

Moderní způsoby komunikace s informačními systémy

- Ohodnocování kvality UI

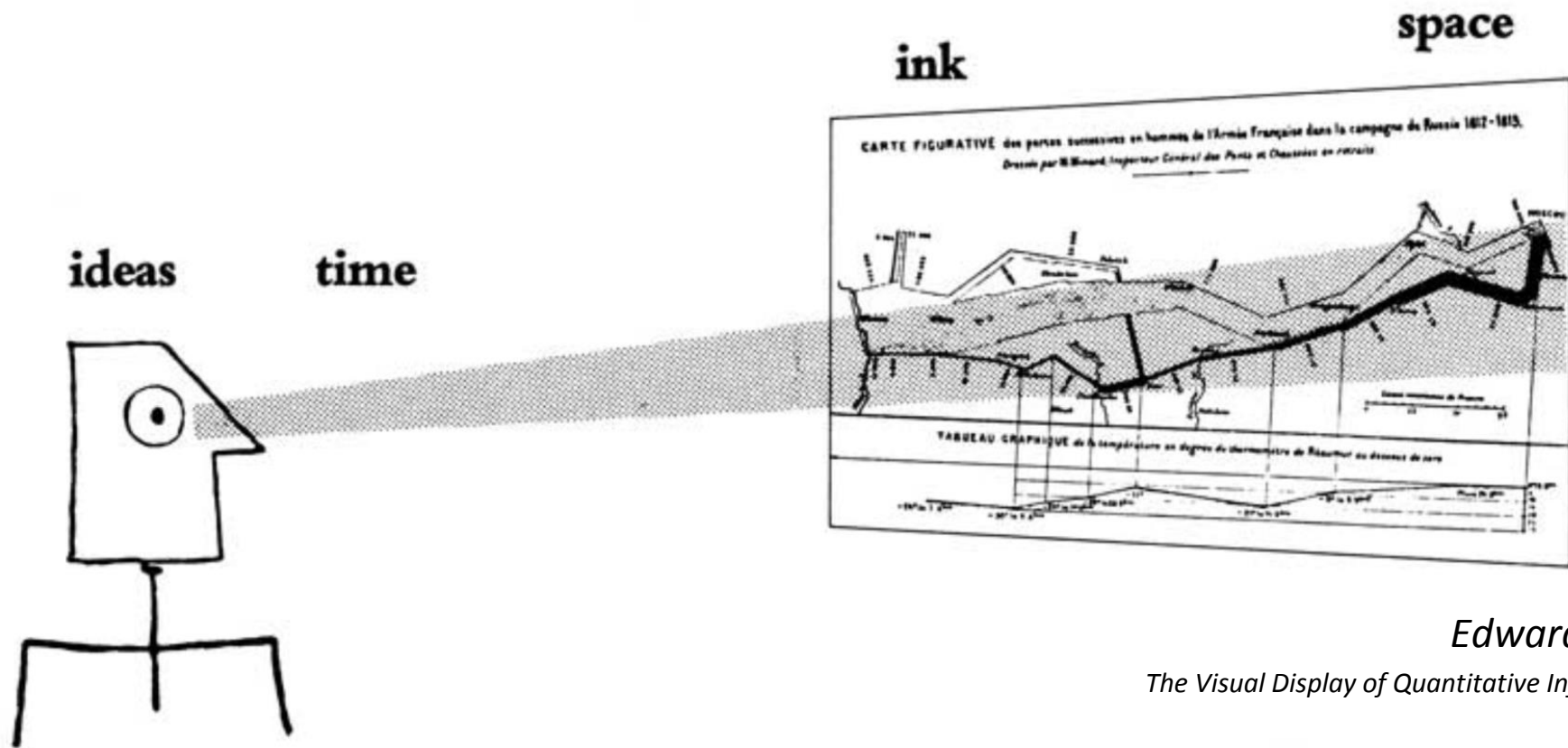
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Pojďte dělat vědu na FIT



18. 4. 2018



Edward Tufte
The Visual Display of Quantitative Information

Pokusme předvídat, jak bude uživatel vnímat zobrazovaná data.

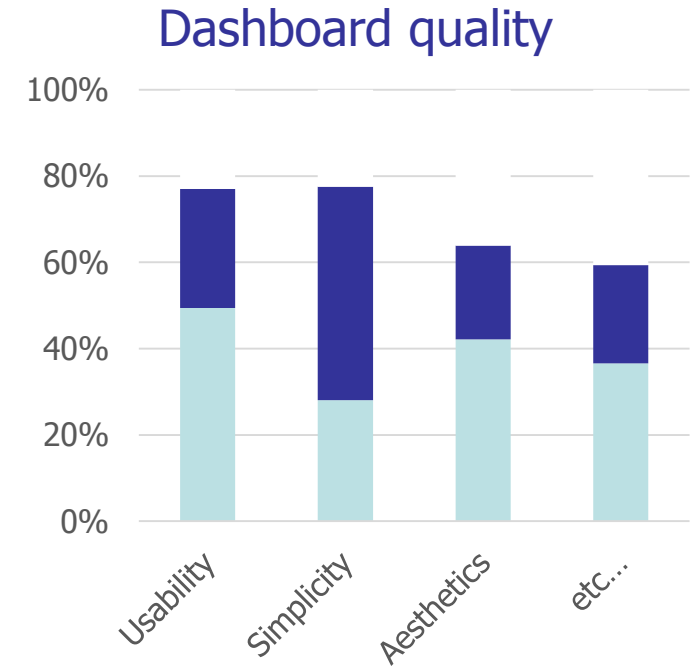
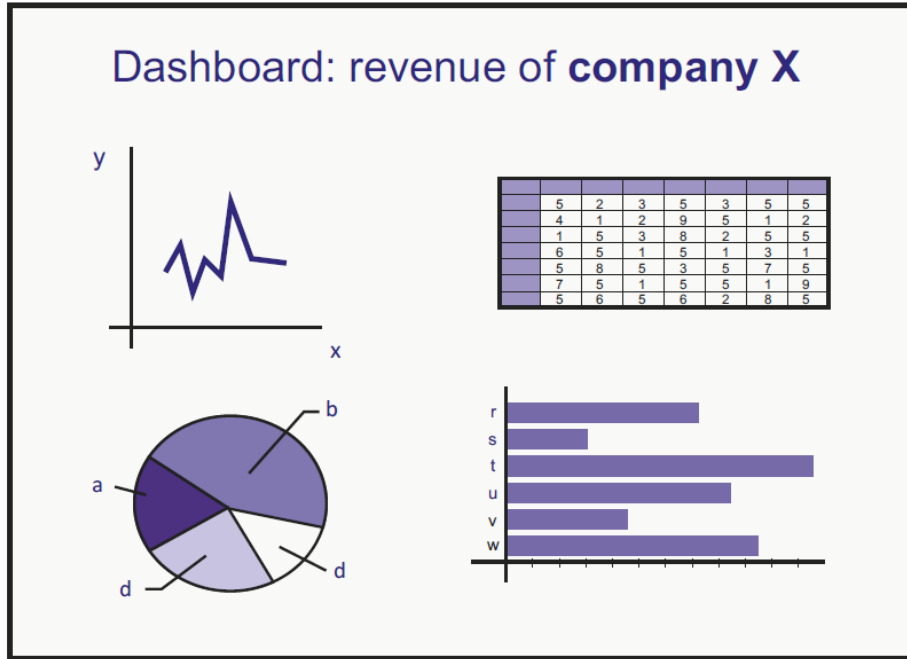
Example of sales dashboards: **Stephen Few** – Information Dashboard Design



