**Data Visualization with Reports and Dashboards:**

* **Control** - how you focus the attention of your audience
* **Correctness** - makes sure that your information is accurate and that there are no spelling mistakes
* **Clarity** - selecting the right visualization tool for communicating your message, making sure the visualization is easy to interpret and visually crisp, and using fonts and sizes that are easy to read.
* **Consistency** - using the same design and documentation elements throughout your report or dashboard to give your visualization a cohesive and complete feel.
* **Concentration** - using visuals to focus your audience's attention on the most relevant information without overwhelming them with details.

Data Type Considerations

Delivery considerations

Operational considerations – Access permissions

**Exploring Visualization Types**

1. Charts

* **Line chart** – Relationship between time and variable
* **Pie Chart** - presents categorical, or discrete, data as individual slices of the pie. When using a pie chart, ensure that you label each pie slice appropriately
* **Bar chart** - Similar to a pie chart
* **Stacked chart** - starts with a bar chart and extends it by incorporating proportional segments on each bar for categorical data.
* **Scatter chart** - uses a dot for each observation in a data set to show the relationship between two numeric variables.
* **Bubble chart** - scatterplot where the size of each dot is dependent on a third numeric variable

1. **Histogram** - chart that shows a frequency distribution for numeric data
2. **Maps** - People frequently use maps to convey the location of a country, town, or individual address

* **Geographic maps** - location-related data
* **Heat maps** - visualization that uses color and location to illustrate significance.
* **Tree maps** - uses rectangles whose area depicts a proportional representation of hierarchical data. Tree maps are effective at showing the distribution at levels within the hierarchy

1. **Waterfall** - displays the cumulative effect of numeric values over time. Waterfall charts facilitate an understanding of how a series of events impact an initial value.
2. Infographic - minimize text in favor of visual elements to represent a topic in a format that is easy to understand
3. Word cloud - visualization that uses shape, font size, and color to signify the relative importance of words. Word clouds are effective at visualizing free-form text responses.

**Comparing Report  Types;**

1. Dynamic and static
   * **Static** - pull data from various data sources to reflect data at a specific point in time
   * **Dynamic** - real-time access to information
2. **Ad Hoc -** one-time reports, use existing data to meet a unique need at a specific point in time
3. **Self-Service (On-Demand)** - allow individuals to answer questions that are unique to them at a time of their choosing. Instead of having data pushed to them, an attribute of self-service reporting is that individuals can pull a report at the time of their choosing
4. **Recurring Reports** - provide summary information on a regularly scheduled basis. Typically, recurring reports get delivered to their audience immediately after creation. For example, a company's sales leader will want monthly, quarterly, and annual sales numbers available regularly
5. Tactical and Research
   * **Tactical reports** - provide information to inform an organization's short-term decisions. Tactical information helps organizations accomplish initiatives like constructing a building, opening a manufacturing plant, or shipping products from one location to another
   * **A research report** helps an organization make strategic decisions. To achieve strategic objectives, an organization executes multiple tactical initiatives. Where a tactical report informs a decision with a finite scope and duration, research reports inform the development of an overarching strategy.