**1. Project**

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| **Faculty:** | Information Technology |
| **Module Code:** | ITCDA4-34 |
| **Module Name:** | Communication in Data Science |
| **Content Writer:** | Ms. Taryn Michael |
| **Internal Moderation:** | Community of Practice |
| **Copy Editor:** | Mr. Kyle Keens |
| **Total Marks:** | 100 |
| **Submission Week:** | Second Block week 6 |

This module is presented on NQF level 8.

5% will be deducted from the student’s Project mark for each calendar day the Project is submitted late, up to a maximum of three calendar days. The penalty will be based on the official campus submission date.

Projects submitted later than three calendar days after the deadline or not submitted will get 0%. [[1]](https://mylms.vossie.net/mod/book/view.php?id=720079#section1)

This is an individual project.

**This project contributes 40% towards the final mark.**

[1] Under no circumstances will Projects be accepted for marking after the Projects of other students have been marked and returned to the students.

**2. AI Checklist and Declaration**

Before you submit an assignment, you should be able to confidently and honestly make all the below statements. For group work, you can also review the list, together, to hold one another accountable.

* I confirm that my submission reflects my personal learning, knowledge, skills, and understanding.
* If AI tools were employed for generating any part of this assignment (even in the drafting/research phase), I have referenced the use of AI in the text and/or declared the use of AI. I am willing to discuss the process and its contribution to my learning.
* I am aware that the lecturer may request a demonstration of my learning, such as explaining choices in approach, research, and the content I am submitting.
* I am aware that, if I did use AI in any phase of preparing this submitted work, it is recommended that I save a copy of the relevant chat history (prompts and answers), as this will help me demonstrate my writing/work process to my lecturer, if I am asked to do so.
* I have read the assignment instructions on whether AI tools are prohibited for this assignment, and if they are prohibited, I can confirm that I did not use AI tools.
* I understand that failure to agree to these terms may be deemed unethical, potentially leading to disciplinary action. I understand my responsibility for the integrity of my work, including seeking clarification from academic staff and adhering to instructions.

It is essential to acknowledge your use of ChatGPT or other generative AI in your learning. If you use ChatGPT or other generative AI to help you generate ideas or plan your process, you should still acknowledge how you used the tool, even if you don’t include any AI-generated content in the assignment.

**Please note:** The following guiding questions that you will be asked in an AI declaration questionnaire below this assignment brief.

**AI Declaration**

**It is compulsory to complete this AI declaration for each of your assignment submissions.**

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| I carefully read the assignment instructions, and the extent to which AI may be used for the assignment. |
| I used the following AI system(s)/tool(s): |
| I used it for the following: |
| If I quoted or paraphrased an AI output, I have referenced the relevant tool, version, and the date I used the tool. |
| I still consider this work my own. (i.e., I have not outsourced the final product, or significant portions of it, to AI tools/systems). |
| If required, I can defend my argument/perspective, explain my choices and approach, and can show that I am knowledgeable about the details of my work. |

For further guidance on the use of AI at Eduvos, please refer to the AI FAQ glossary. You will locate the FAQs in the Artificial Intelligence tile on the myDocuments page of myLMS.

**3. Instructions to Students**

1. Please ensure that your answer file (where applicable) is named as follows before submission: **Module Code – Assessment Type – Campus Name – Student Number.**
2. Remember to keep a copy of all submitted assignments.
3. All work must be typed.
4. Please note that you will be evaluated on your writing skills in all your assignments.
5. All work must be submitted through Turnitin.  The full originality report will be automatically generated and available for the lecturer to assess. Negative marking will be applied if you are found guilty of plagiarism, poor writing skills, or if you have applied incorrect or insufficient referencing. (See the "instructions to students" book activity before this activity where the application of negative marking is explained.)
6. You are not allowed to offer your work for sale or to purchase the work of other students. This includes the use of professional assignment writers and websites, such as Essay Box. You are also not allowed to make use of artificial intelligence tools, such as ChatGPT, to create content and submit it as your own work. If this should happen, Eduvos reserves the right not to accept future submissions from you.

**4. Section A**

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| **Section A** |

**Learning Objective**

For learners to apply Python programming skills and concepts learned in ITCDA4-34 to improve the method of communicating insights from data analysis and visualizations to various stakeholders

**Project Topic**

Superstore Sales Analysis

**Scope**

First Block Week 1 to Second Block Week 7

**Marking Criteria**

Marking is done at the discretion of the marker. Plagiarism is solely forbidden. Any project found to contain plagiarism will be awarded an immediate mark of 0.