Je to dobré!



Nic moc 😞



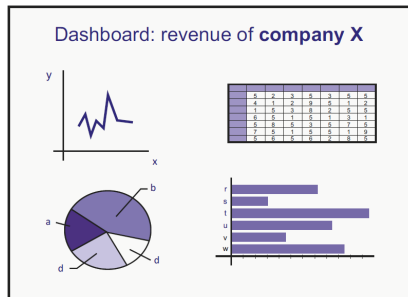
metriky pro ohodnocení UI

1. UI

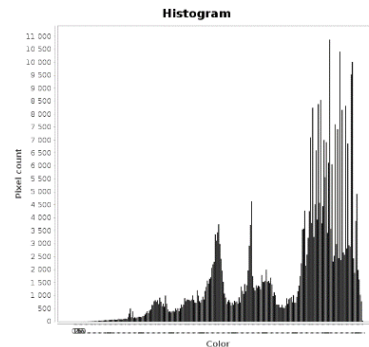
2. Interní reprezentace

3. Atributy

4. Klasifikace



```
<html>
  <title>
</title>
  <body>
    ...
  </body>
</html>
```



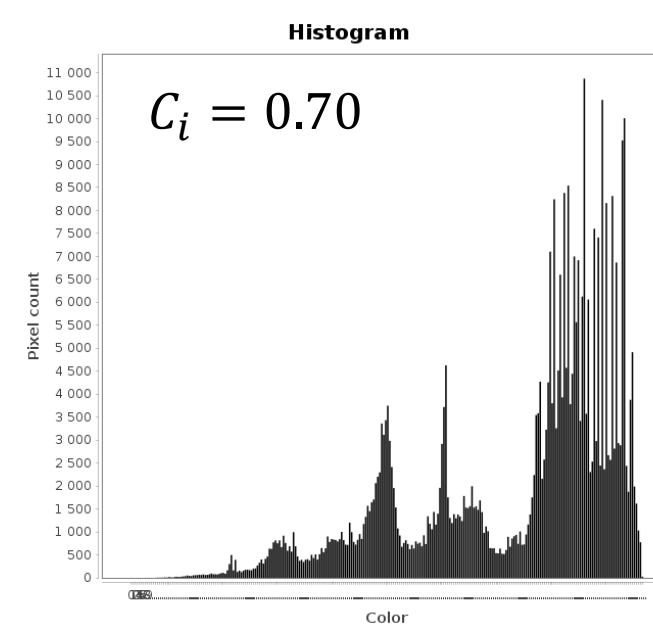
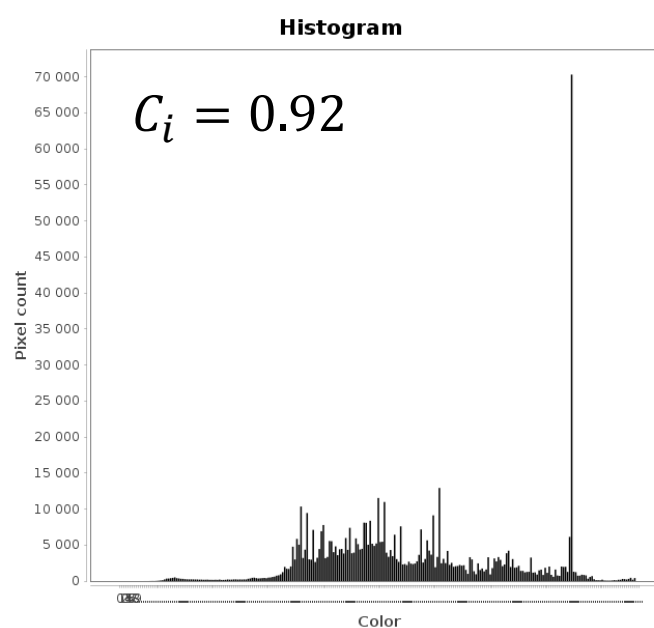
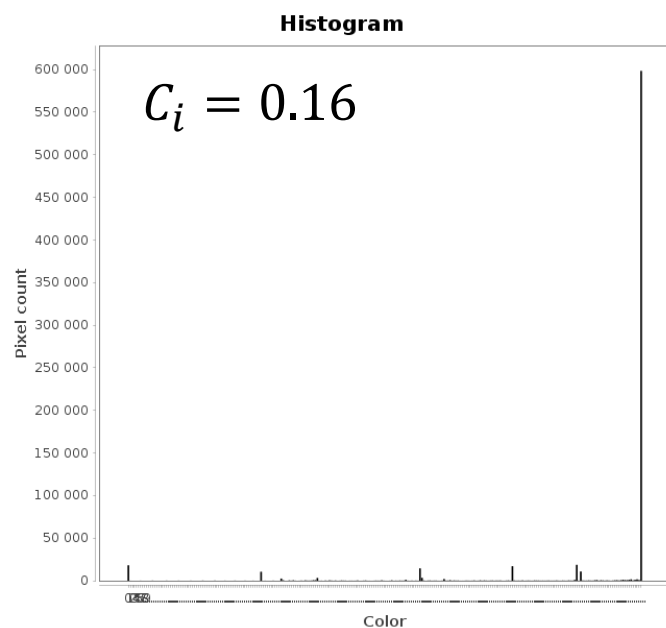
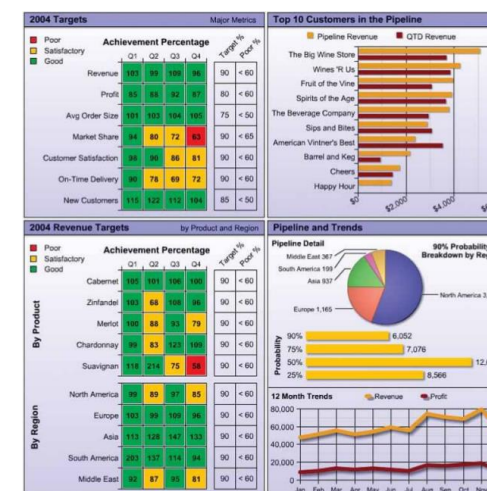
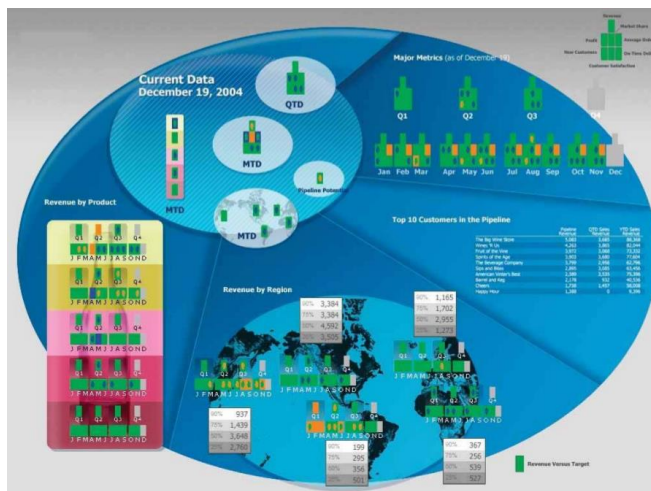
```
element:
  type: CHART
  x: 10
  y: 25
  width: 100
  height: 50
```

```
colorfulness = 0.25
balance = 0.92
symmetry = 0.85
...
```

