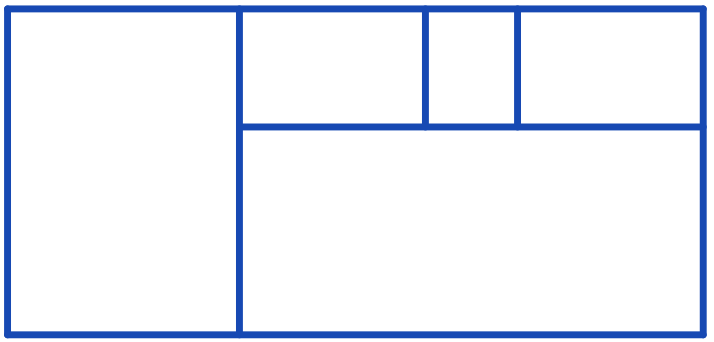

A
B
C
10
D
E
5
15



Visualizing sized hierarchical data

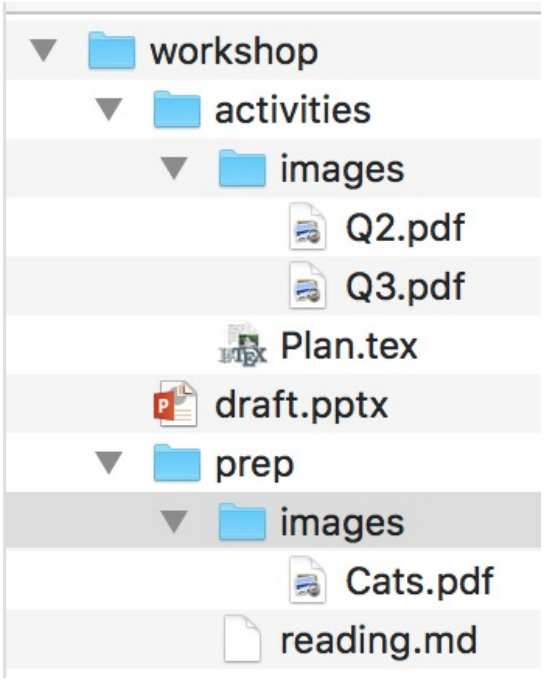


This visualization is called a “treemap”:

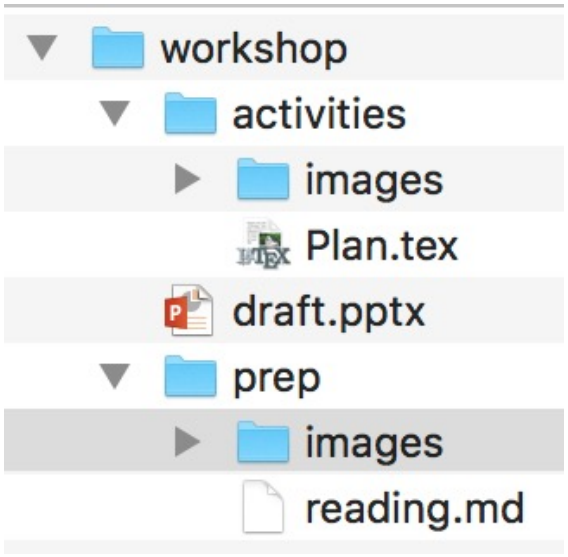


Expanding and collapsing

Here is a fully expanded list of files:

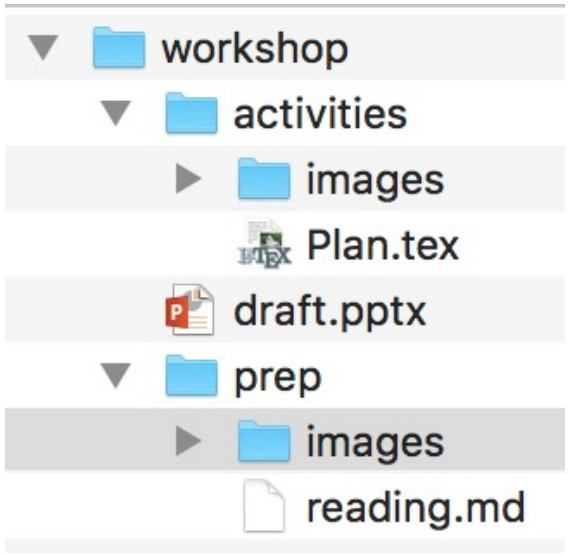


Here we have collapsed the 2 “images” folders:

