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Assignment 4

(Due: 28.11.2022)

Task 1 Treemap

(a) In slice and dice, the base rectangle is subdivided recursively. The area of each sub-rectangle corresponds to the size of node. The direction of each sub-division alternates per level. Every even (0,2,4) level is sliced horizontally and every odd level (1,3) is sliced vertically

slice and dice : Figure 1 (Page 3)

(b) **squarified treemap** : Figure 2 (Page 4)

(c) *Advantages of slice and dice:* Part-to-whole relationship is easy to understand.
Disadvantages of slice and dice: Actual structure of tree/hierarchy is difficult to understand and labeling of child nodes become difficult.
Advantages of squarified treemaps: Squarified treemaps uses display space more effectively.
Disadvantages of squarified treemaps: Order of nodes is not preserved and it has runtime complexity.

Task 2 Design Hierarchical Visualization

(a) Draw Indented Tree **Indented Tree** : Figure 3 (Page 4)

(b)
- How scalable is your visualization regarding the number of data points?
  ANSWER: Indented tree are better scalable than node link tree, stacked tree or nested treemap. In the given dataset, there are 17 leaves and 5 nodes under root. As each subnodes/leaves are indented, new nodes or leaves can be easily added with further indentation without losing the parent child structure.

- How compact is your representation relative to the size of the data you present?
  ANSWER: There are different number of leaves under sub-nodes. However, if all sub-nodes are collapsed then a compact view of the main 5 sub-nodes under the 'root' node can be seen.

- How well can you compare different pages and categories to each other?
  ANSWER: The leaves in orange color show the views on that final page. Page view for each node can be calculated as the sum of page views of its child nodes/leaves. So, it is very easy to compare page views of each category.

Task 3 Stacked Tree

(a) Implemented

(b) Implemented

(c) Implemented

Figure 1: Task 1 (a)

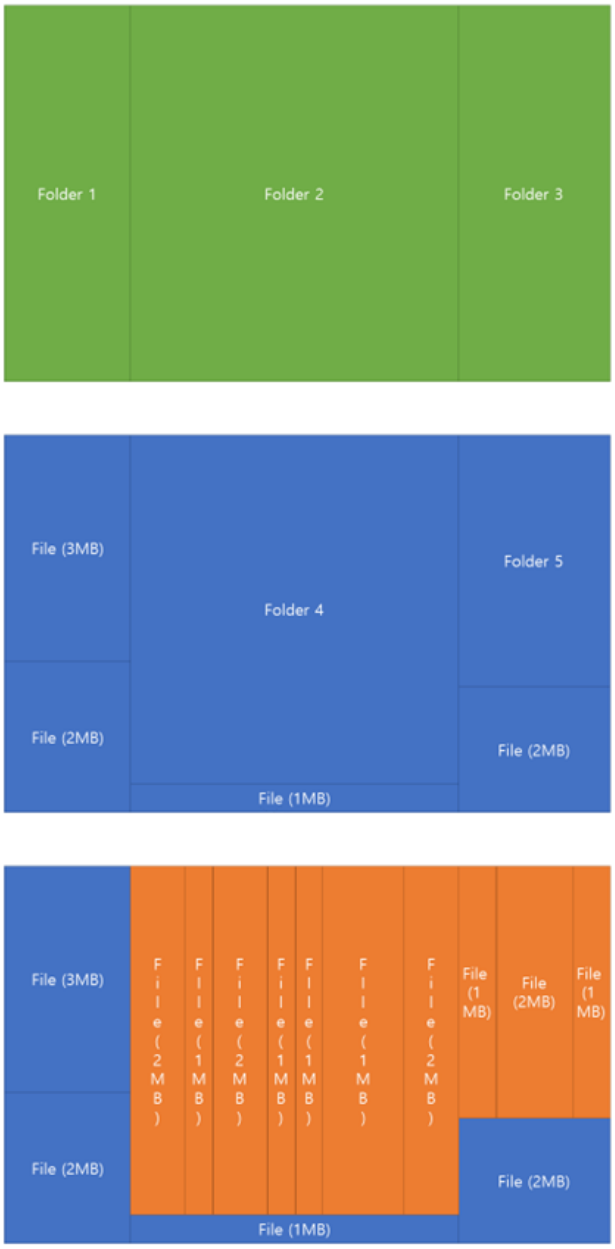

Figure 2: Task 1 (b)

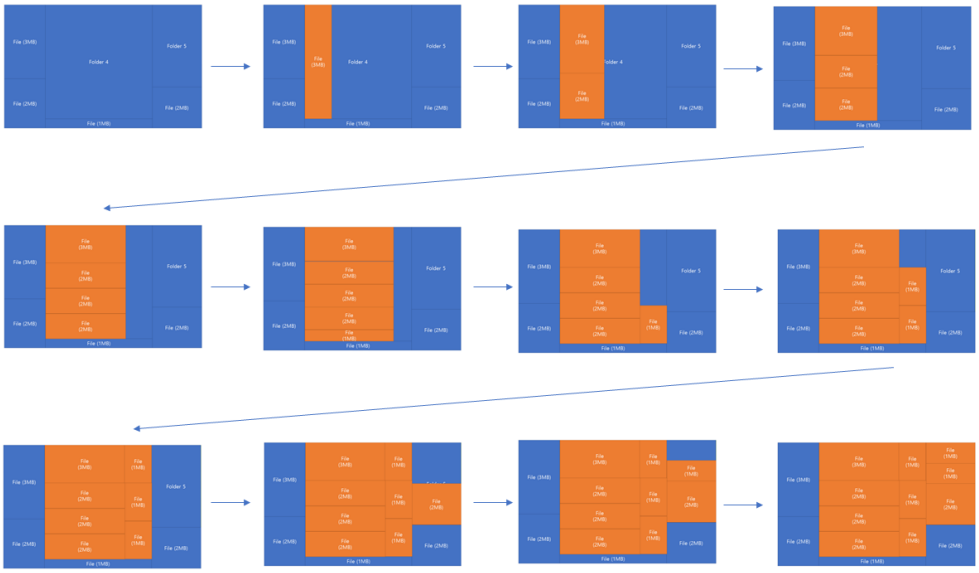

Figure 3: Task 2 (a)