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A5 Design Doc Writeup

For this experiment, we will ask participants to estimate the relative areas of segments in pie and polar area charts in terms of percentage. The two segments to compare will be marked by a fill color in order to control for the potential biases introduced by the position of the dots.

For each participant, we will randomly generate 30 datasets for a total of 60 graphs. For each dataset, two segments will be randomly chosen to be compared by value. We will control for a total of 7 segments per graph. Each data set will be shown to the participate once as a pie chart and once as a polar area chart. Both graphs will be implemented in black, white, and a fill color, which will be the same for both.

Hypothesis 1:

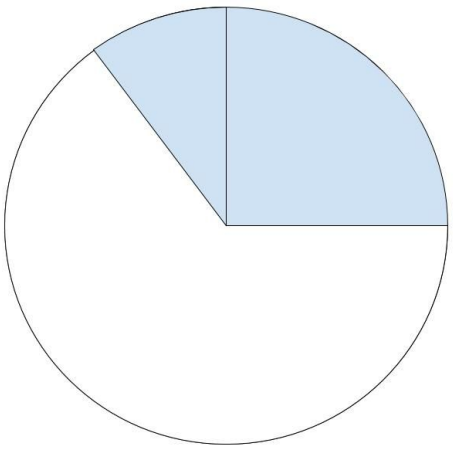
Participants will perform better (having high accuracy) on pie charts.

Hypothesis 2:

Participants will perform better when the angle between the two segments is smaller

Visualizations:

- Pie
    - X values map to a distinct segment with the same radius
    - Y values map to the angle of the segment
    - This will be implemented as a Pie class



- Polar Area
    - X values map to a distinct segment with the same theta

- Y values map to segment radius
- This will be implemented as a PolarArea class