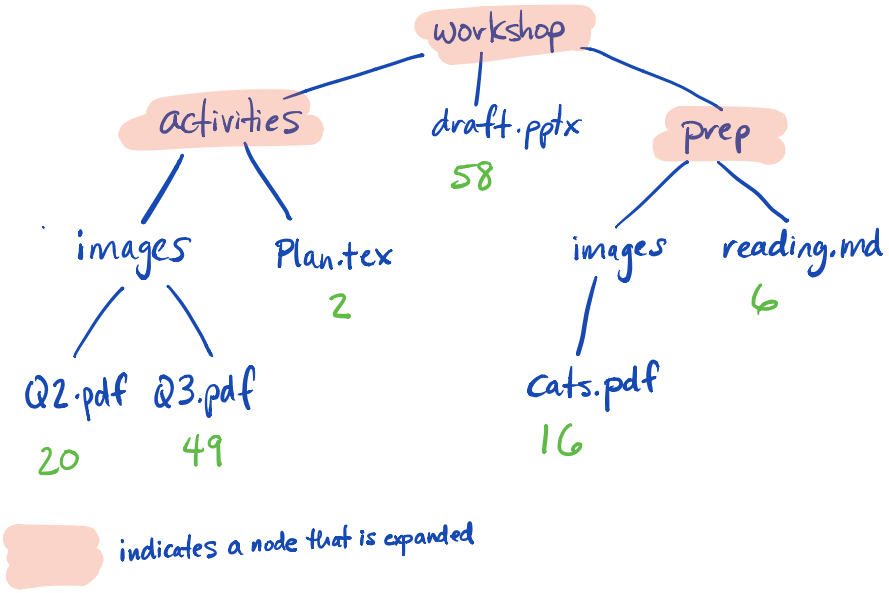


Representing expanded nodes in the tree

Here we have collapsed the 2 images folders:

