**DSCI 310**

**Activity on visual perception and elemental groupings**

Consider the following headline:

***Despite growth, rural Americans have consistently lower levels of smartphone ownership than urbanites and suburbanites***.

Suppose that the headline is based on the following data:

|  |  |  |
| --- | --- | --- |
| Year | Residence | % with smartphone |
| 2011 | Rural | 21 |
| 2011 | Suburban | 37 |
| 2011 | Urban | 38 |
| 2016 | Rural | 58 |
| 2016 | Suburban | 78 |
| 2016 | Urban | 77 |
| 2021 | Rural | 80 |
| 2021 | Suburban | 84 |
| 2021 | Urban | 89 |

The visualization below has been created to accompany this headline:

Chart, bar chart

Description automatically generated

(Data and headline motivated by [Pew Research article](https://www.pewresearch.org/fact-tank/2021/08/19/some-digital-divides-persist-between-rural-urban-and-suburban-america/); 2016 percentages “guesstimated” here.)

1. Which data points does the visualization show as a single “elemental grouping,” i.e., which data points does the visualization communicate “belong together”? Identify the Gestalt principles that employed to communicate these groupings.
2. Which data points constitute a single elemental grouping (belong together), according to the headline? Where are these data points in the visualization? What aspects of the design are working against seeing these sets of data points as elemental groupings?
3. Sketch at least two redesigns of this visualization that you think would better accompany the headline provided. For each, identify the Gestalt principles you are using to emphasize the elemental groupings and facilitate their comparisons.