IDEAS CAPSTONE PROJECT FOR DATA ANALYTICS AND BUSSINESS INTELLIGENCE EXPERTS

SUBMISSION GUIDELINE

- As a data analyst and business intelligence expert, you are expected to use the Sales dataset to provide solutions to challenges in Sections 1-12.
- Afterwards,
 - (a) Use any preferred tool to create two dashboards from the charts created in sections 1 to 12.
 - (b) Create a linkedin Page
 - (c) Join the Data Analyst and Business Intelligence Experts Group here
 - (d) Upload your dashboards on the linkedin group as a post (Remember to provide a brief discussion of what you have done)
 - (e) Upload the link of your post and a document containing your Tables in Sections 1-12 on this google form

BID: https://forms.gle/oiDrJaWN7aNfKNA49
DTA: https://forms.gle/dRdyb3mcEoy6Me477

Submission Deadline: MONDAY, 7TH OCTOBER, 2024

Name: Chiko Liu Abdulsamad Reg no : IDEAS/24/12322

DATA ANALYSIS PLAN (DAP) FOR SALES ANALYSIS

SECTION 1: ANALYSIS OF FEEDBACK THEMES

TASK: In this section, you are required to examine and categorize the themes extracted from customer feedback provided in the dataset.

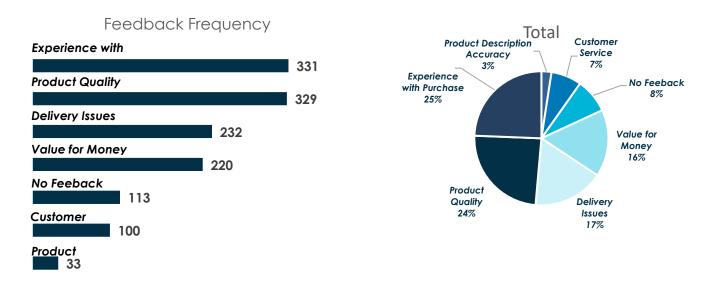
REQUIRED:

a) Compute the frequencies and percentages of the feedback themes as provided in Table 1

Table 1: Analysis of Feedback Themes

Suggested Feedback Themes	Frequency	Percentage			
Product Quality			Feedback theme	Frequency	percentag
Delivery Issues			Customer Service	100	7.36%
30			Delivery Issues	232	17.08%
Customer Service			Experience with Purchase	331	24.37%
			No Feeback	113	8.32%
Value for Money			Product Description Accuracy	33	2.43%
			Product Quality	329	24.23%
Experience with Purchase			Value for Money	220	16.20%
			Grand Total	1358	100.00%
Product Description Accuracy					

- b) Generate Charts to Visualize the feedback themes
 - Bar Chart: Display frequency of each theme to identify the most common issues.
 - Pie Chart: Show the proportion of each theme relative to the total feedback.
- c) Generate Insights from your analysis
 - Pinpoint areas for improvement and deduce what matters most to the customers.
 - Identify the most frequently mentioned themes.
 - Determine which feedback themes require immediate attention or improvement.



SECTION 2. SENTIMENT DISTRIBUTION

TASK: This section focuses on analyzing the overall sentiment expressed in the feedback.

REQUIRED:

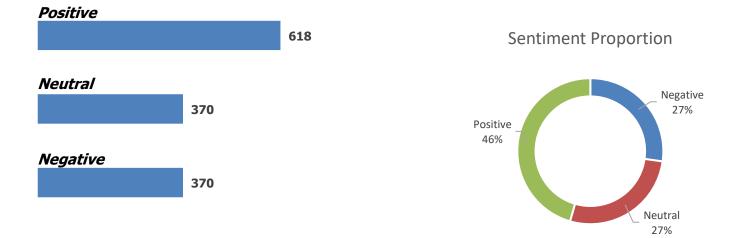
a) Compute the frequency and percentages of the sentiments as provided in Table 2

Table 2: Sentiment Distribution

Sentiment	Frequency	Percentage
Positive		
Neutral		
Negative		

sentiment	Frequency	percentage
Negative	370	27.25%
Neutral	370	27.25%
Positive	618	45.51%
Grand Total	1358	100.00%

- b) Generate a chart to visualize sentiment categories
 - **Pie Chart:** Visualize the proportion of positive, neutral, and negative sentiments.
 - **Bar Chart:** Compare the count of each sentiment type.
- c) Generate Insights from your analysis by assessing overall customer satisfaction or identifying if there is a prevalent sentiment in feedback.



SECTION 3. SALES ANALYSIS BY REGION

TASK: you are expected to analyze the sales data based on their geographic regions. This is to gain insight into the regional differences in total purchases and amount.

