ITB141 DATA JOURNALISM
Assignment (35%)

AY2022 Semester 1

Table of Contents

Introduction

By the end of this assignment, you will be able to:
- Detect and understand the stories within datasets and extract insights from the given dataset
- Effectively present data visually to enhance audience comprehension of findings and insights.
- Apply data visualisation best practices including choosing the right chart type for the situation and avoiding visualisation techniques that can mislead the audience.
- Act as a data-driven visual storyteller for optimal presentation of trends, patterns and insights.
- Effectively communicate insights about data in various formats, including oral presentations and interactive visualisations.

Business Scenario

Adventure Works Cycles (AWC) is an international manufacturer and seller of bicycles and accessories. The company's headquarters is located in Bothell, Washington, USA and have 3 main regional sales offices in America, European and the Pacific. AWC would like to expand their sales to their best customers, extending its product availability through an external website, while maintaining the lower production costs. AWC sales mainly come from two sales channels, such as resellers and internet/online. There are three major product categories for AWC online sales namely bikes, clothing and accessories & components. The core income for AWC is obtained by selling three main brands of bikes such as mountain bikes, road bikes and touring bikes bicycles. An additional income is generated by selling cycling accessories such as bottles, caps, gloves, jerseys, and components namely bike racks, brake chains, handlebars etc.

In this **individual** assignment, you are required to develop interactive and effective data visualisations, integrate the visualisations into dashboards and present a data story using Tableau. The dataset of this assignment will be an MS SQL database, Adventure Works.

The base marks of this assignment are **35 marks** and it constitutes **35%** of your total ICA marks for this competency unit.

Copy work from other people or the internet is strictly prohibited. If found, it will be considered a case of plagiarism and is subject to disciplinary actions.

Submission Format and Mode

Below are the required deliverables for this assignment.

1. Three dashboards in a single Tableau Packaged Workbook (.twbx extension). Each dashboard should contain 3-4 visualisations.
2. A recorded video of you presenting the data story (you may submit a video file in mp4 format or a YouTube link to your video

Please be reminded to submit all the deliverables via Brightspace **by the end of Week 7, 5 June (Sunday) 2359hrs.**

Please refer to **Annex A** for detailed assessment rubrics of this assignment.

Project Background

The trend toward digital business is overwhelming due to the paradigm shift in the business world. However, Adventure Works Cycles (AWC) was comparatively behind the line as they only started their online business in the year 2010. AWC also claimed that internet sales have not been achieving the set target, thus the sales performance showed a declining trend. This resulted in decreased sales and missed revenue targets over the years. The sales and marketing team of AWC worked to improve the marketing alignments and increase online sales by discovering business insights via analysing the data for better decision making.

As a business analyst employed by AWC, you are tasked to analyse the data of AWC and present a data story using Tableau. Your data story is required to fulfil the objectives listed below.

1. To examine the prevailing situation of the internet sales of AWC via descriptive analytics methods.
2. To draft valid recommendations to AWC by evaluating the customer buying behaviour to improve their future internet sales.

The ER diagram below shows the essential database tables that you will need for your analysis. The data dictionary of the tables can be found at http://technet.microsoft.com/en-us/library/ms124438(v=sql.100).aspx.
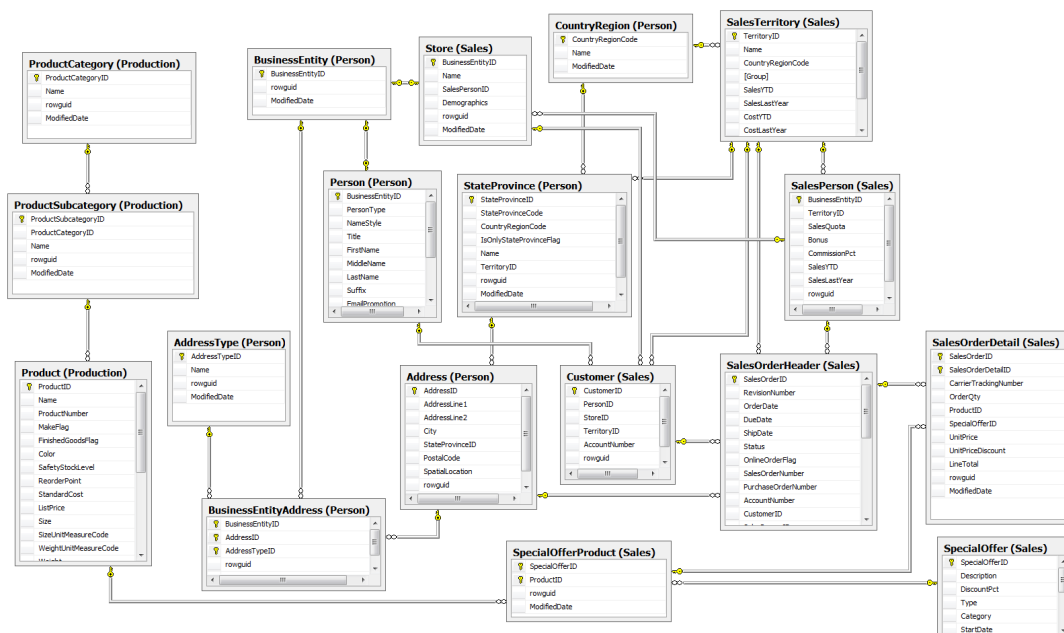
Task 1: Data Loading and Model Relationships in Tableau (5 marks)

Based on the given table structure, you are required to load the data into Tableau and create relationships among tables. Please see the diagram below for example.

