# BBUS1001 – Data Analytics Concepts

**Assignment 2: Create a data-driven solution to a business problem**

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| **Marks:** | 70 (Equivalent to 20% of the final grade) |
| **Assignment Type:** | Individual OR Group (A maximum of 2 students per group). |
| **Due Date:** | End of week 10 |

## Overview

Throughout this subject, you have gained an understanding of business databases and useful skills to analyse and visualise data. This assignment will provide you with an opportunity to demonstrate haw data analytics helps businesses to gain actionable insights and create data-driven solutions to a business problem through the database in **BUS1001-Ass2.xlsx file**.

## Submission Guidelines

1. If you are working in a team, **only one of you submits the assignment**. Make sure the Full Name and Student Id number of each group member is on the cover page of the report (the word document).

2. Your submission to this assignment is required to have **TWO FILES**.

   (a) **A WORD file**: contains all the answers to the questions. It must have a **cover page** containing the details of each group member and **3 sections**.

   - SECTION 1: Under this section you must have your answer to question 1
   - SECTION 2: Under this section your must have your answers to question 2, and
   - SECTION 3: Under this section you must have the data analytics report to Question 3 (including a copy of the dashboard created in the excel file.

   (b) **An EXCEL file**: contains all the calculations and the results of Questions 2 and 3.

   ***Note that if this file is missing or if the contents of this file do not match the answers in your WORD file, NO MARKS WILL BE AWARDED for questions 2 and 3.***

# Assignment Requirements

**Question 1 (20 marks)**

Write a short paragraph to answer each of the following questions:

a. What is an actionable insight? What are the key attributes to make an insight actionable? Give examples to contrast an actionable versus an unactionable insight (maximum of 300 words).

b. What are the three categories of insight-based value creation models and their example models? Select one top-line model and give a successful example from a well -known company, describing how they used data to drive their business (maximum of 200 words).

**Question 2 (20 marks)**

Given the ratings of movies from Africa and North America in the **Africa_NA** worksheet of the **BBUS1001-Ass2.xlsx** file, use the learnt statistical analysis techniques with **MS Excel** to provide answers/interpretations to the following questions.

a. (3 marks) What is the probability of having a rating above 7 for an African movie? What is the probability of having a rating above 7 for a North American movie? HINT: (Week 6 Tutorial tasks)

b. (4 marks) What is the 95% confidence interval of the average rating of African movies? (HINT: Task 1 of week 7 Tutorial)

c. (5 marks) With 95% confidence can we claim that the average rating of an African movie is greater than 6? (HINT: Task 3 to 6 of week 7 Tutorial)

d. (8 marks) Apply hypothesis testing to find out whether we can claim, with 95% confidence that African movies have a significantly higher average rating than North American movies (HINT: Tasks 7and 8 week 7)

**Question 3 (30 marks)**

A movie streaming company wants to promote movies from Africa. They want to get ***an insight into African movies*** so that they can come up with better strategies for the next production contracts. The **African _movies** worksheet **BBUS1001-Ass2.xlsx** file records the rating data of African movies.

You are required to analyse the provided data to support the company in deciding what genre should they produce, which production company should they sigh contracts etc. You must visualise the results of your analysis in a dashboard, and give recommendations based on insights/findings uncovered from your analysis.

Specifically, you will:

- Formulate your analytics tasks/questions. You must formulate 4 questions. For example, one question can be "What are the top ten genre of African movies that have the highest ratings and their corresponding total votes"?
- Analyse and visualise the results to answer the formulated questions. Then create a dashboard to combine the created visualisations telling a story about the key patterns/insights that you discovered in your analysis. You should choose appropriate visualisation types to convey your message (e.g. bar chart, line chart, pie chart etc.). HINT: You should formulate many questions and then choose four that can create a good story to combine them in a dashboard.
- Interpret the results in your visualisations to have insights into African movies.
- Recommend appropriate actions based on your insights so the company can have better strategies for the next production contracts.

## Marking rubrics

The marker will use the following marking guide to assess your work. Please make sure you understand what you need to cover for each question in this assignment.
Submissions having a high similarity score will be considered as plagiarism/collusion. Appropriate penalties are applied in response to findings of academic misconduct.

**Question 1 - (20 marks)**

**10 marks for each sub-question:**

| Criterion | Standard not met | Standard met | Standard exceeded |
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| | **0-3**<br>- Has Little or no meaningful information relating to the task.<br>- No reference.<br>- Significant grammar and spelling errors.<br>- Not draw readers through.<br>- Incorrect reference style | **4-7**<br>- Reasonable coverage of the required information relating to the task.<br>- Limited references.<br>- Some grammar and spelling errors.<br>- Readers can get through with some difficulties.<br>- Correct reference style | **8-10:**<br>- Excellent coverage of the required information relating to the task.<br>- An appropriate level of references.<br>- Acceptably low level of grammar and spelling errors<br>- Does an excellent job of drawing readers through.<br>- Correct reference style |

**Question 2 - (20 marks)**

A full mark is given for each correct question with a step-by-step answer. Half of the mark will be given for something close.

**Question 3 - (30 marks)**

| Criterion | Standard not met | Standard met | Standard exceeded |
|---|---|---|---|
| **Creative problem-solving – Formulate analytics tasks**<br>(6 marks) | **0-2**<br>- Makes little or no attempt to formulate the analytics task | **3-4**<br>- Formulate clear analytics tasks/questions without logical/reasonable arguments. | **5-6**<br>- Formulate clear analytics tasks/questions with logical/reasonable arguments. |
| **Data analysis and Visualisations**<br>(Comprise 4 charts and 1 dashboard)<br><br>(18 marks) | **0-6**<br>- The analysis and visualisations do not relate to the formulated analytics task.<br>- Wrong calculations. | **7-12:**<br>- The analysis and visualisations provide correct information to solve the formulated analytics task.<br>- Not all visualisation choices are appropriate.<br>- A reasonable effort in designing and format the visualisations. | **13-18:**<br>- The analysis and visualisations provide correct information to tell an effective data story to solve the formulated analytics task.<br>- Appropriate choice of visualisations.<br>- The visualisations are well-designed and formatted to convey the message/insight. |
| **Data interpretation – Insights and recommendations**<br><br>(6 marks) | **0-2:**<br>- Has no or poor logic flow.<br>- The insights and recommendations are not supported by the visualisations. | **3-4:**<br>- Moderate quality of logic.<br>- The insights and recommendations are aligned with the visualisations but missing elements or assumptions that lead readers to doubt the quality of the solution. | **5-6:**<br>- The insights and recommendations are well-supported and well-reasoned based on the visualisations.<br>- Assumptions noted. |