MIS771 Descriptive Analytics and Visualisation

DEPARTMENT OF INFORMATION SYSTEMS AND BUSINESS ANALYTICS

DEAKIN BUSINESS SCHOOL

FACULTY OF BUSINESS AND LAW, DEAKIN UNIVERSITY

Assignment Three

This individual assignment requires you to design and develop an interactive dashboard using the Tableau software from a given dataset and then convey your design process as a web report on MIS771's WordPress platform.

Percentage	**35%**
The Due Date and Time	**8 pm Thursday 9th June 2022**

Important Note:

Extensions and late submissions are NOT possible for this assessment.

Assurance of Learning

This assignment assesses following Graduate Learning Outcomes and related Unit Learning Outcomes:

Unit Learning Outcome (ULO)	Graduate Learning Outcome (GLO)
ULO 1: Apply quantitative reasoning skills to solve complex problems. **ULO 3**: Deduce clear and unambiguous solutions in a form that they useful for decision making and research purposes and for communication to the wider public.	**GLO1**: **Discipline-specific knowledge and capabilities** - appropriate to the level of study related to a discipline or profession. **GLO2**: **Communication** - using oral, written and interpersonal communication to inform, motivate and effect change.

Feedback before submission

You can seek assistance from the teaching staff to ascertain whether the assignment conforms to submission guidelines.

Feedback after submission

This assessment will be treated as the final exam. Thus, the **assessment mark and feedback cannot be released until the University officially releases the final results**. The assessment mark and feedback will be published on Cloud Deakin as soon as the official results are released.

Scenario

Your employer, Beautiful Data Inc., create insightful and dynamic dashboards for their clients.

Todd has requested you to come up with an interactive dashboard for one of the clients. In his memo sent to the analytics team via SLACK (see next page), Todd has provided some guidelines to tackle the task. In particular, you are expected to explore the LasVegas dataset and develop an interactive dashboard using Tableau Desktop software. Then, you should convey your design process as web report comprising a process component and a solution component via the WordPress platform (a template is provided).

Dataset Details (accessible via _T12022LasVegas.xlsx_ file)

The 'LasVegas' dataset is a multivariate dataset that provides 504 TripAdvisor reviews of 21 hotels located in the Strip, Las Vegas.

The data collected is grouped into "Review", "User" and "Hotel" features. A brief data description is available from the Variable_Descriptions worksheet in the Excel file.

For a more detailed look http://dx.doi.org/10.17632/tsf9sjdwh2.1 and the associated journal paper http://www.sciencedirect.com/science/article/pii/S2211973617300387

> **Hints:**
> - You may add additional Statistical analysis and/or supporting data of your own (additional Latitude/Longitude data, web links etc.) At minimum, the focus of the assignment should be on the core data provided in the dataset.
> - Fix issues with data quality (if any).

Todd's memo sent to the Analytics team via SLACK
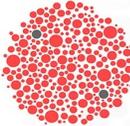
BEAUTIFUL DATA   12:50 pm   �‍18 ⓘ 🔍 Search   @ ☆ ⋯

──────────────── Today ────────────────

Todd Nash 3:17 PM
#VisCallenge #LasVegas #Project
Hey, team DataViz.
Let us all start working on #LasVegas data and see who can develop the best interactive visualisations. Remember, our work will be showcased in the upcoming online marketing campaign. More on this in my next post.

🎉 2 ✨ 8 👏 1 💖 3

Todd Nash 3:20 pm
#VisCallenge #LasVegas #Project

The #Data_Visualisation challenge consists of the following steps:
a) Review the #LasVegas dataset first.
b) Define a #Business/User_Persona that will be the #Audience of your data visualisation and develop a #story to help focus and guide your design process.
c) Identify key #Data_Elements in the selected dataset that could be used to explore further using data visualisation methods.
d) Discuss why you may use certain #Visualisations
e) Keep in mind #Ethical considerations of using #3ʳᵈparty_data
f) Develop an #Interactive_Dashboard (using the #TableauDesktop)
g) Describe key components of your final #Dashboard.
h) Deliver your project as a #Web_Report via #WordPress

Todd Nash 3:43 pm
#VisCallenge #LasVegas #Project
Team, remember all the points mentioned in my previous comments should be done via #WordPress!

Good luck all!
Ah, and remember… I expect your projects submitted to me by Thursday 9ᵗʰ June 2022, 8:00 pm. 😱✌️

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[1] Slack brings team communication and collaboration into one place so you can get more work done, whether you belong to a large enterprise or a small business. Check off your to-do list and move your projects forward by bringing the right people, conversations, tools, and information you need together. Slack is available on any device, so you can find and access your team and your work, whether you are at your desk or on the go.

