School Name: School of Computing
Academic Year: AY2223 Semester 2
Course Name: DAAA
Module Code: ST1502
Module Name: Data Visualization
Assignment: CA1 (Group and Ind)
Deadline: Fri, 9 Dec 2022 by 2359

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Section 1.1
Group: Instructions and Guidelines

1. There are 2 parts to this assignment; group work (40 marks) and individual work (60 marks). For group work, you are to work in a group of 3 or 4 members. Assume that you are a group of consultants who work on a topic to analyse the given data, gather insights and suggest recommendations that could help Singapore or the world to make improvements.

2. The requirements of this group assignment are outlined in Section 1.2 of this document.

3. Submit your group work in the Brighspace:
    a.   Refer to the link in Brighspace: "CA1 (Group) Submission" tab.

    b.   Submit a zip file for group work. The file-naming convention is, "Classid-Project Leader Name.zip", Example: 1B01-Elyssia.zip

4. For group work, you are required to submit a Zip file that include a set of Powerpoint slides that summarizes the data insights that you have gained and etc.

5. For CA1 assignment, both the group and individual work acount for **30%** of the **module grade**.

6. No marks will be awarded, if the work is copied or you have allowed others to copy your work.

7. 50% of the marks will be deducted for assignments that are received within ONE (1) calendar day after the submission deadline. No marks will be given thereafter. Exceptions to this policy will be given to students with valid LOA on medical or compassionate grounds. Students in such cases will need to inform the lecturer as soon as reasonably possible.

Section 1.2
Group: Scope of the assignment

Basic Requirements

In 2022, the world will generate huge amount of data. Within these data are huge opportunities for human advancement. To be able to turn opportunities into reality, people need the data at their fingertips to work on. Your group of 3 or 4 members who are consultants will analyse the 'C**oronavirus'** datasets. You will retrieve relevant data sets, generate relevant charts using Tableau software and analyse the data insights. You may wish to provide some suggestions or recommendations on how the data insights benefit the relevant authority.

For data sets (minimum 2 data sets), you may access to following URL:
Search - Our World in Data or https://ourworldindata.org/search?q=coronvirus

1.   Select a topic to work on. State two objectives of the data analysis on the selected topic.Explain the datasets eg the data fields and description of the data.

2.   Retrieve the coroavirus datasets, analyse the datasets and generate 3 dashboards. Explain the insights. More marks will be allocated if you are able to explain interesting insights using facts and figures.

3.   Suggest 2 reocmmendations or 2 areas for improvement that are useful for the relevant authority to improve its operational efficiency or become a more efficeint and effective authority.

4.   Your powerpoint slides should include the following:
      • A cover page that lists group member IDs and names
      • State the topic of interest and state <u>two</u> objectives of the data analysis.
      • Explain the dataset(s). Example the number of data fields and types of data fields, the size of dataset and desctiption of the dataset.
      • List the URLs and references of all the datasets and materials you refer to
      • For each dashboard, you may wish to provide some conclusions or recommendations.

5.   Zip file should include the following items:
      • A set of Powerpoint slides (not more than 15 slides) that summarizes the data insights that you have gained.
      • A twbx file (a Tableau Storyboard)
      • Include all data set(s)-orginal and processed datasets

6.   Your group will need to give a short presentation to your tutor during lesson time. Every member will need to present. Your module tutor may ask you questions about the charts you have generated during this interview / presentation session. The total number of powerpoint slides is about 15. Each group is allocated **15 mins** for presention cum demonstration.

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Section 1.3
Group: Marking Scheme

Marks will be awarded to each student based on the following rubrics.

To score higher marks, you are encouraged to explore and experiment beyond the syllabus and demonstrate your independently-acquired skills via your deliverables / interview.