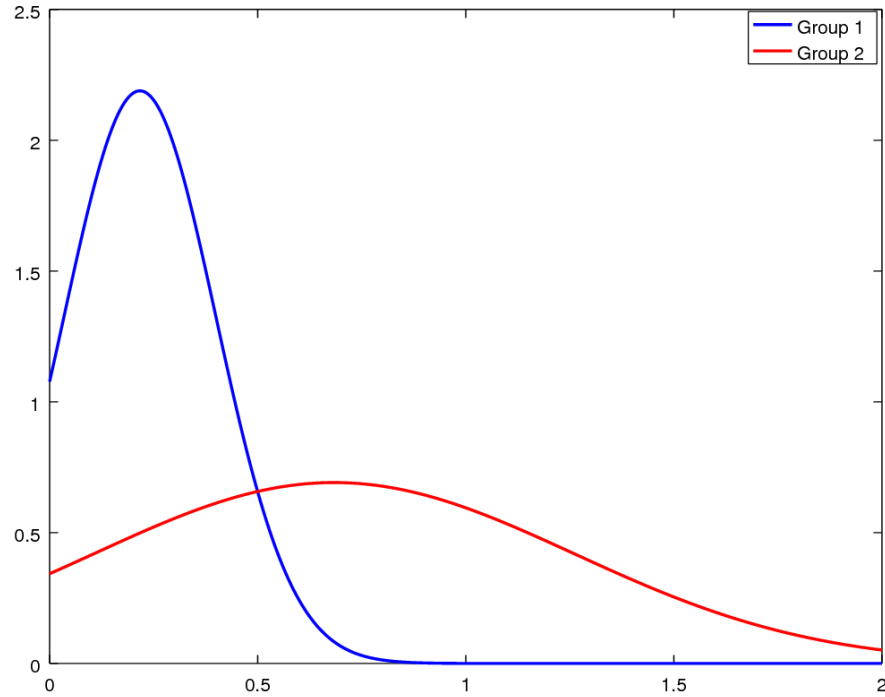
Group 1:
Well-designed

Group 2:
Poorly
designed

Group 3:
...



