

## **1 The Point**

On another PDF (point.pdf).

## **2 Weber's Law**

- a. What does Weber's law describe? What does Fechner's law describe? What does the logarithm in Fechner's law mean?**

Weber's Law is the principal of "Just Notable Difference". It means that we judge based on relative, differences rather than absolute. Fechner's Law states that the humans' perception of loudness and brightness is proportional to the logarithm of the actual intensity measured with an accurate nonhuman instrument. The logarithm is a mathematical formula relating the perceived brightness to physical intensity.

- b. Write a game which draws visualizations of the same or similar number of points and asks the user to spot the difference. Use visualizations similar to the one below with random point positions as a baseline.**

Code for the game is in '[game\\_ex2a.ipynb](#)'

## **3 Gestalt Theory**

**Which Gestalt laws are used in this example graphs? Which effect is created?**

- Similarity
- Enclosure
- Closure
- Connection
- Past Experience

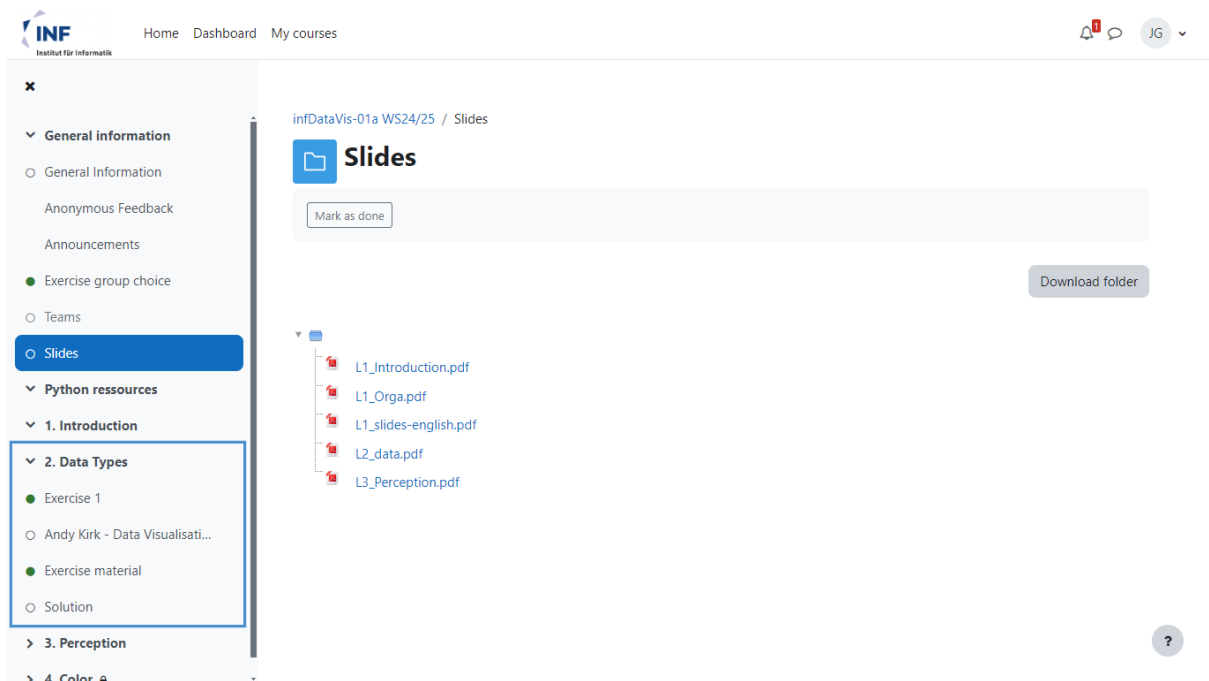
The effect created is just that a plot is visible when you look at the figure for the 1<sup>st</sup> time.

**Bonus: Recreate broth graphs using randomized data**

Code for the game is in 'lab2\_task3.ipynb'

## 4 GESTALT THEORY – USER INTERFACE DESIGN

- a. Consider the moodle and look for Gestalt principles. Make a screenshot and highlight the Gestalt principles used in the user interface design with a short explanation.



1. Law of Past Experience: You know that the headings of each 'menu' have an arrow next to them, allowing for a dropdown, revealing more subheadings. The green circle also indicates that the activity is done. The red number next to the bell means that there are unseen messages.
2. Law of Enclosure: A box appears around the dropdown menu of each heading.
3. Figure and Ground: The red background is in fact visible as a background for the number of unseen notifications, and not the main figure.
4. Law of Proximity: You know there are different sections to the website, such as the ribbon, dropdown menu, and main display of information.
5. Law of Common Fate: the dropdown menu moves all together when you scroll up or down.

**b. Optimize the design of the Moodle by editing the screenshot! Explain your optimization by using Gestalt theory principles.**

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Exercise 1

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Exercise material

- Solution

3. Perception

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They should have a similar distance between each other (Law of Similarity).

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alternatives like [colab](#) and [Codespaces](#) (direct link) are easier to set up. we can discuss this during the exercise.

Why Python? `>>> import this`

## 1. Introduction

Podcast: [Introduction podcast](#)

Optional Reading:

[A Brief History of Data Visualization](#)

[Jarke J. van Wijk - The value of visualization](#)

## 2. Data Types

Podcast:

[Podcast lecture on data](#)

[Slides](#)

**Reading for exercise 1:**

[Andy Kirk - Data Visualisation, Section on Data Types](#)

Pages 111 - 115

### Exercise 1

~~All tasks must be submitted.~~ The first task will be worked on together (present exercise). Exercises can

The sections could be framed, to more clearly indicate the sections (Law of Enclosure).

## **5 OPTIONAL: GESTALT THEORY**

**Open your eyes! Look for Gestalt laws in CAU buildings/hallways/rooms. Highlight the Gestalt principles used by the architect with a short explanation.**



Law of Symmetry, Similarity, Figure and Ground



Law of Similarity, Symmetry, Proximity, Past Experience





Similarity, Symmetry, Prägnanz, Enclosure



Symmetry, Similarity, Figure and Ground, Proximity, Enclosure



Past Experience, Figure and Ground, Similarity