**VISUALIZATION**

# The three guiding principles for Data Visualization are as follows:

1. Design and layout matters
2. Avoid clutter
3. Use color purposely and effectively

# Figure 1:

* Figure 1 depicts the percentage of users for different browsers over the duration of 5 years.

Chart, bar chart

Description automatically generated

The 3-dimensional representation is not at all suitable for this data as it violates 1st & 2nd guiding principles for data visualization:

1. It is difficult to follow the height of each bar to the correct Y-value
2. Some of the values for the rear dimensions as they are hidden by the bars of the values in front of them
3. Even Labelling of each bar will not help communicate the level Y value.
4. Representation seems too confusing and difficult to read.
5. This data could have been better represented with stacked bar chart or even line chart as we have sequence of 5 continuous years

# Figure 2

Figure 2 depicts number of card games played at a place observed over 2 days of a week

Chart, line chart

Description automatically generated

The representation is not at all suitable for this data as it violates basic guiding principles for data visualization:

1. Line charts are meant to display an expression against a dimension list that is continuous, where the values relate to each other in a specific order, connecting two points gives a wrong perception of data.
2. This data would have better been presented with a bar chart.

# Figure 3

Figure 3 depicts percent of total US population by race and ethnicity from 1960-2060

Map

Description automatically generated

The representation is not at all suitable for this data as it violates all three guiding principles for data visualization:

1. The color palate used is not color blind friendly
2. There is a lot of confusion in visualization due to cluttering
3. Use of Obscure shape to represent a value.
4. Data appears to be related to the 50 United States. But the data has nothing to do with geographical analysis, so use of map is not appropriate.
5. The west coast corresponding to the year 1960 and time moving forward to the east coast which represents 2060, this sequence with map behind does not seem to make sense
6. The percentages do not add up to 100 for any of the categories presented.
7. The best way or better way to present this data would have been a time series stacked line chart, as it will help to clearly see the important parts of the chart where the lines experience real movement.