ICT394 Business Intelligence Application Development

## Assignment 2: Group Project

## Due Date

* Group Report Due: **Saturday, 16th November 2024**
* Group Presentation Slides LMS submission: **Monday, 11th November 2024**

## Cut-off Due Date to form a group: Saturday, 12th October 2024.

* This is a **group assignment** and MUST be completed in **groups of 4 or 5 members** (**Maximum 5**). Groups must be drawn from students in the same Workshop session.
* If you haven’t already, please **email** the names and student numbers of your group **to your lecturer as soon as possible**.
* **Marks will be allocated equally to all members of the group**. If there is conflict within the group, you must **inform the Unit Coordinator** **immediately**. All efforts will be made to resolve the conflict. If the conflict is not immediately resolved, the Unit Coordinator will decide on a resolution in consultation with the group members. **Do not report conflict after assignment submission**.
* **The project has two parts:**
  + a written report and Power BI component, and
  + a presentation.
* Marks will be allocated for the various sections of the project as listed below. Late penalties, as outlined in the Unit Information Guide, will be applied to late submissions.
* As always, **students are reminded** of their **responsibilities as regards to** **academic integrity**. If you are unsure as to what this means, please see: <http://our.murdoch.edu.au/Educational-technologies/Academic-integrity/>

## Background – Do this first!!

Please download the document titled " Assignment 2 Background Information and Questions 2024.docx” from LMS.

**You may require additional data** to perform your analyses. **You should attempt to procure it for yourself**. **Expect to Transform your procured data**. There is **no limit** as to what or **how many data sources you use for this project**. Whenever you do include an additional data source, you must ensure that you include the relevant metadata in the Data Dictionary which should be included in the Appendix (see Section 1 of the Report Specification) and reference the **data source (APA referencing style)**

When students have attempted this project in the past, they have expressed concern about how poorly the data are structured, and how the data they found from other sources was not formatted “correctly”. Unfortunately, this is what working in BI is like and part of the assessment task! As such **Data Transformation is essential part of this assignment**.

## Report Specification (a detailed Marking Guide is available for download on LMS next to the Assignment Document)

The report is **worth 70%** of the marks for this project and will be allocated as below.

1. The report you create should include the following sections.
   1. Executive Summary and Introduction - 5%
   2. Dimensional Model Design (required) – 20%
   3. Power BI Insights and Visualizations using Interactive reports – 55%
   4. Appendices that include the data dictionary, dimensional model design documentation, the dimensional model schema showing all dimensions and relations (you will be submitting the Power BI files, the submitted file must align with the dimensional model schema in the appx); for example, references and data sources, detailed ETL processes and metadata organized in a table (10%)
2. Further details of each section are provided below.
3. A **detailed Marking Guide will be provided on the LMS**.

## Presentation Specification

The presentation is **worth 30%** of the mark for the project.

1. **In the final week** of the term, **each group will present your findings** – **presentation will be during your last class, Date TBA by your lecturer**.
2. The Marking Guide for the presentation is provided in page 6 – 9 of this document.

**Note:**

* **Only ONE** member of each group needs to submit.
* **Each member of the group must participate in the Presentation recording**, marks will be deducted otherwise.
* You should **submit your final project Report** along **with the PowerPoint slides** you used for your presentation recording.

# Abridged Marking Guide ICT394 Assignment 2 Report

**This portion of the Assignment is worth 70% (marked out of 100%)**

Download the Assignment Report Template on LMS

## Executive Summary and Introduction – 5%

The purpose of an Executive Summary is to **articulate** to the reader the **highlight” of the report**. It is important to note that for some of your readers, this will be the only part of your report they will read (particularly if what they read in the Executive Summary doesn’t grab their attention!)

We will be looking for the following in determining the mark:

* **Effectiveness of Summary**, how well the summary summarizes the content of the report. It should present the most important aspects of the project goals, methods and how the project finished.
* **Professional organization and presentation of the Report,** the organisation of the summary, which should flow logically from the goals, through the methods used to the conclusions/findings of the project.
* Proofread your work before submission. Spelling and grammatical errors should be avoided in this part of the report (remember, that it might be the best chance you have to grab the reader’s attention).

The Introduction is **different from the Executive Summary** in that the idea is to introduce the rest of the report. It will more formally explain the structure of the report in that it will outline the main sections and perhaps outline the findings.

We will be looking at the following in determining the mark:

* The Introduction clearly and logically outlines the sections of the report and provides an overview of the content of those sections.
* This is where you introduce the topic, e.g. the SDG goal, problem statement, objective of the analysis etc
* Again, professionalism in the presentation of this section is important.