**4. Section A**

**4.1. Question 1**

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| **Question 1** | **30 Marks** |

Study the scenario and complete the question(s) that follow:

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| **International Superstore Analysis**  **Background:**  You have recently joined GlobalMart, a leading international superstore known for its wide range of products and extensive customer base. With increasing demands and fierce competition in the market, GlobalMart is eager to leverage data-driven insights to stay ahead. Your role as a data analyst is crucial in guiding the company’s strategic decisions.  **Objective:**  GlobalMart wants to understand which products, regions, categories, and customer segments they should focus on to maximize profitability and market share, and which areas may require revaluation or potential divestment.    **Expected Outcomes:**  Clear identification of high-performing and underperforming products, regions, categories, and customer segments.  Data-driven recommendations for targeted marketing, inventory adjustments, and strategic investments.  Enhanced decision-making capabilities for GlobalMart’s management team, leading to improved profitability and market position.  Your expertise and insights will play a pivotal role in shaping GlobalMart’s strategic direction and ensuring its continued success in a competitive marketplace.    **Dataset Columns Description:**  ·        Row ID: Unique ID for each row.  ·        Order ID: Unique Order ID for each Customer.  ·        Order Date: Order Date of the product.  ·        Ship Date: Shipping Date of the Product.  ·        Ship Mode: Shipping Mode specified by the Customer.  ·        Customer ID: Unique ID to identify each Customer.  ·        Customer Name: Name of the Customer.  ·        Segment: The segment where the Customer belongs.  ·        Country: Country of residence of the Customer.  ·        City: City of residence of the Customer.  ·        State: State of residence of the Customer.  ·        Postal Code: Postal Code of every Customer.  ·        Region: Region where the Customer belongs.  ·        Product ID: Unique ID of the Product.  ·        Category: Category of the product ordered.  ·        Sub-Category: Sub-Category of the product ordered.  ·        Product Name: Name of the Product.  ·        Sales: Sales of the Product.  ·        Quantity: Quantity of the Product.  ·        Discount: Discount provided.  ·        Profit: Profit/Loss incurred.    You may download the dataset from the “Project dataset” folder |

Exploratory Data Analysis:

Visualize your data to get a better understanding of it. The key questions you need to answer through your visualization are:

  I.          **Product Performance:**

Which products have the highest and lowest sales volumes and profit margins?

Are there any products with declining sales or low profitability that need attention?

  II.          **Regional Performance:**

How do sales and customer preferences vary across different regions?

Which regions are experiencing the highest and lowest sales growth, and what marketing efforts are recommended for these regions?

   III.          **Category Insights:**

Which product categories generate the most revenue and which have stagnant or declining sales?

Look at Time SERIES test prep

   IV.          **Seasonal and Lifecycle Trends:**

What are the seasonal trends and lifecycle stages of different products, and what inventory adjustments are needed?

    V.          **Shipping Modes and Sales on Products:**

What are the key purchasing behaviours and preferences for different shipping modes and how does discounts on products play a role in profitability and the market share of the store?

End of Question 1

**4. Section A**

**4.2. Question 2**

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| **Question 2** | **30 Marks** |

Select the most appropriate and important charts created in question 1 which will be relevant and useful to your target audience (Superstore CEO and investors) in understanding how to improve profitability. Use these charts to create a dashboard that you will present to the various stakeholders at the superstore to recommend actions they need to take to increase profitability.

Note: Keep in mind the choice of visualizations, placement and layout, colour scheme, and overall design of the dashboard to make it very user friendly and suited to your target audience.

End of Question 2

**4. Section A**

**4.3. Question 3**

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| **Question 3** | **20 Marks** |

To prepare for your presentation, you need to craft and refine your main message.

a.          Write down your 3 minute story with the above in mind, as well as the corresponding Big Idea based on your analysis done in question 1 and 2.

(15 Marks)

b.          Create your story board in preparation for the creation of your presentation in the next question.

                                                                                      (5 Marks)

End of Question 3

**4. Section A**

**4.4. Question 4**

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| **Question 4** | **20 Marks** |

Based on the analysis and dashboard in question 1 and 2, and the storyboard, 3-minute story and big idea crafted in question 3, create a short presentation in PowerPoint where you will present the most relevant visualizations and the insights from these visualizations to the necessary stakeholders. Based on your analysis, you will provide recommendations within your presentation on how to improve profitability for the superstore. Record yourself presenting and save this presentation in a video format to upload to the submission link. If you are unsure how to create a video presentation in PowerPoint, have a look through the following link:

A person pointing at something

Description automatically generated

Play Video

When presenting, keep in mind the length of the presentation (maximum 10 minutes), the overall layout and design, and the relevance to your target audience.

End of Question 4