

DS4200 Assignment 1

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Part 1 - Survey

Part 2 - GitHub and Tableau

Part 3 - Lie Factor Calculation

Visualization #1

If a flat (non-tilted) pie chart,
46% = 165.6 degrees
54% = 194.4 degrees

In this graph,
46% = 150 degrees
54% = 210 degrees



$$\text{Lie Factor} = \frac{\text{size of effect in graph}}{\text{size of effect in data}}$$

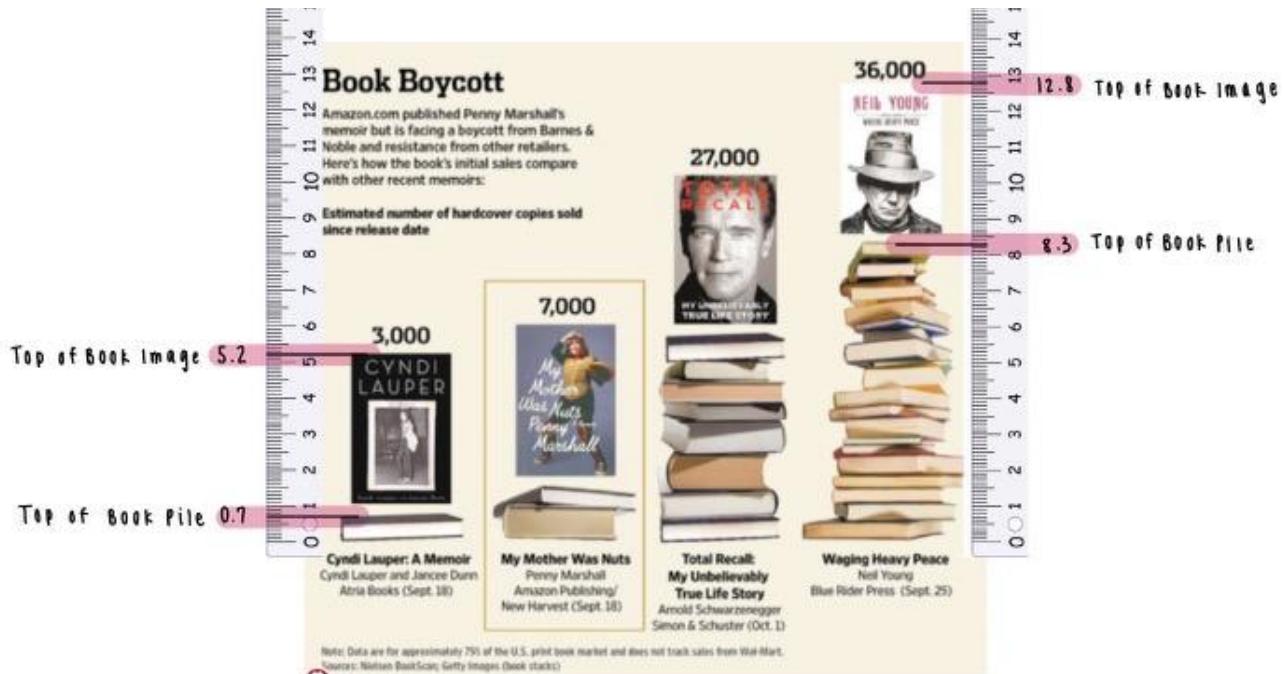
$$\text{Graphic: } \frac{210 - 150}{150} = 0.4 \times 100 = 40\%$$

$$\text{Data: } \frac{194.4 - 165.6}{165.6} = 0.174 \times 100 = 17.39\%$$

$$\text{Lie Factor: } \frac{40\%}{17.39\%} = 2.3$$

This visualization does have a lie factor. The lie factor for this graph is 2.3. This graph has a lie factor that is over 1, so it is overstating. It is not accurately showing how much the "Yes" percentage, 46%, should be visually represented. It should be at 165.6° instead of 150°.

Visualization #2



$$\text{Lie Factor} = \frac{\text{Size of effect in graph}}{\text{Size of effect in data}}$$

