2973140 - Felix Bühler
2893121 - Jan Leusmann
3141241 - Jamie Ullerich

Exercise 2

Exercise 2.1 - Visualization Pipeline

Data acquisition: Gather GeoData, Traffic data from server

Filtering: Extract streets, streetsize/length, traffic per street, points of interest, from the data

Mapping: Map these extracted data values to visual variables: streets to edges, Points of interest (U-Bahn etc.) to glyphs, traffic per street to color (green for little, orange for large amount of traffic)

Rendering: Bring these visual variables to the screen in a view

Interaction: The user can interact with Filtering (choose usuall traffic at specific time), Mapping (Show glyphs for U-bahn), and Rendering (Zoom, Pan...):

Exercise 2.2 - Data Representation

1. Celsius temperature of a thin heated rod.
   - Data domain dimensionality: 1D
   - Attribute dimensionality: 0D
   - Attribute scale type: interval
2. Positions of stars in the Milky Way galaxy.
   - Data domain dimensionality: 3D
   - Attribute dimensionality: 0D
   - Attribute scale type: ratio
3. Weather condition map (rain, snow, sunny. . .) of Europe.
   - Data domain dimensionality: 2D
   - Attribute dimensionality: 1D
   - Attribute scale type: nominal
4. Air flow around a car.
   - Data domain dimensionality: 3D
   - Attribute dimensionality: 3D
   - Attribute scale type: ratio
5. Amount of traffic on the roads of Stuttgart.
   - Data domain dimensionality: 2D
   - Attribute dimensionality: 1D
   - Attribute scale type: ordinal
6. Current time at every point on Earth.
   - Data domain dimensionality: 2D
   - Attribute dimensionality: 1D
   - Attribute scale type: interval

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Exercise 2.3 - Data Properties