## Data Procurement (required but marks are allocated across different Tasks)

While marks are not directly allocated to this section, the quality and relevance of the data procured will impact the marks in other sections where analysis is presented.

## Dimensional Model Design (required) 20%

* Implement Dimensional Modeling in Power BI
* **Identify the dimension model** you have designed for your analysis (For example, “The model we have designed is a XYZ type for dimensional model”) and **explain** in a few sentences, why this is the most appropriate dimension model. (For example, “We have used a XYZ dimensional model because… ”)
* Describe how the relationships between the fact and dimension tables were specifically designed to support the analytical requirements of your formulated BI questions. *(Note: This question is asking you to explain why you set up the relationships in your model the way you did. Specifically, discuss how these relationships help to answer the BI questions effectively, support the analysis you intend to perform and ensure that the data is connected in a way that enables meaningful exploration and insight extraction.)*
* List all Dimensions and Fact table(s) included in your dimension model.
* A screenshot of your dimension model with the appropriate relationships.

## Power BI Insights and Visualizations using Interactive reports (55%)

1. **Descriptive Analytics and Insights** – Here you will submit you **Descriptive** Analytics and provide **Descriptive** Insights required for this task. Including

All required tasks for a – e, all Visualizations, write ups and list of applied Gestalt principles

Minimum 4 visualizations

20 Marks

1. **Diagnostic Analytics and Insights** - Here you will perform **Diagnostic** Analytics and provide **Diagnostic** Insights required for this task. Including

All required tasks for a – e, all Visualizations, write ups and list of applied Gestalt principles

Minimum 4 visualizations

20 Marks

1. **Predictive Analytics and Insights** - Here you will perform Prescriptive Analytics and provide Prescriptive Insights required for this task. Including

All required tasks for a – e, all Visualizations, write ups and list of applied Gestalt principles

Minimum 3 visualizations

15 Marks

## Appendices 10 marks

1. **Data Dictionary 10%**

Lists all data sources. Your team will create a comprehensive data dictionary detailing all the datasets you have procured. This should include metadata, source descriptions, data types and any transformations or cleaning steps applied to the datasets. This should be organized in a table.

1. **References 5%**

Details where the data was obtained using APA style referencing

1. **Other 5%**

A Sub Section for all other requirement and additional information your team see fit e.g. screenshots of all modeling done within Power BI, including the relationships, custom DAX measures you created and any additional advanced analytics components used in the assignment.

This section is where you should include your process documentation; the primary purpose of this is so someone would be able to pick up your work and continue with it (I think of this as insurance against becoming ill and being unable to complete the project). Must include the dimensional model design documentation, any design eg Star Shema or any other type of dimensional model used in designing data warehouses is fine. This must be designed as **ONE model**, that means the designed model and implementation on Power BI MUST include all dimensions and fact table(s) **in one file**. You will be **submitting the Power BI files**, the submitted file must align with the **dimensional model schema** in the appx); for example, references and data sources, detailed ETL processes and metadata organized in a table. We will be looking for this section to be complete, AND ask ourselves, could someone, using this documentation, be able to pick up the project and run with it.

**GROUP MARKER**

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| --- | --- | --- | --- | --- |
|  | **HD** | **D** | **C-P** | **N** |
| **Presentation Content (50%)** | | | | |
| **Introduction (10%)** | Introduced topic, established rapport and explained the purpose of presentation in creative, clear way capturing attention. | Introduced presentation in clear way. | Started with a self-introduction or “Our topic is” before capturing attention. | Did not clearly introduce purpose of presentation. |
| **Content Selection (10%)** | All information was relevant and appropriate to requirements of the assignment. | Most information relevant; some topics needed expansion or shortened. | Information was valid but some was not explicitly related to the purpose. | Information was not relevant to the audience or directly related to the assignment. |
| **Organization (10%)** | Contains a clear central message and clearly-identifiable sections featuring purposeful organizational pattern (e.g., chronological, problem-solution, analysis of parts, etc.) | Central message is identifiable; sections of presentation vary in explicit organizational pattern, which influences audience engagement level or comprehension of central message. | Central message is not clearly and/or easily identifiable by audience; sections may be in need of further organization and clarity. | Does not contain central message or identifiable organizational pattern. |
| **Transitions (10%)** | Effective, smooth transitions that indicated transitions in presentation topic or focus. | Included transitions to connect key points but speakers often used fillers such as um, ah, or like. | Included some transitions to connect key points but most speakers’ over reliance on fillers is distracting. | Presentation was choppy and disjointed with a lack of structure. |
| **Conclusion (10%)** | Ends with an accurate conclusion tying the content back to the opening with a dynamic 25 words or less close. Transitioned into close so audience was ready for it. | Ends with a summary of main points showing some evaluation but over the 25-word limit. Transitioned to close. | Ends with a recap of key points without adding a closing twist. | Ends with only a recap of key points or with no transition to closure. |

