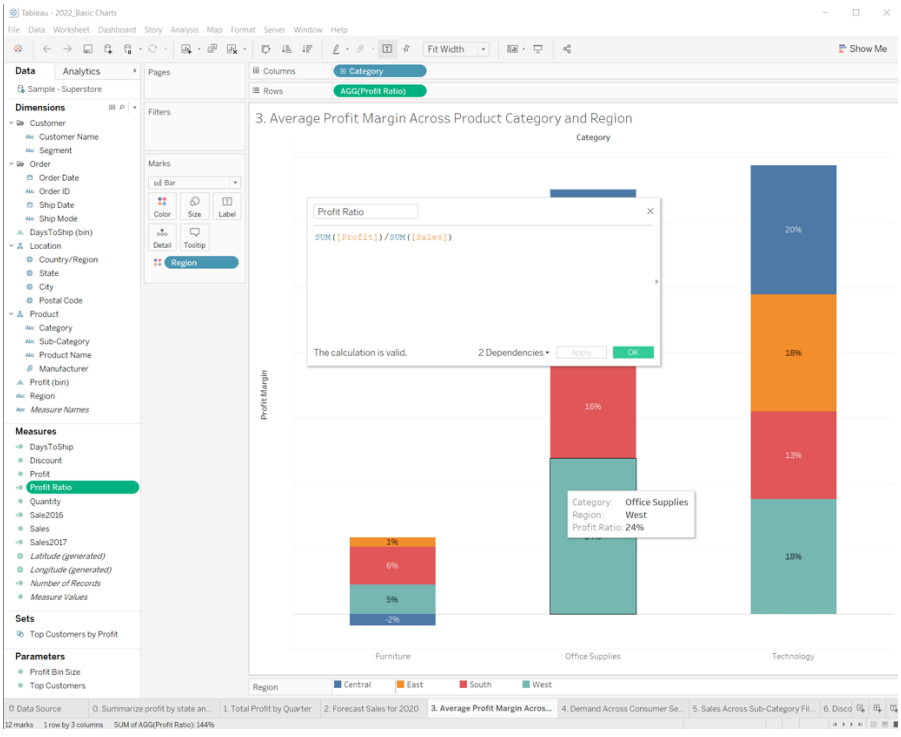
MSBA7001 Assignment 4

Module 1, 2023-24
HKU Business School

Contents

Instructions

1. 4 questions, 3pts each. 12pts in total.
2. Due at 11:30pm, Oct 10 (Tuesday).
3. Take a screenshot of every worksheet and dashboard and name them by numbers. For example, "Q4_1.jpg", "Q4_2.jpg" …. If there are calculated fields or tooltip or other interactive elements, do include such elements in your screenshot. Make sure you show the entire view of the Tableau application. Submit all screenshot images (up to 20) on Moodle.



Q1 – HK passenger traffic

Note: this problem is modified from a 2022 exam problem.

Use hk_traffic.csv. This file documents daily passenger flow in and out of Hong Kong between Jan 1 2022 and Sept 30 2022. See detailed description of each column below:

