

# Lesson Plan

## Introduction to Tableau

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### Special Instructions for Students

- 1) **We will use Tableau Desktop 2021.3. This software can be downloaded from the Tableau website (<http://www.tableausoftware.com/products/desktop/download>). You can apply for a 14-day trial license for free. It is recommended that you download and install the software prior to class commencing**
- 2) I will have to teach some fundamental concepts of data visualisation before embarking on the practicalities of using Tableau Desktop software. I will achieve this by:
  - a. Running hands-on sessions on loading data files and charting. I will use Tableau sample files, like Superstore Sales (Excel).xls and coffee chain, to teach the data loading concept, and use the Tableau Desktop to create charts.
  - b. It is important to understand that Tableau Desktop is constantly evolving and the interface can become outdated very quickly. Therefore, there is an element of “self-help” where, beyond the class, a student must update and continue to upgrade their knowledge over time.
- 3) There is extensive e-learning material out there which can supplement the in-class experience:
  - a. For students who need revision or who need examples of software usage and demonstrations on Tableau Online Help, a good website for beginners is <https://help.tableau.com/current/guides/get-started-tutorial/en-us/get-started-tutorial-home.htm>

## Seminar Format

Topics to be Covered	Learning Outcomes to be Achieved	Summary and Discussion of Key Concepts, Theories, Principles	Class Activities to Enhance Learning	Duration
Part 1 and Part 2 Foundation of the Science of Data Visualisation	<ol style="list-style-type: none"> <li>1. Describe and Understand the 2 fundamental types of Data</li> <li>2. Describe what Data Visualisation is.</li> <li>3. Describe the benefits and basic stages of Data Visualisation.</li> <li>4. Understand data attributes.</li> <li>5. Understand what metadata is.</li> <li>6. Prepare data using Data Visualisation software.</li> </ol>	Online Lecture	Class Discussion	25 mins
Break				5 mins
Part 3, 3a and 3b: Foundation of the Art of Data Visualisation	<ol style="list-style-type: none"> <li>1. Introduce Tableau, including understand the basic Tableau Interface and different file extensions</li> <li>2. Understand the language of Tableau including union, join, pivot, relationships and functions</li> </ol>	Online Lecture	Class Discussion	25 mins
Break				5 mins

Topics to be Covered	Learning Outcomes to be Achieved	Summary and Discussion of Key Concepts, Theories, Principles	Class Activities to Enhance Learning	Duration
Part 4a, 4b: Basic Data Visualisation Techniques	<ol style="list-style-type: none"> <li>1. Create a Simple Worksheet/ Report</li> <li>2. Explain the best practices of visualise categorical data.</li> <li>3. Create bar, stacked bar, and side-by-side bar charts using Data Visualisation software.</li> <li>4. Create pie charts and area-fill charts using Data Visualisation software.</li> <li>5. Create heat maps and treemaps using Data Visualisation software.</li> <li>6. Explain the best practices to visualise time series data.</li> <li>7. Create line and spark-line charts using Data Visualisation software.</li> <li>8. Create gantt chart using Data Visualisation software.</li> <li>9. Create trend and reference lines to charts using Data Visualisation software.</li> </ol>	<p>Online Lecture</p> <p>Instructor lead Practice</p>	<p>Practice using Tableau Desktop software to create Simple report</p> <ul style="list-style-type: none"> <li>• Two measures report</li> <li>• Pie chart</li> <li>• Bar chart with reference line</li> <li>• Stacked bar chart</li> <li>• Line chart with trend line</li> <li>• Line chart with 2 axis</li> <li>• Area chart</li> <li>• Bullet chart</li> <li>• Gantt chart</li> <li>• Heat Map</li> </ul>	45 mins
Break				15 mins

Topics to be Covered	Learning Outcomes to be Achieved	Summary and Discussion of Key Concepts, Theories, Principles	Class Activities to Enhance Learning	Duration
Part 5a, 5b, 5c, 5d: Advanced Data Visualisation Techniques	<ol style="list-style-type: none"> <li>1. Explain the best practice to visualise spatial data.</li> <li>2. Show spatial data on a map using Data Visualisation software.</li> <li>3. Prepare data to enable point-to-point mapping using Data Visualisation software.</li> <li>4. Explain the best practice to visualise multi-variable and distribution of data.</li> <li>5. Create scatter, circle and side-by-side circle plots using Data Visualisation software.</li> <li>6. Create bullet chart, bubble chart and histogram using Data Visualisation software.</li> <li>7. Create box plot and pareto chart using Data Visualisation software.</li> <li>8. Create parameters using Data Visualisation software.</li> <li>9. Create forecast using Data Visualisation software.</li> </ol>	<p>Online Lecture</p> <p>Instructor lead Practice</p>	<p>Practice using Tableau Desktop software to create</p> <ul style="list-style-type: none"> <li>• Map View Scatterplot with filter</li> <li>• Histogram</li> <li>• Boxplot</li> <li>• Create Parameter</li> <li>• Forecast chart</li> </ul>	35 mins
Break				10 mins
Study Unit 6: Business Performance Dashboard	<ol style="list-style-type: none"> <li>1. Explain the wrong and right ways in building a dashboard.</li> <li>2. Illustrate dashboard design principles.</li> <li>3. Arrange the objects in the dashboard workspace.</li> <li>4. Use actions to create advanced dashboard navigation.</li> </ol>	<p>Online Lecture</p> <p>Instructor lead Practice</p>	Practice using Tableau Desktop software to create storyboard with filters and actions.	15 mins