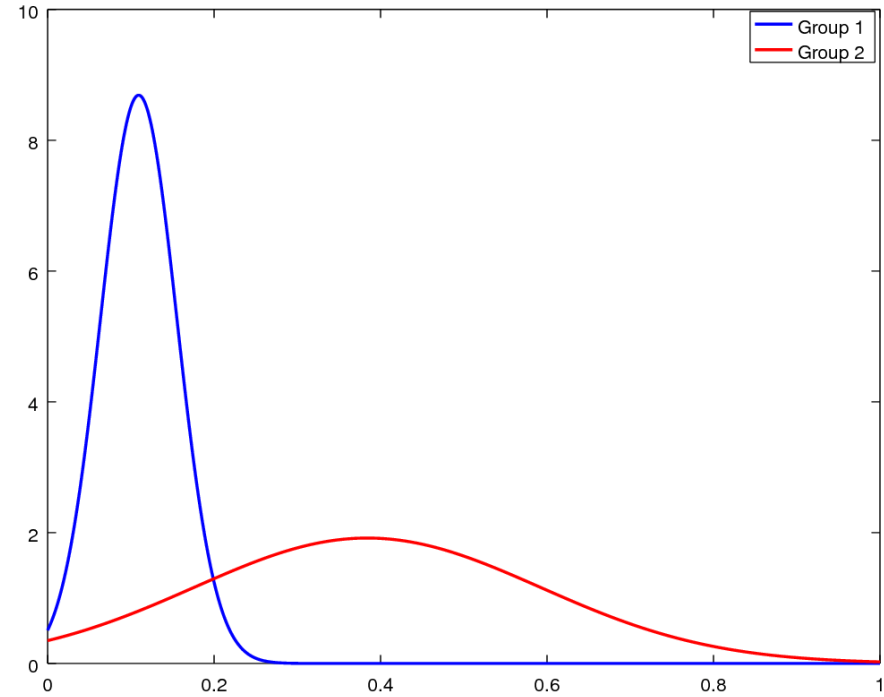
CIE saturation



$$\mu_1 = 0.217 \quad \sigma_1 = 0.182$$

$$\mu_2 = 0.684 \quad \sigma_2 = 0.577$$

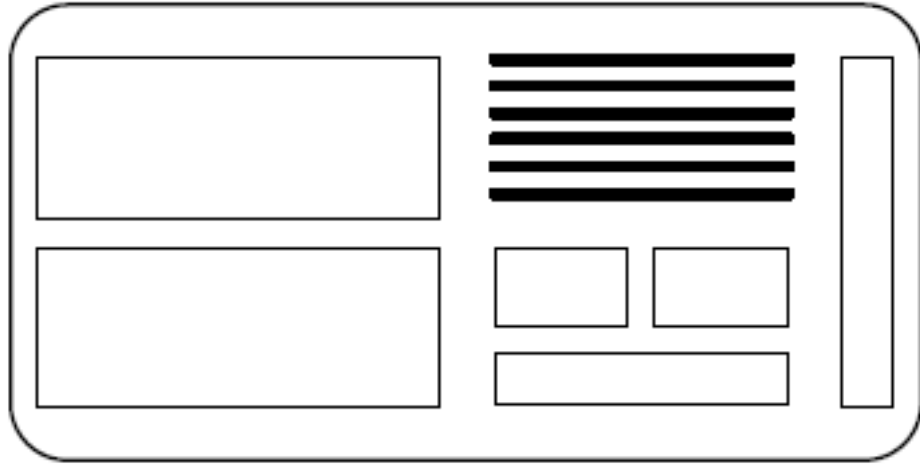
HSB saturation



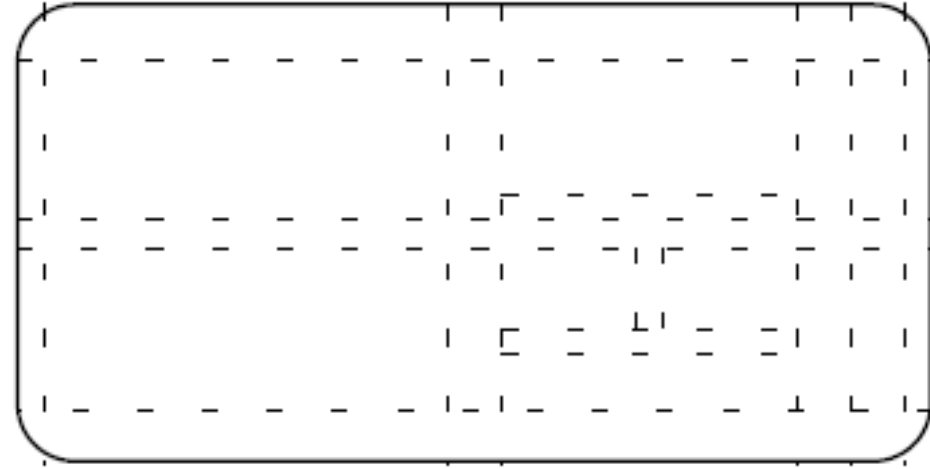
$$\mu_1 = 0.109 \quad \sigma_1 = 0.046$$

$$\mu_2 = 0.384 \quad \sigma_2 = 0.208$$

UI



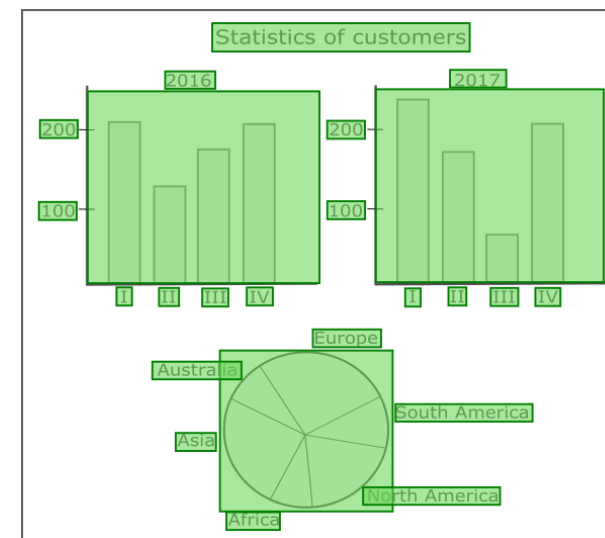
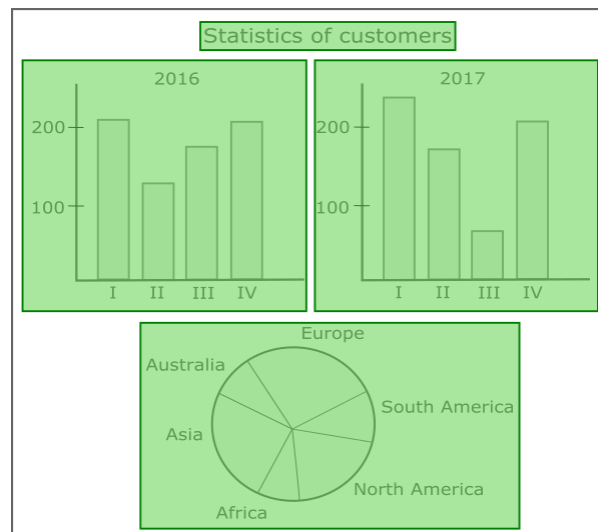
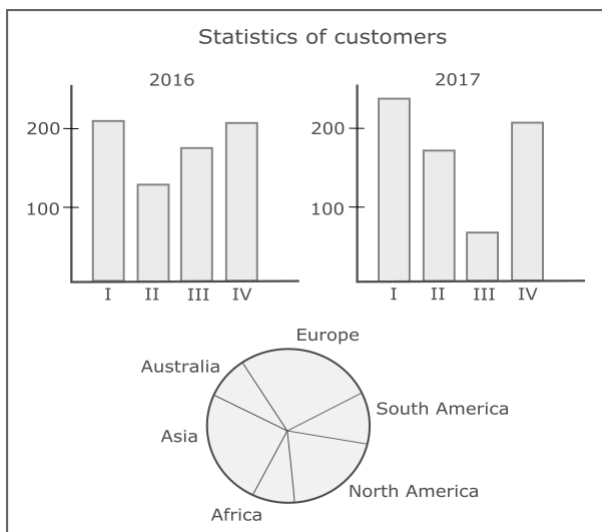
mřížka objektů