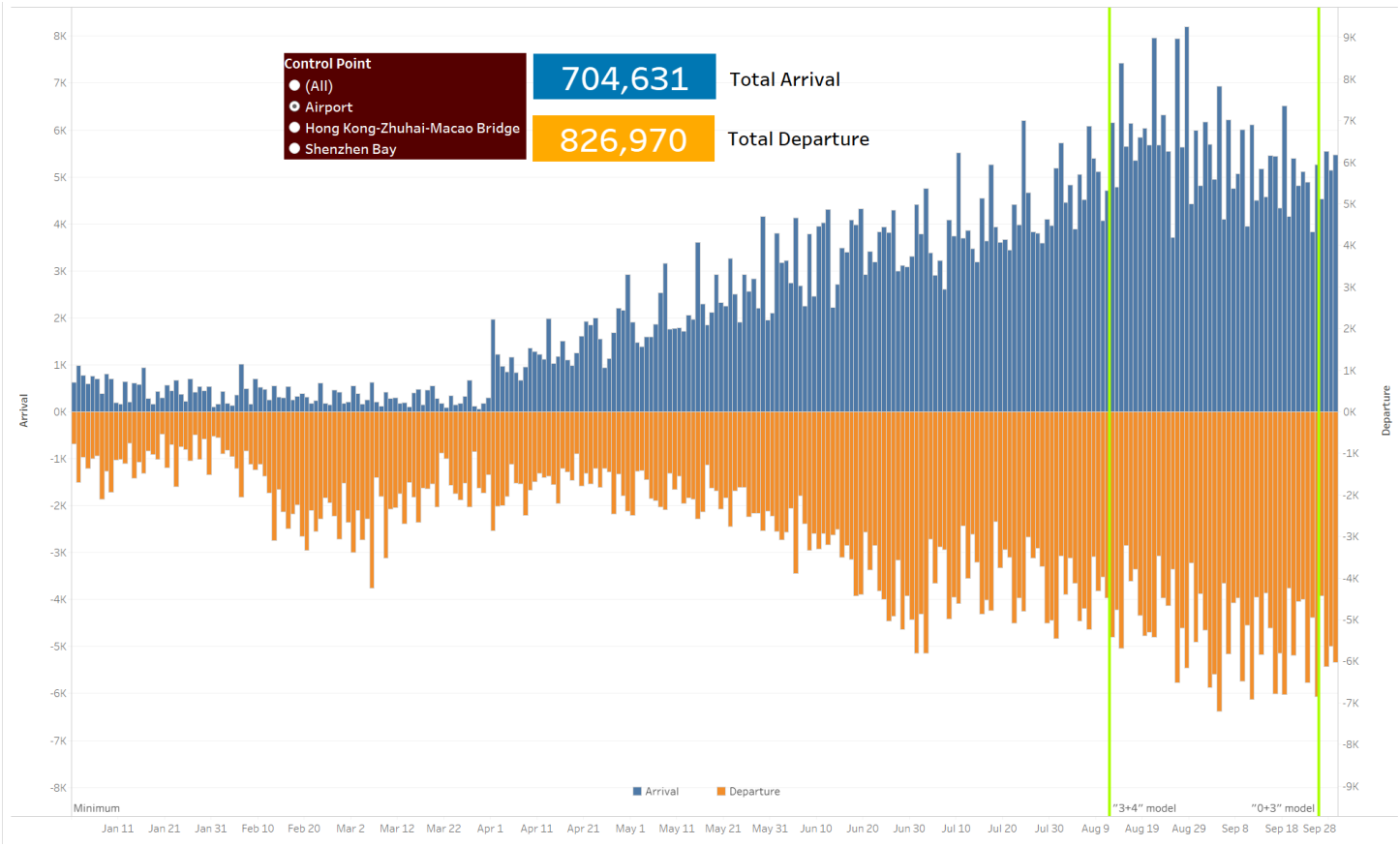
date: date, month, year
control_point: entry/exit points: Airport, Hong Kong-Zhuhai-Macao Bridge, Shenzhen Bay
in_hk: number of Hong Kong residents arriving in Hong Kong
in_mainland: number of mainland visitors arriving in Hong Kong
in_other: number of other visitors arriving in Hong Kong
in_total: total number of arrivals
out_hk: number of Hong Kong residents departing Hong Kong
out_mainland: number of mainland visitors departing Hong Kong
out_other: number of other visitors departing Hong Kong
out_total: total number of departures

Create a **Tableau Dashboard** that shows the following:

a. A bar chart with the upper half showing daily number of arrival traffic and the lower half showing daily number of departure traffic.
b. Two dynamic numbers summarizing the total arrival and total departure for the chosen control point. Two plain texts "Total Arrival" and "Total Departure".
c. A filter that allows users to select a control point. Depending on the chosen control point, both the bar chart in **a** and the two numbers in **b** should change accordingly.
d. Two reference lines. One refers to the launch date of "3+4" model on August 12, another refers to the launch date of "0+3" model on September 26.
e. A color legend that differentiates between arrival and departure.

A few things to note:

1. The titles on vertical axes should be the same as shown in the demonstration, i.e., Arrival, Departure. There should be no title on the horizontal axis.
2. The names in the color legend should be the same as shown in the demonstration, i.e., Arrival, Departure.