Assignment Deliverables via WordPress

The assignment consists of **two main sections** (web pages): **Process** and **Solution** (accessible via **Menu** in the WordPress template). You are required to complete both parts. This assignment is equivalent to 2,500 words.

A) Process Component

You are required to complete this section by completing four **pre-set** web pages under the **process** menu. Content presented here should be written in a **'professional'** language and must cover the following four aspects:

1) ***Describe the audience for your Data Visualisation***

   (to be written under AUDIENCE page)

   Describe the audience of the Data Visualisation you intend to create. This section should include a general description of the persona, questions they want to be answered, actions/outcomes your dashboard will be supporting, and the feeling you would like to convey.

2) ***Identify Data Elements***

   (to be written under DATA ELEMENTS page)

   Using what you have learnt in the lectures and tutorials, first, please describe each column in the dataset (note: you should describe all columns regardless of whether you will ultimately use them in your visualisation or not). Then classify the data (example, Categorical, Numerical: Discrete, Continuous / Scales of measurements: Nominal, Ordinal, Interval and Ratio / Time/Date, Location).

3) ***Describe at a high level what types of charts you might use to display the data.***

   (to be written under THE RIGHT FIT page)

   Based on the data types you described earlier in this section, along with the objectives of the persona you described, describe what charts and visualisations you think might work well to communicate the information.

4) ***Finally, describe any data ethics considerations there with the data you intend to use.***

   (to be written under ETHICS page)

   Describe any considerations you think you should keep in mind while developing and sharing your visualisation.

   Note: While adding content, images, and tables are allowed under these sections (web pages); **students are strictly prohibited from moving** web page locations, **renaming** web pages or **adding** new pages under the PROCESS component.

B) Solution Component

Under the **SOLUTION** component (WordPress web page), you are expected to have two deliverables, namely, **Live Dashboard** and **Story Telling**.

First, using the skills you have developed in the tutorial sessions (and leveraging any additional training and online support provided by Tableau Inc.), you should create an interactive dashboard using Tableau Desktop. Then, **you should embed your interactive dashboard on the Live Dashboard web page**.

> *Note:* Instructions on retrieving embed code and importing the interactive dashboard to WordPress websites are available in the **WordPress Instruction Manual**.

Under the **Story Telling** web page, you are expected to capture and describe various screenshots of your interactive dashboard developed using Tableau Desktop.

> **Hint:**
> You can capture screenshots using the **Print Screen Key** on the keyboard or by using the snipping tool (Windows machines), or you can easily export "Screen images" by using the "Export Image" option from Dashboard menu.
>
> **Alternatively, you can annotate the dashboard using "Story" tab in Tableau Desktop.**

Your descriptions, comments, or annotations of the interactive dashboard should detail how you have considered the data visualisation framework while developing the interactive dashboard.

The questions below will give you some ideas of the type of comments you should include in this section:

   I.   **What types of charts have you selected and why?**
   II. **How have you used colour (or not)?**
   III. **How have you used hierarchy in your approach?**
   IV. **What interactive components did you introduce?**
   V.   **How have you supported the motivations of the persona you defined?**
   VI. **Comment on data sources and any data manipulation you may have performed.**

> *Note:* While adding content, images and tables are allowed under these sections (web pages); **students are strictly prohibited from moving** web page locations, **renaming** web pages or **adding** new pages under this PROCESS component.

C) Other components of the WordPress website

There are three web pages on the WordPress website template where you need to provide additional information. These include **Welcome to Beautiful Data Inc. (Home page)**, **About Us**, and **Contact** pages.

In the **Welcome** page, you may provide some information about Beautiful Data Inc. operations and the visualisation project, i.e. Las Vegas (**be creative**).

In the **About Us** page, you should briefly introduce yourself.

Finally, students can provide their contact information (you should use fictitious contact information), including phone number, email address, and social media pages such as LinkedIn etc.

Note: While adding content, images and tables are allowed under these sections (web pages); **students are strictly prohibited from moving web page locations and renaming web pages**.

Students are allowed to add site pages at the top level Menu ONLY.