Vanderdonckt & Gillo, 1994

Metriky: Balance, Symmetry, Equilibrium, Density, Simplicity, ...

Ngo et al., 2000-2003



Subjektivní vnímání vs. obecná pravidla (Gestalt principy)

134567915648471446475841

418944618548948957484994

562789561261289512631256

134**5**6791**5**648471446475841

418944618**5**489489**5**7484994

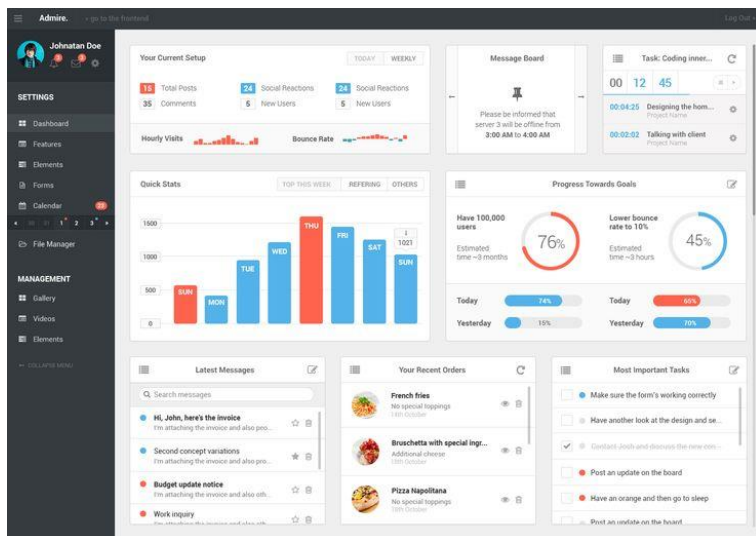
562789**5**61261289**5**126312**5**6

Gestaltismus (~1912)

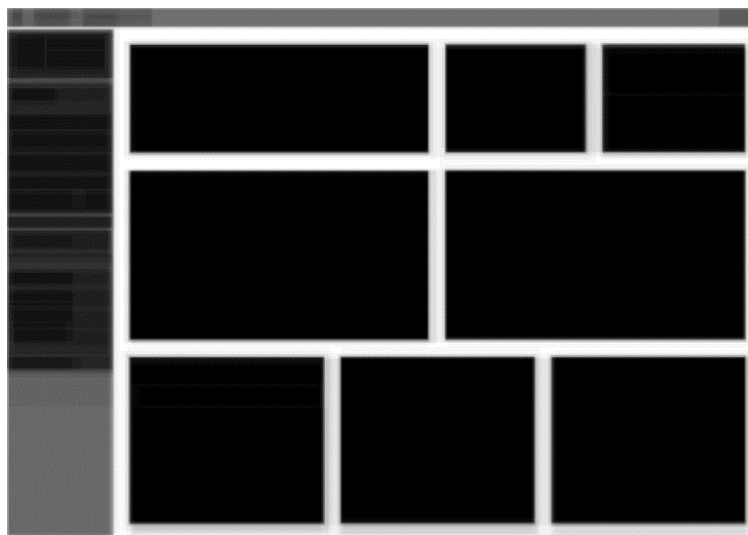
...

Jäkel, F. et al. (2016). An overview of quantitative approaches in Gestalt perception.