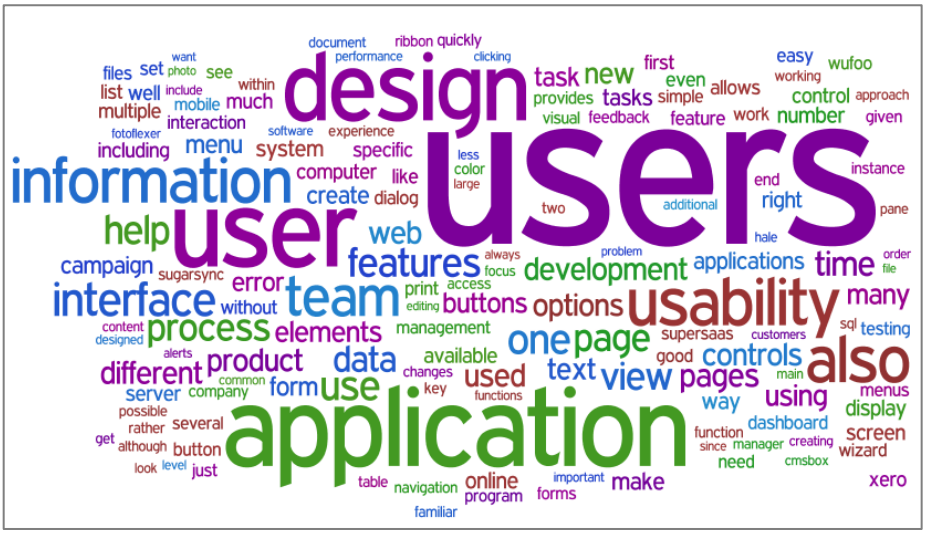


>>>YOU MAY CHOOSE DIFFERENT DETAILS, FONT, STYLE, SIZE, COLOR, LAYOUT, ORDER, AXES, TICKS, ETC<<<

Q2 – word cloud

Note: this was a 2018 exam problem.

Word cloud (or tag cloud) is a novelty visual representation of word frequency in a given text. This format is useful for quickly perceiving the most prominent terms. See an example below:



The size of the words in the cloud is determined by the frequency of words in the text. In this case, the word "users" appears more frequently than the word "development" in the text.

In your previous assignment, you have retrieved all the words and their frequencies from Ms. Carrie Lam's policy address in 2018. Now use "word_count.csv", create a **Tableau Worksheet** of word cloud.

A few things to note:

1. Create a word count slider. Show words with a frequency above 8 (inclusive).
2. Make sure that the variation in the word sizes is significant enough.