A: Group Work - Component	Weightage
Explain data set(s), Explain data wrangling and Provide objectives • Explain the data sets (Data Dictionary) • Explain how you cleanse and wrangle the data sets • Explain how you merge the additional data sets if any • State <u>two</u> objectives for analysing the data set.	7%
Quality of application (.twbx) • Technical complexity • User-friendliness • Aesthetics • Creativity	18%
Data analysis & recommendations • Completeness in the analysis of data (more marks will be awarded for coherence explanation) • Quality of visualisation and analysis • Suggest 2 reocmmendations that are useful for the relevant authority to improve its operational efficiency or become a more efficeint and effective authority.	10%
Quality of presentation slides & data insights • A deck of Powerpoint slides that explain the datasets, summarizes the insights gained from the analysis of the data and provide recommendations. • State all library resources you refer to for CA1. • Use two points or sentences to share with your lecturer what you have learnt from CA1 assignment (group work)	5%

Section 2.1
Ind: Instructions and Guidelines

1. This is an **INDIVIDUAL** assignment which requires the student to use Tableau software to generate relevant charts. Students are required to analyse the given "Singapore Housing" data set, analyse ethe data, cleanse the data, suggest reommendations that could help Singpaore to make improvements on housing. For wrangline of dataset, you may use software such as Python programming or Ms Excel or etc.

2. The requirements of this assignment are outlined in Section 2.2 of this document.

3. Submissions should be made via the Brighspace:
    a.   Refer to the link in Brightspace, "CA1 (Ind) Submission" tab.

4. Deliverable should be a zip file with the following file-naming convention "classid_**YourName.zip".** Example: 1B01_Amelia.zip.

5. CA1 assignment (Individual) accounts for 18**%** of the **module grade**.

6. No marks will be awarded, if the work is copied or you have allowed others to copy your work.

7. 50% of the marks will be deducted for assignments that are received within ONE (1) calendar day after the submission deadline. No marks will be given thereafter. Exceptions to this policy will be given to students with valid LOA on medical or compassionate grounds. Students in such cases will need to inform the lecturer as soon as reasonably possible. Students are not to assume on their own that their deadline has been extended.

Section 2.2
Ind: Scope of the assignment

In this individual assignment, you are required to use Tableau software to generate charts and to gather insights from the given data set. You are required to present the data insights and summarise your findings.

Basic Requirements

1.   Each student is required to use Tableau to create a "Story" which should consist of **2 dashboards. Each dashboard may have 3 charts**. You are to showcase your ability in the following:

- Interactivity of visuals
- Variety of visuals
- Usefullness of visuals
- Sensibility of visuals

2.   Your submission should contain the following:
   A variety of charts such as:
- one KPIs and parameter chart
- one calculated field chart
- one chart, eg line chart, bar chart, box-whisker chart and/or scatter plot
- others

3.   Your dashboards should help you to gain deeper insights into the given dataset such that you are able to craft a 'storyline' or produce an interesting data analysis on it.

   Compile your findings into a Tableau storyboard.
   Your Powerpoint slides should include the following sections:

- A cover page that states your name and the title of your data analysis
- One slide to explain <u>one</u> objective of analysing the dataset.
- For each dataset, one slide to explain the **nature of that dataset** (i.e. what is in that dataset) or any pecularities such as outliers you wish to highlight
- Explain the **process** you went through to cleanse or wrangle the dataset.
- Explain the **insights** you have gained from analysing the data, recommend one suggestion as a result of the analysis
- A slide that lists the URLs you refer to

4.   Summary of submission for CA1: individual work. Submit a zip file with all the following.
   a.   Dataset(s) (submit if you have clearnsed or wrangled the given data set)
   b.   A file with .twbx format
   c.   A deck of powerpoint slides (not more than 10 slides)

Section 2.3
Ind: Marking Scheme

Marks will be awarded to each student based on the following rubrics.

To score higher marks, you are encouraged to explore and experiment beyond the syllabus and demonstrate your independently-acquired skills via your deliverables / interview.

Component	Weightage
Explain data set(s) and objective • Explain the given data set (Data Dictionary) • Explain how you cleanse the given data set • Explain how you wrangle the given data set • State one objective for analysing the data set.	10%
Quality of application (.twbx) • Technical complexity • User-friendliness • Aesthetics • Creativity	25%
Data analysis • Completeness in the analysis of data (more marks will be awarded for coherence explanation) • Quality of visualisation and analysis	15%
Powerpoint slides with data insights • A deck of Powerpoint slides that explain the given dataset. You are required to explain the insights gained from the analysis of the data and to provide recommendations. • State all library resources you refer to for CA1(ind). • Use two points or sentences to share with your lecturer what you have learnt from CA1 assignment	10%

-- End of Assignment Specifications --