Criteria	Criteria Weight			Not Attempted	Needs Improvement	Satisfactory	Good	Very Good	Exemplary
PROCESS Component (40%) **GLO1** ⚙ **GLO2** 💡	• Audience • Data Elements • The Right Fit • Ethical Considerations	35%		**None** of the specified Topic areas answered clearly or completely. Only a **generic** description of the audience and/or questions are given. Some variables are **incorrectly** classified. **Ethical considerations** NOT addressed. There is NO explanation (support) for the use of different charts, graphs etc. **(0 – 10.4)**	**Only a few** of the specified Topic areas answered clearly or completely. Audience (the persona of interest) **poorly described** or questions developed are **too basic** to justify a need for an interactive visualisation. **(10.5 – 17.4)**	**All Topic** areas were addressed, but **most** topics lack clarity and/or incomplete. A clear alignment between visual elements (charts, graphs etc.) and objectives of the persona described is lacking. **Ethical considerations** could be discussed in further details. **(17.5 – 20.9)**	**All Topic** areas were addressed, but **some** topics lack clarity and/or incomplete. The persona of interest needs further development in terms of his/her requirements and alignment between visualisation elements and questions developed. **(21 – 24.4)**	All Topic areas addressed with clear and complete answers. Evident alignment between personas of interest, questions on the one hand and visualisations on the other. **Questions are basic**, lacking **business value** or substantial deliverables (insights) required of top-level decision-making. **(24.5 – 27.9)**	**An exceptional** understanding of all specified Topic areas clearly demonstrated. The persona of interest is **well developed**. There is **a clear logical link** between the choice of visualisation elements and the persona's objectives. **Ethical considerations** well thought and clearly argued. **(28 – 35)**
	• Communication	5%		PROCESS content lacks **structure**. There is NO logical flow across sub-pages under PROCESS menu. **(0 – 1.4)**	The structure of the PROCESS content was unclear and **difficult to follow**. **(1.5 – 2.4)**	The PROCESS content had a **basic structure** but was **inconsistent** or **incomplete**. **(2.5 – 2.9)**	All written topic areas were covered and basic structure provided under PROCESS content. **(3 – 3.4)**	PROCESS content was complete and **very well presented**. **(3.5 – 3.9)**	PROCESS content was **skilfully prepared** and **comprehensively** presented. **(4 – 5)**
SOLUTION Component (55%) **GLO1** ⚙ **GLO2** 💡	• Live Dashboard • Story Telling • Digital Literacy			Visualisation elements are poorly selected or do NOT provide insights for decision-making. No logic behind use of **colour** presented. **Concept of Hierarchy** ignored in visualisation and interactive elements are missing. **(0 – 16.4)**	The visualisation does not provide insights into decision making for the proposed persona. **Interactive elements** and **concept of hierarchy** poorly introduced into the visualisation. **(16.5 – 27.4)**	The dashboard does NOT provide **meaningful insights** for informed decision-making. Rather than simply describing visualisation, commentary could have aimed to provide insights to key elements of the dashboard. **(27.5 – 32.9)**	Key elements of quality visualisation dashboard are included (e.g. charts, colour, and interactive elements). However, it is **unclear** how the visualisation could help the defined persona with decision-making. **(33 – 38.4)**	Commentary and notes are **insightful** and clearly explain the **logic** behind constructing the interactive dashboard. **(38.5 – 43.9)**	The visualisation **clearly supports** the defined persona for insightful, data-driven decision-making. Commentary and annotations provide relevant details on all key components of the dashboard. **(44 – 55)**
Digital Proficiency (5%) **GLO3** 🖥	• Welcome, About Us, Contact and/or other menus. • Website Aesthetics and Playfulness • Creativity and Engagement			No attempt made to go beyond the minimum requirements of the assessment tasks. Website and dashboard lacks creativity and personalisation, engagement elements. **(0 – 1.4)**	Welcome, about us and contact pages do not convey information they are designed to convey. Website or dashboard lacks creativity, and playfulness elements. **(1.5 – 2.4)**	Welcome and contact pages convey information they are designed to convey. Website lacks creativity and engagement elements. **(2.5 – 2.9)**	Welcome page provides informative content on Beautiful Data operations, and website design limits to minimum requirements of the assessment tasks. **(3 – 3.4)**	Creativity and engagement elements are evident throughout the WordPress website. Website design and delivery has few elements beyond minimum requirements of the assessment tasks. **(3.5 – 3.9)**	An exceptionally creative and engaging website designed. All web pages are professional, engaging and aesthetically appealing. The student has gone beyond minimum expectations by including additional information (web pages) to the website. **(4 – 5)**
OVERALL	**100%** *(Equivalent of 35 Marks)*			**0 - 29%**	**30% - 49%**	**50% - 59%**	**60% - 69%**	**70% - 79%**	**80% - 100%**
Overall Description				*Or Equivalent* **Fail (N)**		*Or Equivalent* **Pass (P)**	*Or Equivalent* **Credit (C)**	*Or Equivalent* **Distinction (D)**	*Or Equivalent* **High Distinction (HD)**