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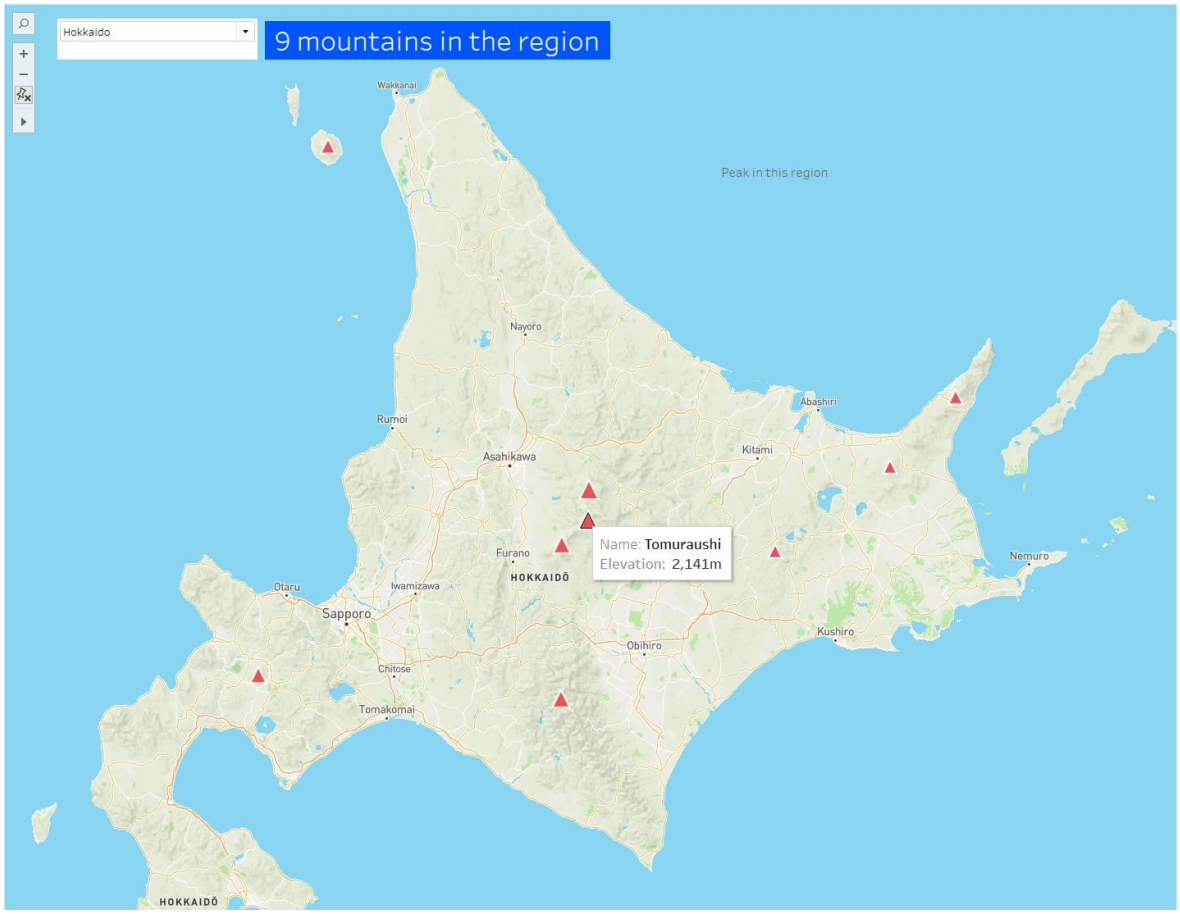
Q3 – JP mountains

Note: this question is modified from a 2021 exam question.

In the previous assignment, you have crawled the information about the 100 famous mountains in Japan. Now, use "jp_mountains.csv", create a **Tableau Dashboard** of mountain map.

A few things to note:

1. Every mountain is marked by a triangle, with its size determined by the elevation of the mountain. Make sure that the variation in the triangle sizes is significant enough.
2. Filter by region. The region filter should control both the map and the text. For instance, when you select "Hokkaido" in the filter, the map is centered to Hokkaido region and the text says "9 mountains in the region".
3. Show the mountain name and elevation in the pop-up of each triangle.



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Q4 – Kickstarter

Use "kickstarter.xlsx", create a **Tableau Dashboard** that includes four visualizations (tables and/or charts). You are suggested to illustrate some of the following inquiries:

1. What kind(s) of project is more likely to be successful?
2. Would it make a big difference if a project is a staff pick?
3. What is the success ratio of projects across locations & categories?
4. Is there any (monthly, quarterly) seasonal effect impacting the project success?
5. What is the distribution of project durations in days?
6. What are the top projects that have received the highest average funding per backer?
7. Who are the top creators of projects (e.g., by number of projects created, total funding received, etc)?
8. Any other information that you consider meaningful.

This is an open-ended question. Use your imagination. Feel free to add filters, actions, messages, tables, tooltips, etc. See detailed description of each column below:

Name: Project title
Blurb: Short description of the project
Goal: Total funding (in USD) the project creator hopes to receive
Pledged: Total funding (in USD) already received
Status: Current status of the project: successful, failed, cancelled, live.
Launch Date: Start date and time of the project
Deadline: End date and time of the project
Staff Pick: Whether this project is recommended on the homepage: TRUE, FALSE
Backers: Total number of people who have funded the project
Creator: Page link of the project creator
City: Location of the creator
State: Location of the creator
Category: Category of the project, e.g., music, food, games
Subcategory: Subcategory of the project, e.g., software, academic, comedy
URLs: Page link of the project, format is json