REQUIRED:

a) Complete Tables 3 and 4

Table 3: Analysis of No of Purchases by Region

Region	Frequency	Percentage
North America		
Europe		
Asia		
South America		
Africa		
Australia		

Region	Frequency	Percentage
Asia Pacific	212	17.83%
Europe	209	17.58%
Latin America	275	23.13%
Middle East & Africa	259	21.78%
North America	234	19.68%
Grand Total	1189	100.00%

Table 4: Analysis of Sales Amount by Region

Region	Total Amount	Average Amount	Percentage of Total Sales Amount
North America			
Europe			
Asia			
South America			
Africa			
Australia			

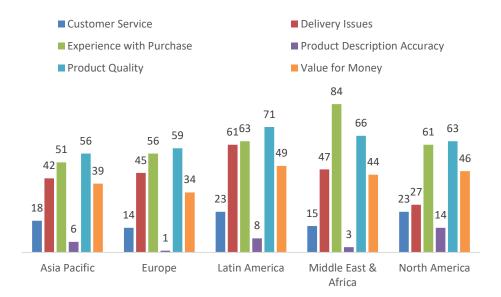
b) Generate a chart to visualize your recommendations:

- Map Visualization: Show feedback distribution across different regions.
- Bar Chart: Compare the number of feedback entries from each region.

c) Discuss insights generated from your analysis:

- Identify regions with the highest and lowest purchases.
- Identify regions with the highest and lowest total amount.
- Analyze regional trends and specific regional concerns.
- Give recommendations based on insight

Region	Total Amount	Average Amount	Percentage of Total Sales Amount
Asia Pacific	\$48,113.83	\$226.95	13.77%
Europe	\$64,107.14	\$306.73	18.34%
Latin America	\$80,352.95	\$292.19	22.99%
Middle East & Africa	\$63,404.91	\$244.81	18.14%
North America	\$59,353.44	\$253.65	16.98%
(blank)	\$34,199.00	\$202.36	9.78%
Grand Total	\$349,531.26	\$257.39	100.00%



SECTION 4. ANALYSIS OF CUSTOMER SEGMENTS

TASK: This section examines feedback based on different customer segments with a view to understand how different customers purchased their goods

REQUIRED:

a) Complete Table 4

Table 4: Analysis of by Customer Segment

Customer Segment	Frequency	Percentage
Online Direct		
Wholesale		
Retail		
Corporate		
Government		

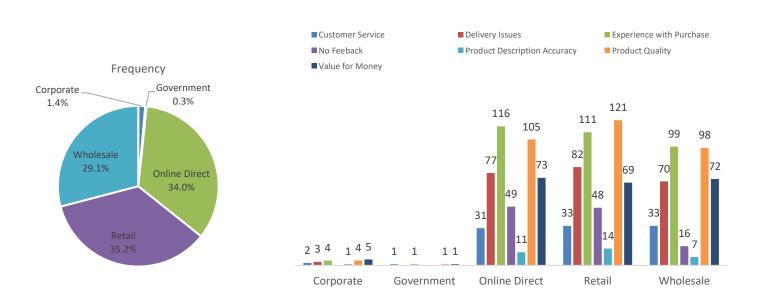
Customer Segment	Frequency I	Porcontago
customer segment	rrequericy_i	reiteillage_
Corporate	19	1.40%
Government	4	0.29%
Online Direct	462	34.02%
Retail	478	35.20%
Wholesale	395	29.09%
Grand Total	1358	100.00%

b) Generate a chart to visualize customer segments

- Bar Chart: Compare the number of feedback entries by customer segment.
- Pie Chart: Display the percentage distribution of feedback across segments.

c) Deduce insights to:

- Determine which customer segments are most vocal.
- Identify segment-specific feedback trends or issues.



SECTION 5. DATA ANALYSIS BY SALES REPRESENTATIVE

TASK: You are expected to analyze different sales representatives to determine if certain reps are associated with higher volumes purchases.

Required:

a) Provide a tabular analysis of the sales representatives by completing Tables 5a and b

Table 5a: Analysis of by Sales Representative

Sales Rep ID	Frequency	Percentage
Rep_01		
Rep_02		
Rep_03		
Rep_04		
Rep_05		
Rep_06		
Rep_07		
Rep_08		
Rep_09		
Rep_10		
Rep_11		
Rep_12		
Rep_13		
Rep_14		
Rep_15		
Rep_16		
Rep_17		
Rep_18		

SalesRep ID	Frequency	Percentage
REP001	106	7.81%
REP002	93	6.85%
REP003	105	
REP004	115	8.47%
REP005	99	7.29%
REP006	142	10.46%
REP007	104	7.66%
REP008	111	8.17%
REP009	135	9.94%
REP010	131	9.65%
REP011	33	2.43%
REP012	33	2.43%
REP013	2	0.15%
REP014	2	0.15%
REP015	2	0.15%
REP016	2	0.15%
REP017	44	3.24%
REP018	33	2.43%
REP019	33	2.43%
REP020	33	2.43%
Grand Total	1358	100.00%

Sales Rep ID	Frequency	Percentage
Rep_19		
Rep_20		

Table 5b: Analysis of by Sales Representative and Sales Channel

Sales Rep ID	Sales Channel	Frequency	Percentage
Rep_01	Online		
Rep_02	Offline		
Rep_03	Wholesale		
Rep_20	Direct		

- b) Illustrate Tables 5a and 5b with any preferred chart.
 - Deduce insights to Identify which sales representatives are associated with higher purchases. Any strange occurrence?