UI



heatmap



entropy

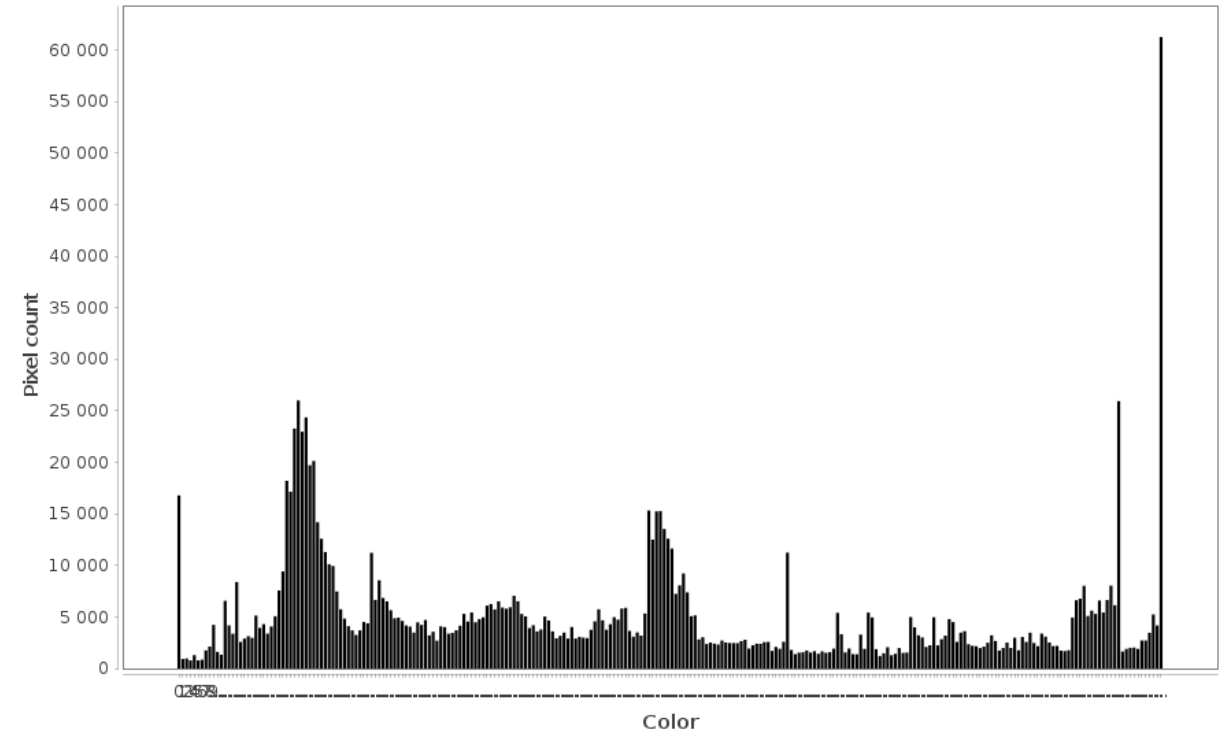


$N = 251$ uživatelů



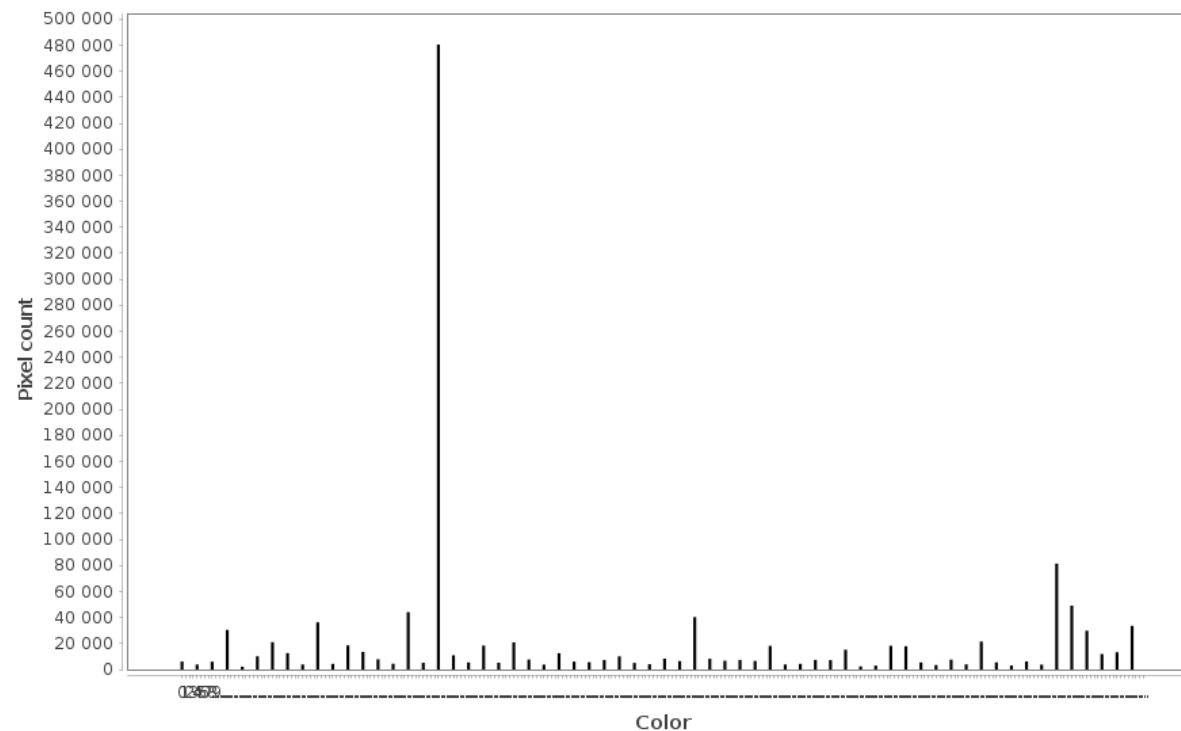


Histogram



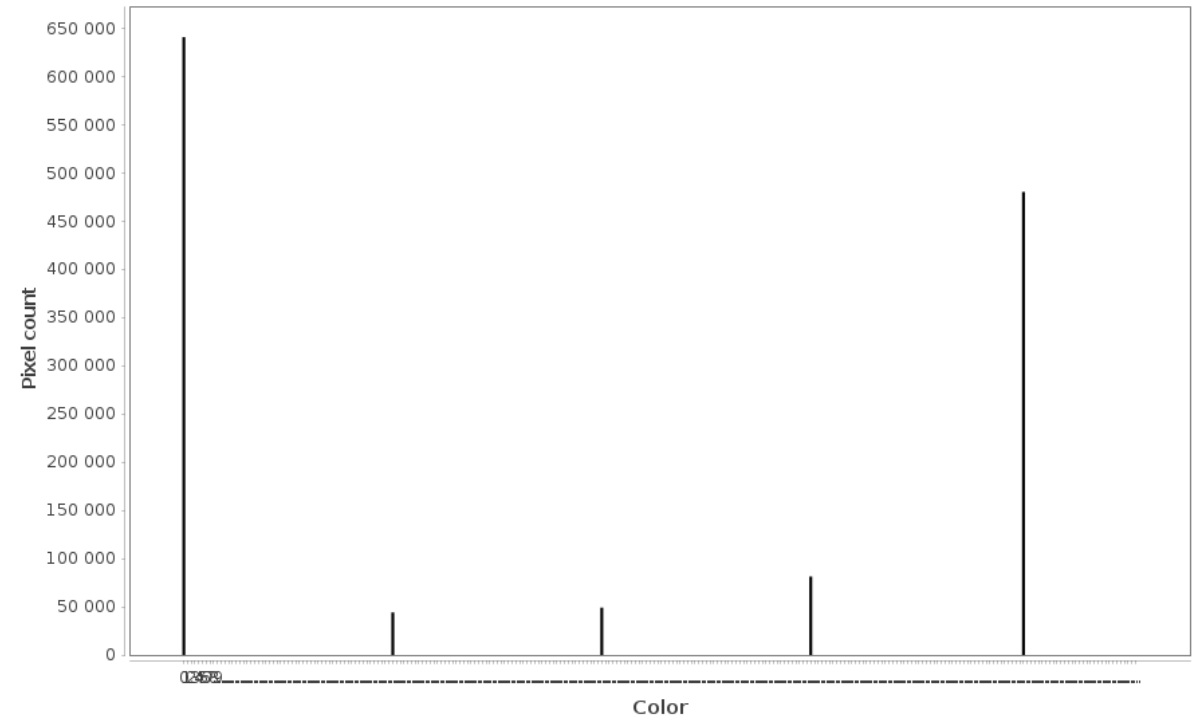


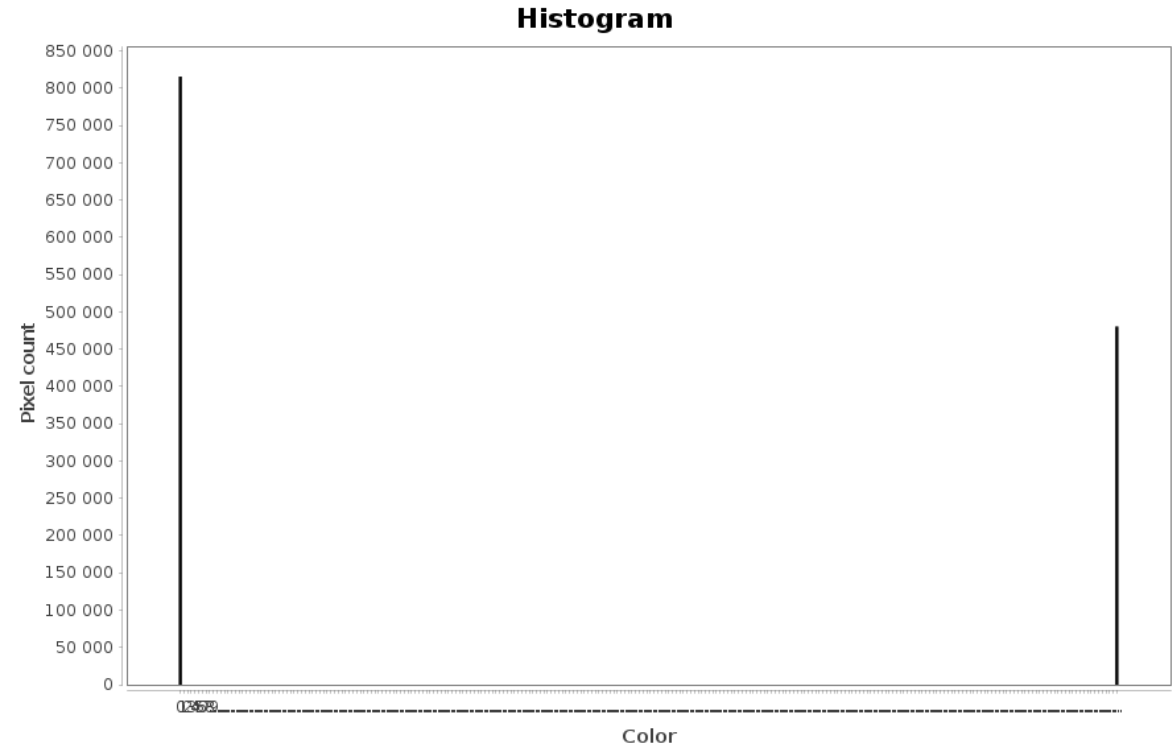
Histogram