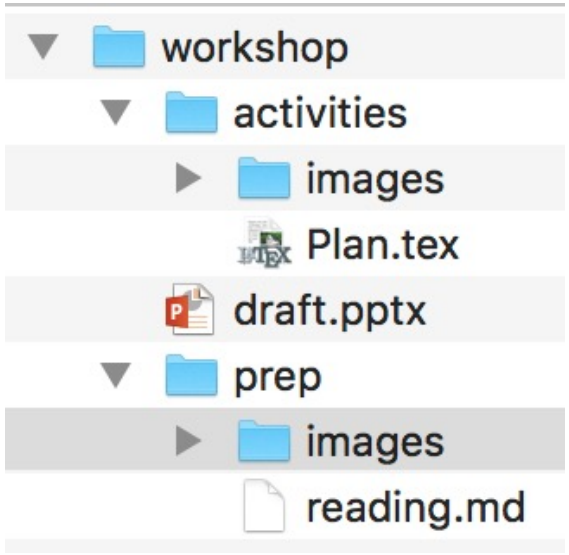


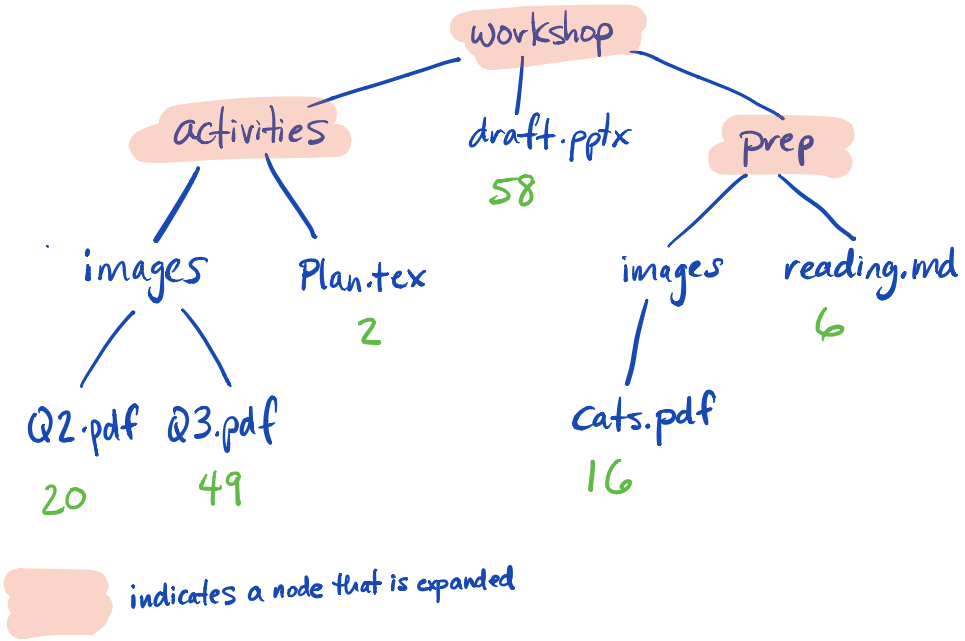
Each node is either expanded or collapsed.
We mark the expanded nodes in the tree.
Everything else is collapsed:



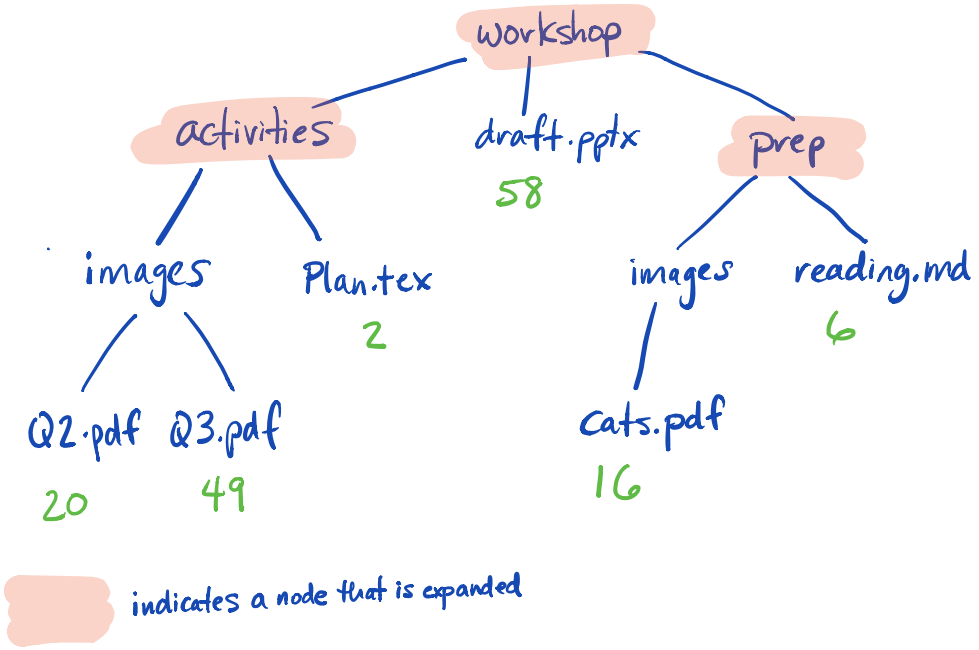
Which folders do we see in the file viewer?

We see the expanded folders and their children.





Which nodes do we see in a treemap?



Same: We see the expanded nodes and their children.