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|  | **HD** | **D** | **C-P** | **N** |
| **Physical Presentation and Delivery (30%)** | | | | |
| **Visual Aids (10%)** | Slides are professional and easy to read. Materials enable speakers to focus on presentation. | Slides contain appropriate material but too much text or too many images/builds. | Slides with occasional typos, unclear organization, and/or questionable applicability to presentation. All slides include significant amounts of text. | Typos throughout slides and; too much text on slides. Material on slides either is identical to speaker’s speech or completely disconnected from it. |
| **Vocal Qualities (5%)** | All members use clear, strong voice with vocal variation to demonstrate interest in the subject. All members demonstrate precise pronunciation of terms. | Most members speak in clear voice, but voices of some members drop in volume at times; all members still use vocal variation to show interest. | Voices of most group members are soft or lack vocal variation. | Voices of all members are soft and monotone. |
| **Eye Contact (5%)** | All speakers maintain eye contact with audience and seldom return to notes; presentation is like a planned conversation. Speakers are obviously prepared and have a solid grasp of the subject. | Speakers maintain eye contact most of the time but frequently return to notes. Speakers spent significant time preparing and appear at ease but don’t elaborate. | Speakers show some eye contact, but not maintained; and at least half the time, speakers read from notes. Speakers needed more practice or knowledge of their topic. | All speakers read all or most of report with no eye contact. Possibly, speakers did not practice out loud. Unlikely the speaker would be able to answer questions about the topic. |
| **Audience Engagement (5%)** | Involved audience in presentation; held their attention throughout by getting them actively involved in the speech and using original, clever, creative approach. | Presented facts with some interesting “twists”; held attention most of the time by interacting with them. Good variety of materials/media. | Multiple members went off topic and lost audience. Failed to utilize method to pull the audience into the speech. | Members avoid or discourage active audience participation. |
| **Appearance of speakers (5%)** | All members appear appropriate for occasion and audience. | For the most part, all members appear appropriate for the occasion and audience. | Most members’ appearance is somewhat inappropriate (hair keeps falling in eyes, jewellery distracting). | All members wear inappropriate clothes for event or audience. |

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|  | **HD** | **D** | **C-P** | **N** |
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| **Interpersonal Group Dynamics (20%)** | | | | |  |  |  | Only 1 or 2 group members participate. |
| **Speaker to Speaker Transitions (10%)** | Group members make smooth transitions from one speaker to the next; all are aware of who should be speaking and what each person’s role is. Transitions are explicit and speak to shifts in topic and purpose for shift. | Most transitions between speakers are conducted in smooth ways; one or two group members seem unclear about their roles or the timing of their parts. Most members address topic shift and purpose. | Transitions consist of abrupt shifts from one speaker to the next; some speakers announce next person but do not provide content-related explanation of new topic and purpose. | Speakers simply announce next speaker or stop talking and wait for next speaker to begin, and no attention is paid to shift in topic or purpose. |
| **Group Preparedness (10%)** | Each group member demonstrates awareness of role and that of other speakers. Members anticipated audience questions, and multiple members have apt responses. All members recognize all parts of presentation, slides, handouts, and other supporting materials. | Each group member demonstrates awareness of role and that of other speakers. Some members anticipated audience questions, and 1 or 2 members have apt responses. Most members recognize all parts of presentation, slides, handouts, and other supporting materials. | 1 or 2 members demonstrate awareness of role and that of other speakers. 1 or 2 members anticipated audience questions, and are the only speakers with apt responses. Some members acknowledge not recognizing all parts of presentation, slides, handouts, and other supporting materials. | All members show lack of clarity about their “part” and the roles of other speakers. No members anticipated audience questions. Most or all members acknowledge not recognizing all parts of presentation, slides, handouts, and other supporting materials. |
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Adapted from Cindy Kenkel, “Teaching Presentation Skills in Online Business Communication Courses,” Managerial Communication Oral Presentation Evaluation and AAC&U Oral Communication Metarubric