University of Konstanz
Department of Computer and Information Science
Chair for Data Analysis and Visualization
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Due: Monday, 18.01.2021, 10:00

Note: Please, extend your prototype from the previous assignment.

Task 1: Pixel-based visualizations

To get a first glance at the data, pixel-based visualization can provide a space-efficient overview over all dimensions, showing the value distributions in each dimension. Therefore, in this task, we will extend our prototype with a pixel-based technique. Please work on the following sub-tasks:

1. Integrate a **new tab-view** for the **pixel-based visualization**.

2. Use d3 to implement a pixel-based visualization, similar to the one in Keim's paper (figure 7). Use the **Peano-Hilbert curve** as the screen-filling technique.
   - For this task, you are **not** allowed to **use any existing libraries** (incl. d3-hilbert) that do the job for you.
   - You should display a **single** pixel-based **visualization for each dimension** of the dataset and place them next to each other to enable comparison.

3. The interpretability of pixel-based visualization heavily depends on how the **values** in each dimension are **sorted**. To enable sorting in your pixel-based visualization, implement **onClick-handlers** for **each dimension**. When the user clicks on the pixel-view of one dimension, the data should be sorted according to that dimension in ascending order.
   - Keep in mind to always re-order all dimensions, determined by the clicked dimension.
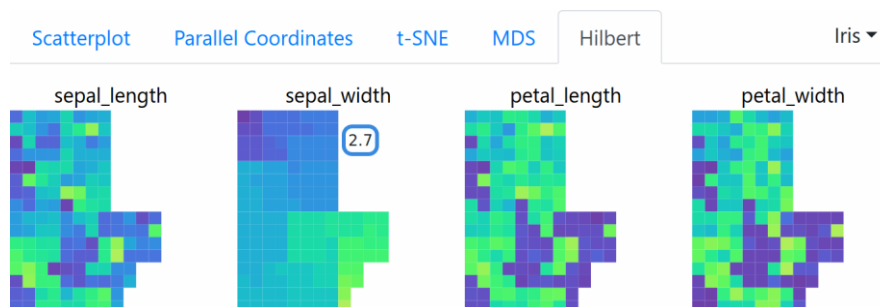
Your web-based visualization prototype is now finished! Next week, you have to implement a smaller stand-alone web-application.