

## 03-venn-diagram

2024-09-01

Venn-diagram specification: (Abc, aBc, ABc, abC, AbC, aBC, ABC)

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[ ]: from matplotlib import pyplot as plt
import numpy as np
from matplotlib_venn import venn3, venn3_circles
plt.rcParams['font.size'] = 12
plt.figure(figsize=(6,6))
v = venn3(subsets=(63-36, 44-36, 36-3, 0, 0, 0, 3), set_labels =_
    ↳('Mitverschulden', '$ 254 BGB', '$ 341 ZGB'))
for patch_id in ['100', '110', '010', '111']:
    p = v.get_patch_by_id(patch_id)
    p.set_linewidth(0)
    p.set_alpha(0.25)
v.get_patch_by_id('111').set_alpha(0.5)
v.get_patch_by_id('100').set_color('lightblue') # blue darkblue
v.get_patch_by_id('110').set_color('blue') # green blue
v.get_patch_by_id('010').set_color('lightblue') # gold lightblue
v.get_patch_by_id('111').set_color('blue') # lightgreen cyan
v.get_label_by_id('111').set_position(v.get_label_by_id('111').get_position() -_
    ↳np.array([-0.025, 0.1]))
v.get_label_by_id('110').set_position(v.get_label_by_id('111').get_position() -_
    ↳np.array([-0.0, -0.35]))
v.get_label_by_id('100').set_position(v.get_label_by_id('110').get_position() -_
    ↳np.array([0.625, -0.0]))
v.get_label_by_id('010').set_position(v.get_label_by_id('110').get_position() -_
    ↳np.array([-0.37, -0.0]))
v.get_label_by_id('C').set_position(v.get_label_by_id('111').get_position() -_
    ↳np.array([-0.15, 0.15]))
plt.annotate('', xy=v.get_label_by_id('111').get_position() - np.array([0., 0.
    ↳0.035]), xytext=(40,-30),
            ha='center', textcoords='offset points',_
    ↳bbox=dict(boxstyle='round,pad=0.5', fc='gray', alpha=0.1),
            arrowprops=dict(arrowstyle='-', connectionstyle='arc3,rad=0.
    ↳0',color='gray'))
plt.annotate('', xy=v.get_label_by_id('B').get_position() - np.array([-0.025, 0.
    ↳0.025]), xytext=(0,-40),
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        ha='center', textcoords='offset points',  

        ↪bbox=dict(boxstyle='round,pad=0.5', fc='gray', alpha=0.1),  

        arrowprops=dict(arrowstyle='-', connectionstyle='arc3,rad=0.  

        ↪0',color='gray'))  

plt.annotate('', xy=v.get_label_by_id('A').get_position() - np.array([0.05, 0.  

        ↪025]), xytext=(40,-40),  

        ha='center', textcoords='offset points',  

        ↪bbox=dict(boxstyle='round,pad=0.5', fc='gray', alpha=0.1),  

        arrowprops=dict(arrowstyle='-', connectionstyle='arc3,rad=0.  

        ↪0',color='gray'))  

plt.tight_layout()  

# supported formats: eps, pdf, pgf, png, ps, raw, rgba, svg, svgz  

for ext in ['png', 'svg', 'pdf', 'eps', 'ps']:  

    plt.savefig(f'../figures/abbildung-1.{ext}')

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