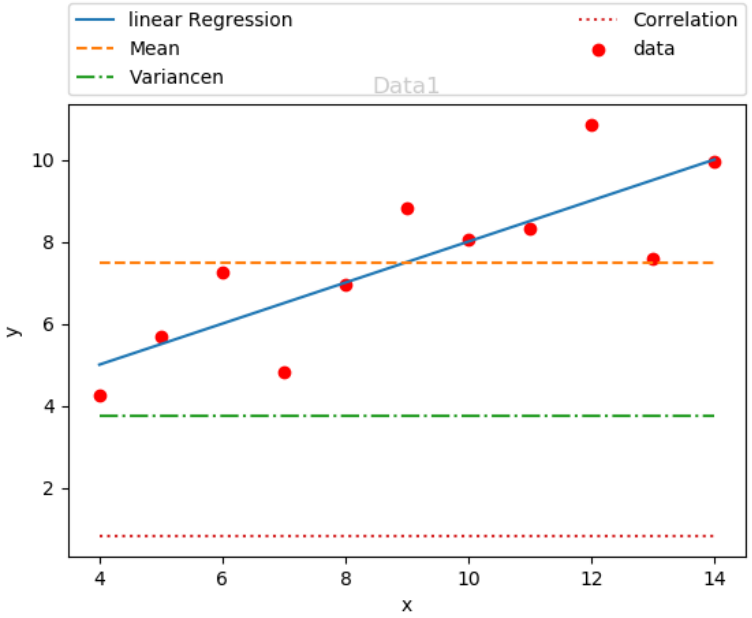

Abbildung 1: Data1

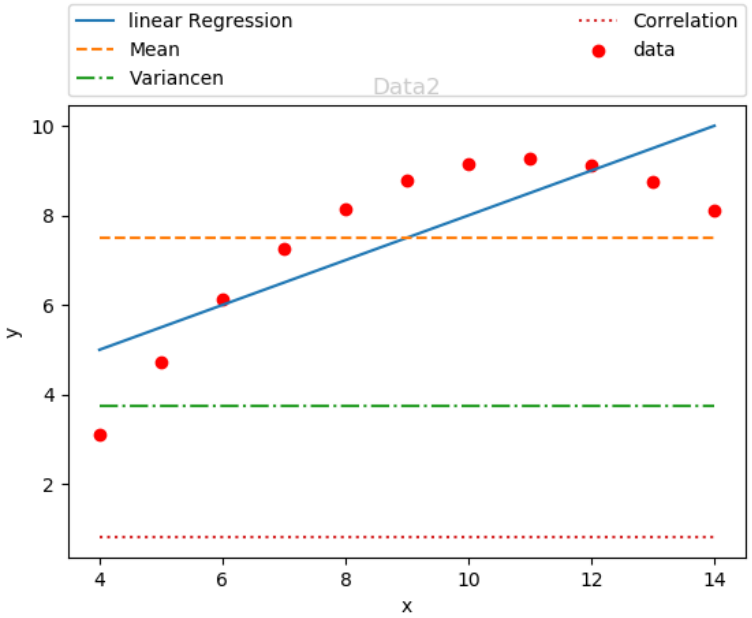

Abbildung 2: Data2

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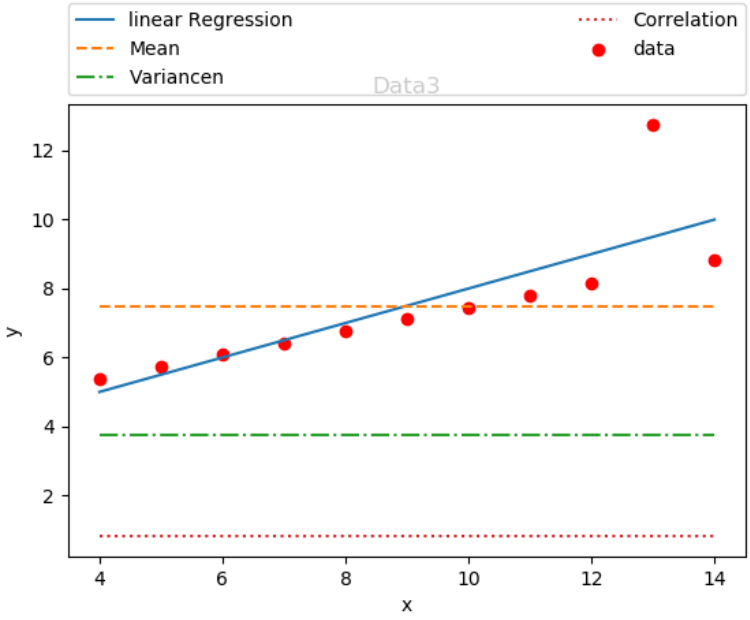

Abbildung 3: Data3

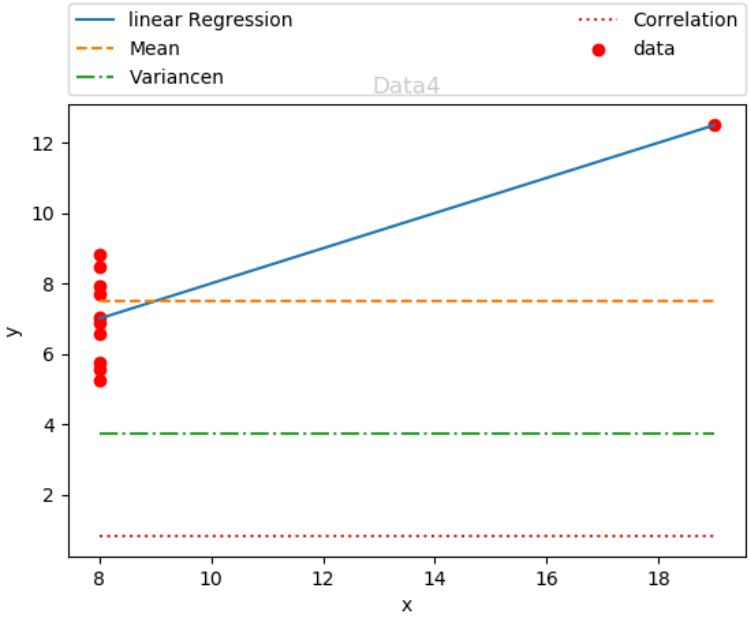

Abbildung 4: Data4