$$\text{DATA : } \frac{36000 - 3000}{3000} = 11 \times 100 = 1100\%$$

$$\text{TOP OF BOOK IMAGE : } \frac{12.8 - 5.2}{5.2} = 1.46 \times 100 = 146\%$$

$$\text{TOP OF BOOK PILE : } \frac{8.3 - 0.7}{0.7} = 10.86 \times 100 = 1086\%$$

$$\boxed{\text{TOP OF BOOK IMAGE Lie Factor : } \frac{146\%}{1100\%} = 0.133}$$

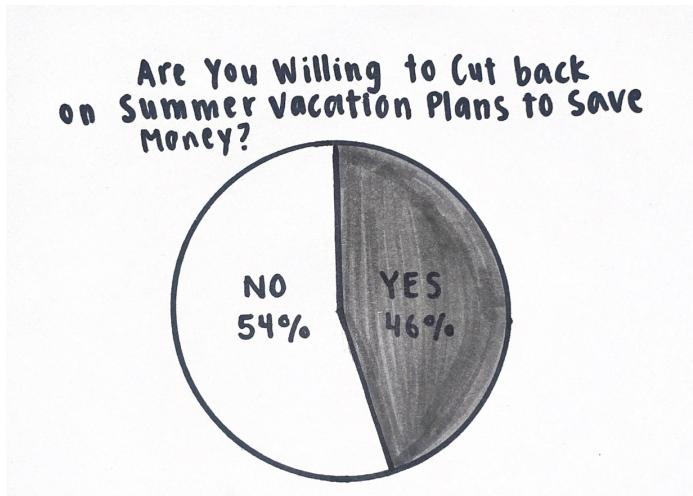
$$\boxed{\text{TOP OF BOOK PILE Lie Factor : } \frac{1086\%}{1100\%} = 0.99}$$

This visualization does have a lie factor when it is measured to the top of the book's image. The lie factor when measured to the top of the book's image is 0.133. This lie factor is less than 1, so it is understating. When the pile of books is measured, there is not really a lie factor. The lie factor is calculated to be .99 which is almost equal to 1, so it is slightly understated.

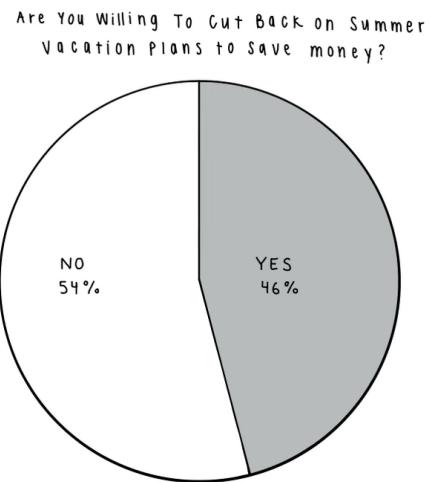
Part 4 - Visualization Re-Design

Visualization #1

Drawn on paper:

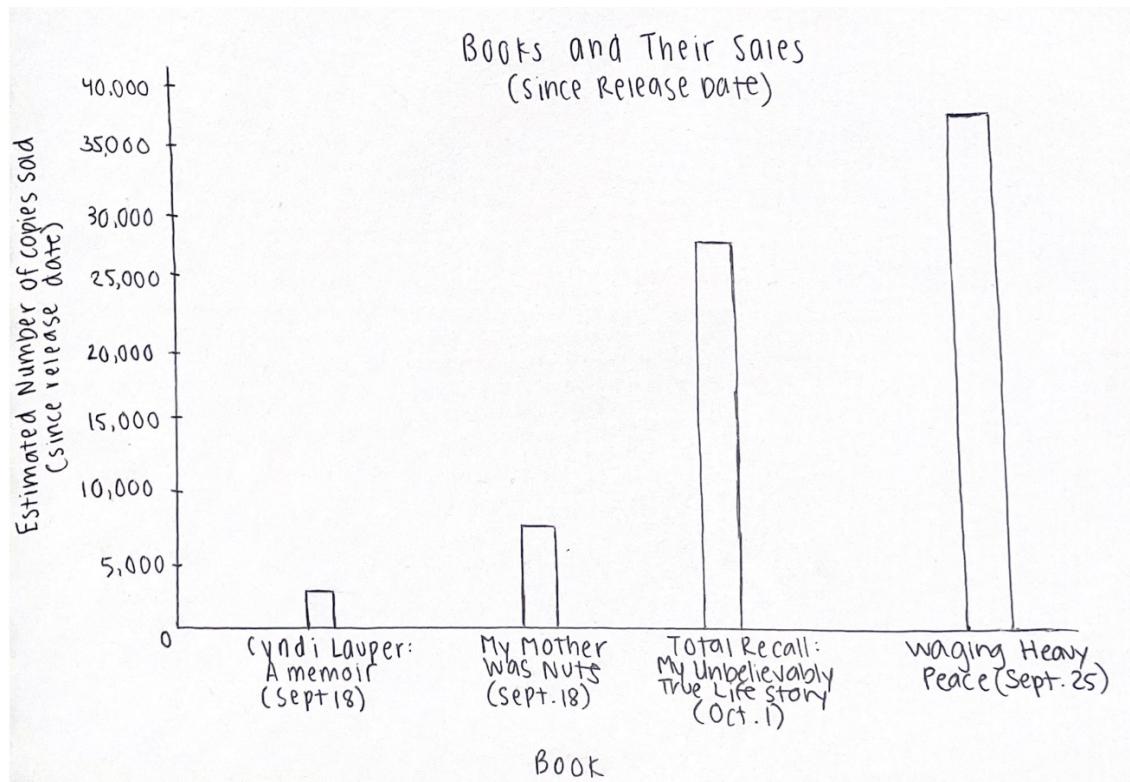


Drawn on iPad:



Visualization #2

Drawn on paper:



Drawn on iPad:

