



Asian Institute of Technology  
School of Engineering and Technology  
Department of ICT

**AT84.02: Business Intelligence and Analytics**     January 2026

## **ASSIGNMENT 1**

### **BI and Visualization Tools**

Due: 26 February 2026

### **Overview**

#### **The Role of Business Intelligence (BI) in Modern Organizations**

In today's highly competitive and data-driven retail environment, Business Intelligence (BI) plays a critical role in enabling organizations to understand customer behavior, optimize pricing strategies, manage inventory, and evaluate store performance across markets. Global retail organizations generate large volumes of transactional and operational data, which—if analyzed effectively—can provide valuable insights into revenue growth, profitability, and strategic expansion opportunities.

However, raw data alone does not create value. The true power of BI lies in transforming complex, multi-dimensional data into meaningful insights through effective data modeling, visualization, and analytical reasoning. Modern BI tools such as Power BI and Tableau allow analysts to explore trends across time and geography, identify performance gaps, and support evidence-based decision-making at both strategic and operational levels.

This assignment emphasizes the application of BI techniques to a **global retail sales dataset**, encouraging students to move beyond descriptive dashboards toward analytical storytelling and business-driven insights.

#### **Goal of This Assignment**

This assignment is designed to develop **advanced Business Intelligence skills** by enabling students to:

- **Compare Leading BI Tools**  
Critically analyze the strengths and limitations of Power BI and Tableau for retail and sales analytics.
- **Create an Interactive Dashboard**  
Build an interactive dashboard that effectively communicates key performance indicators (KPIs), trends, and geographic patterns.

- **Extract and Communicate Business Insights**  
Interpret analytical findings and translate them into actionable business recommendations for management stakeholders.

This assignment assesses not only technical proficiency but also analytical thinking, clarity of insight, and the ability to communicate findings in a business context.

## TASKS

### **Task 1 – Comparison of Two Visualization Tools**

Compare and contrast two leading Business Intelligence tools: **Power BI** and **Tableau** as Visualization tools in the context of **global retail analytics**.

Your comparison should address the following aspects:

- User experience and ease of use
- Data modeling and data preparation capabilities
- Visualization flexibility and interactivity
- Geospatial analysis features
- Suitability for large-scale retail and sales datasets
- Integration with external data sources

Based on your analysis, which tool would you prefer for analyzing the **Global Fashion Retail dataset**, and why? Justify your choice clearly.

### **Task 2 – Global Fashion Retail Sales Analytics Dashboard**

The [Global Fashion Retail Stores dataset](#) contains transactional, customer, product, discount, employee, and store-level data for a multinational fashion retailer operating across multiple countries. The dataset enables analysis of sales performance, pricing and discount strategies, customer behavior, and store-level operations across geographic markets.

As a **Business Intelligence Analyst**, you are required to analyze this dataset and develop an interactive dashboard to support strategic and operational decision-making by senior management.

#### **Dataset Overview:**

The dataset consists of multiple related tables, including customer information, sales transactions, products, stores, discounts, and employees. These tables must be integrated

appropriately to support analysis across time, geography, products, and customers.

## **Objective:**

Design and develop an **interactive Business Intelligence dashboard** using a BI tool of your choice that extracts, analyzes, and communicates meaningful insights from the dataset.

## **Key Focus Areas:**

### **1. Global Sales and Revenue Distribution:**

Visualize the distribution of Total Sales across countries and cities. Highlight variations by Country and Store, and examine which geographic markets consistently perform at higher or lower sales levels over time.

### **2. Correlation Analysis:**

Explore how key retail factors such as **Unit Price, Discount, Quantity Sold, Shipping Charges**, and **Customer Ratings** relate to **Total Sales** and **Invoice Total**. Use appropriate visualizations to identify positive or negative relationships and highlight patterns that influence sales performance.

### **3. Geospatial Insights:**

Use map-based visualizations to present the global distribution of store locations and sales performance. Highlight geographic patterns, clusters, and regions with unusually high or low sales, discount usage, or shipping charges.

## **Deliverables:**

### **1. Dashboard Design:**

Create an interactive dashboard for global retail sale analysis. Also describe and justify your choice of charts, graphs, and layout.

### **2. Insights Interpretation:**

Summarize key insights derived from your visualizations.

### **3. Actionable Recommendations:**

Based on the key insights, suggest actionable recommendations that the company should implement to improve the overall sale and performance.

#### Note:

1. You can make any assumptions, as needed.
2. Please name your assignment as "BIA\_Assignment1\_YourName" and submit it as a PDF file in Teal link.