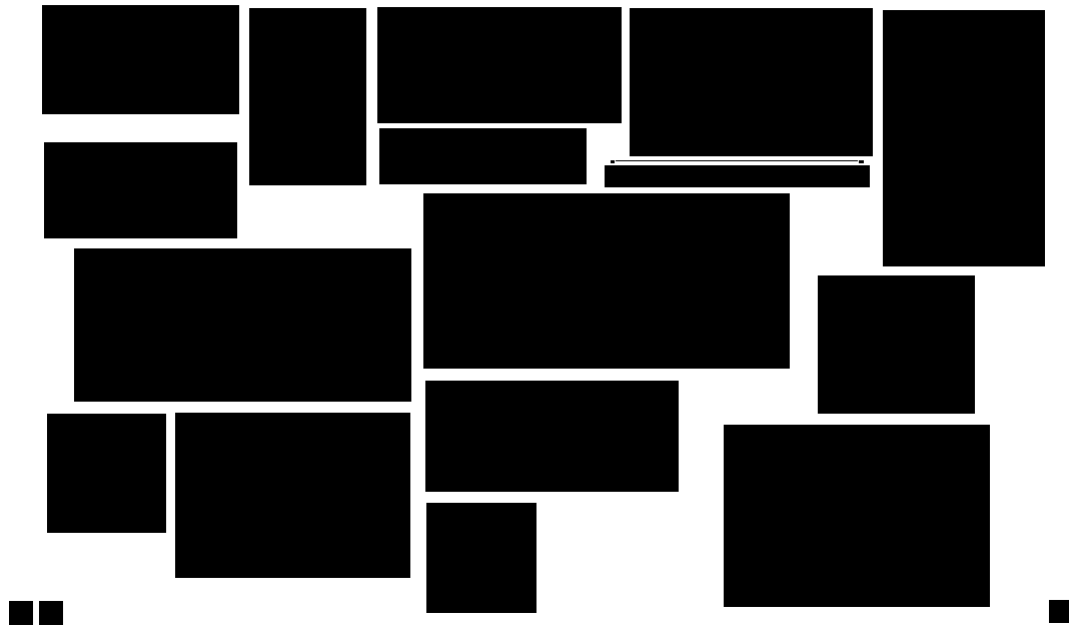


Histogram

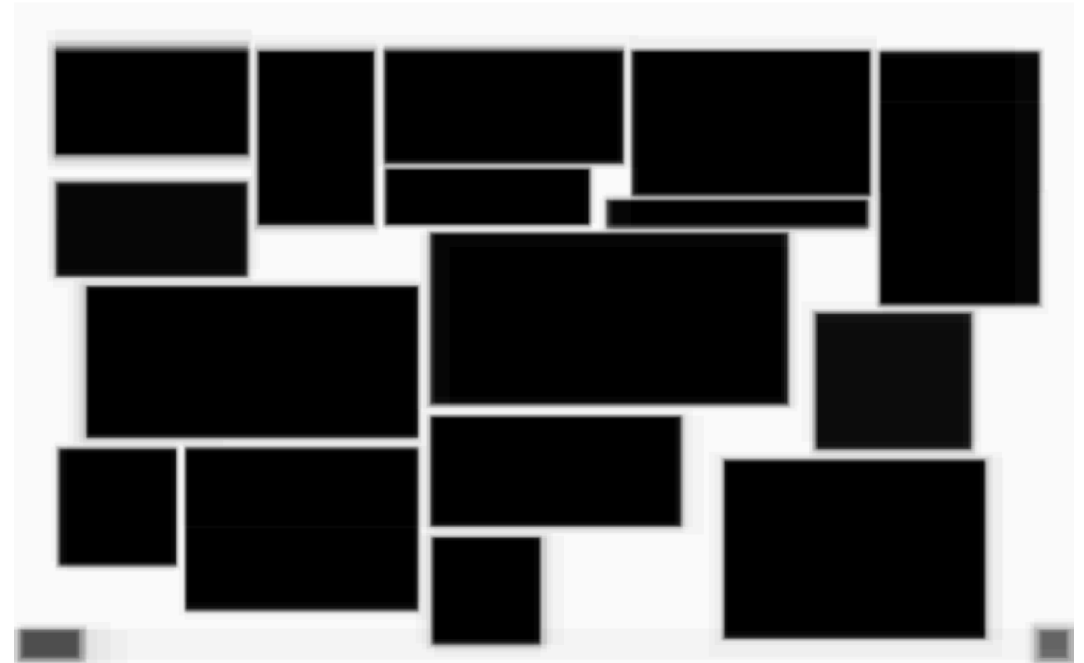




result

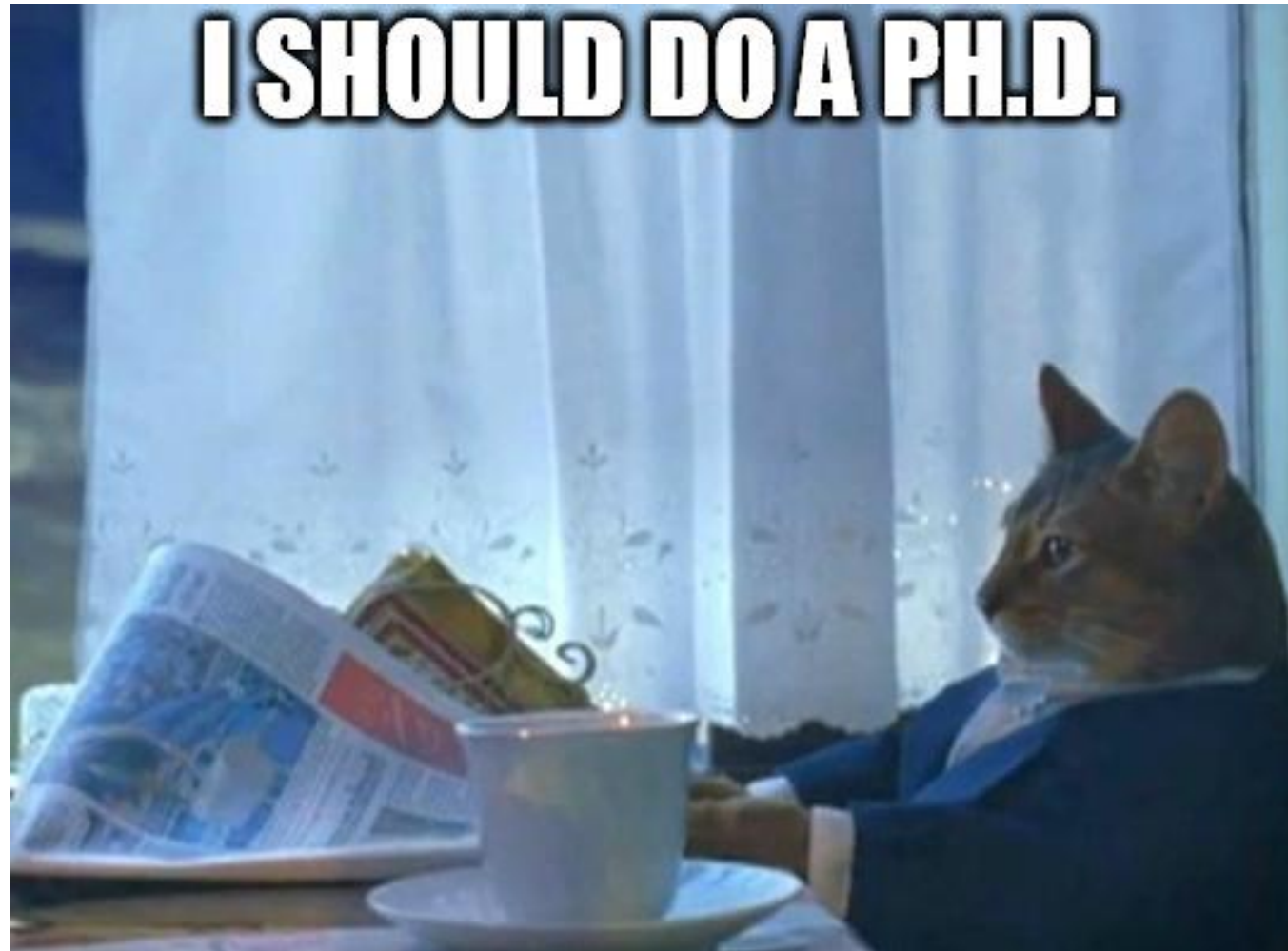


heatmap



Vstup pro metriky (balance, symmetry, ...)

- vylepšit převod UI do interní reprezentace
- rozšířit model interní reprezentace
- generátor trénovací množiny vzorků (Olena Pastushenko)
- zkoumat pohled uživatelů
- hledat nové metriky, které dokáží zohlednit subjektivní pohled uživatele
- porovnat vlastnosti různých druhů UI



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