Task 2: Develop Interactive and Effective Dashboards using Tableau (20 marks)

You have been tasked to develop dashboards to show your analysis and include narratives to explain the business insights. Each dashboard should contain 3-4 visualisations.

Task 3: Narrate a Data Story using Tableau Story Point (10 marks)

You are required to articulate the stories behind data sets and communicate data findings in an oral presentation. Your presentation should be aided by the Tableau Story feature, no Microsoft PowerPoint slides are required.

Your stories should contain 5 story points. The 5 story points should start with an overview and end with the recommendations and a conclusion.

Please see below for an example of using story points in Tableau.

Adventure Works Data Analysis

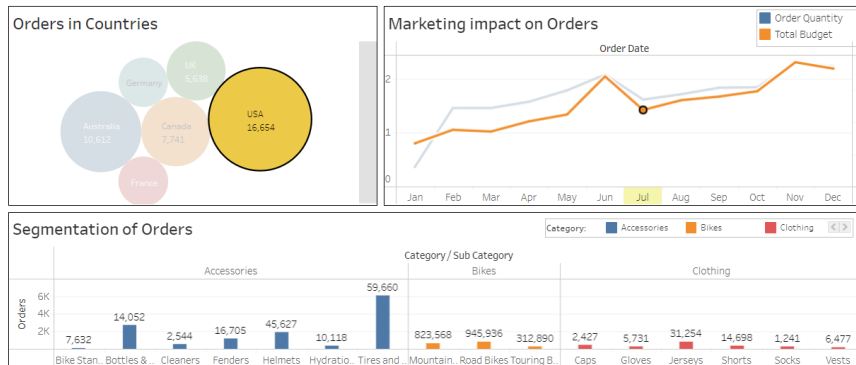| Let's better understand the customers of Adventure Works.	2. Customer's purchasing behaviour has been tracked here in this analysis.	3. This is to track the delivery services operated by Adventure works.	4. The obejctive of the firm as always is to increase the sales. Let's have a look...	This is the analysis of the overall performance of the company.

Order

Orders in Countries

UK
5,638

Germany

Australia
10,612

Canada
7,741

USA
16,654

France

Marketing impact on Orders

Order Quantity
Total Budget

Order Date

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Segmentation of Orders

Category: Accessories Bikes Clothing

Category / Sub Category

	Accessories						Bikes			Clothing					

Orders 6K 4K 2K

7,632	14,052	2,544	16,705	45,627	10,118	59,660	823,568	945,936	312,890	2,427	5,731	31,254	14,698	1,241	6,477

Bike Stan.. Bottles & .. Cleaners Fenders Helmets Hydratio.. Tires and.. Mountain.. Road Bikes Touring B.. Caps Gloves Jerseys Shorts Socks Vests

Annex A: Assessment Rubrics

Task 1: Data Loading and Model Relationships in Tableau					
Criteria	**Advanced**	**Proficient**	**Functional**	**Developing**	**Not Competent**
Data Loading and Model Relationships **(5 marks)**	• 80-100% of the relationships were addressed in the data model using foreign key	• 70-79% of the relationships were addressed in the data model using foreign key	• 60-69% of the relationships were addressed in the data model using foreign key	• 50-59% of the relationships were addressed in the data model using foreign key	• <50% of the relationships were addressed in the data model using foreign key

Task 2: Develop Interactive and Effective Dashboards using Tableau					
Criteria	**Advanced**	**Proficient**	**Functional**	**Developing**	**Not Competent**
Data Representation **(5 marks)**	• 80-100% of graphic variable types used are suited for the type and scale of the data they represent.	• 70-79% of graphic variable types used are suited for the type and scale of the data they represent.	• 60-69% of graphic variable types used are suited for the type and scale of the data they represent.	• 50-59% of graphic variable types used are suited for the type and scale of the data they represent.	• <50% of graphic variable types used are suited for the type and scale of the data they represent.
Visualisation **(10 marks)**	• 80-100% of visualisations address the required analysis concisely and clearly.	• 70-79% of visualisations address the required analysis concisely and clearly.	• 60-69% of visualisations address the required analysis concisely and clearly.	• 50-59% of visualisations address the required analysis concisely and clearly.	• <50% of visualisations address the required analysis concisely and clearly.
Dashboards **(5 marks)**	• 80-100% of dashboards were interactive and well designed with appropriate use of colour, symbolism, or text that are relevant to the task.	• 70-79% of reports were interactive and well designed with appropriate use of colour, symbolism, or text that are relevant to the task.	• 60-69% of reports were interactive and well designed with appropriate use of colour, symbolism, or text that are relevant to the task.	• 50-59% of reports were interactive and well designed with appropriate use of colour, symbolism, or text that are relevant to the task.	• <50% of reports were interactive and well designed with appropriate use of colour, symbolism, or text that are relevant to the task.

Task 3: Narrate a Data Story using Tableau Story Point					
Criteria	**Advanced**	**Proficient**	**Functional**	**Developing**	**Not Competent**
Analysis **(10 marks)**	Concise analysis with comprehensive recommendations conveyed.	Clear analysis with recommendations conveyed.	Moderate analysis with recommendations conveyed.	Brief analysis with irrelevant recommendations conveyed.	Unclear analysis without recommendation.