REPOOL Direct 17 REPOOL Cilline 30 REPOOL Cilline 31 REPOOL Cilline 32 REPOOL Cilline 31 REPOOL Cilline 30 REPOOL Cilline Cill	1.37% 2.65% 2.41% 1.12% 1.53% 2.17% 1.45% 1.61% 2.41% 1.93% 1.53% 1.53% 2.49% 2.09%
REPOOL Online 30 REPOOL Wholesale 14 REPOOL Olvet 19 REPOOL Offline 27 REPOOL Online 18 REPOOL Wholesale 20 REPOOL Offline 24 REPOOL Offline 24 REPOOL Offline 24 REPOOL Offline 24 REPOOL Offline 31 REPOOL Offline 31 REPOOL Offline 31 REPOOL Offline 31 REPOOL Offline 27 REPOOL Offline 21 REPOOL Offline 21 REPOOL Offline 21 REPOOL Offline 32 REPOOL Offline 32 REPOOL Offline 32 REPOOL Offline 22 REPOOL Offline 24 <th< th=""><th>2.41% 1.12% 1.53% 2.17% 1.45% 1.61% 2.41% 1.93% 1.93% 1.53% 2.49%</th></th<>	2.41% 1.12% 1.53% 2.17% 1.45% 1.61% 2.41% 1.93% 1.93% 1.53% 2.49%
REPOIL Wholesale 14 REPO02 Oliret 19 REPO02 Offline 27 REPO02 Wholesale 20 REPO03 Direct 30 REPO03 Offline 24 REPO03 Wholesale 19 REPO03 Wholesale 19 REPO04 Olline 31 REPO05 Olline 36 REPO06 Online 26 REPO07 Online 27 REPO08 Offline 21 REPO09 Online 20 REPO09 Offline 21 REPO09 Offline 22 REPO09 Offline 23 REPO09 Offline 23 REPO09 Offline 25 REPO09 Offline 25 REPO09 Offline 25 REPO09 Offline 25 REPO00 Offline 25 <t< th=""><th>1.12% 1.53% 2.17% 1.45% 1.61% 2.41% 1.93% 1.93% 1.53% 2.49%</th></t<>	1.12% 1.53% 2.17% 1.45% 1.61% 2.41% 1.93% 1.93% 1.53% 2.49%
REP002 Ordine 19 REP002 Online 18 REP003 Direct 30 REP003 Ordine 24 REP003 Ordine 24 REP003 Ordine 24 REP004 Direct 19 REP004 Ordine 31 REP004 Ordine 26 REP004 Ordine 27 REP003 Online 26 REP004 Ordine 27 REP005 Direct 19 REP006 Ordine 21 REP005 Ordine 22 REP006 Ordine 22 REP006 Ordine 33 REP006 Ordine 32 REP006 Ordine 32 REP007 Direct 28 REP008 Ordine 25 REP009 Direct 28 REP001 Ordine 25 REP002 <t< th=""><th>1.53% 2.17% 1.45% 1.61% 2.41% 1.93% 1.93% 1.53% 2.49%</th></t<>	1.53% 2.17% 1.45% 1.61% 2.41% 1.93% 1.93% 1.53% 2.49%
REP002 Offline 27 REP002 Wholesale 20 REP003 Direct 30 REP003 Offline 24 REP003 Wholesale 19 REP003 Wholesale 19 REP004 Offline 31 REP004 Offline 31 REP004 Wholesale 27 REP005 Direct 19 REP006 Offline 21 REP005 Offline 21 REP006 Offline 22 REP007 Offline 23 REP008 Offline 23 REP009 Offline 23 REP000 Offline 24 REP000 Offline 23 REP000 Offline 24 REP000 Offline 25 REP000 Offline 24 REP000 Offline 25 REP000 Offline 24	2.17% 1.45% 1.61% 2.41% 1.93% 1.53% 1.53% 2.49%
REP002 Wholesale 20 REP003 Offline 24 REP003 Offline 24 REP003 Wholesale 15 REP004 Direct 19 REP004 Offline 31 REP004 Wholesale 27 REP005 Offline 21 REP005 Offline 21 REP005 Offline 21 REP005 Offline 22 REP005 Offline 21 REP005 Offline 22 REP006 Offline 33 REP007 Offline 34 REP006 Offline 34 REP007 Offline 26 REP007 Offline 26 REP007 Offline 25 REP007 Offline 26 REP008 Offline 24 REP009 Offline 24 REP001 Offline 35	1.61% 2.41% 1.93% 1.93% 1.53% 2.49%
REPO03 Offine 24 REPO03 Online 24 REPO04 Direct 19 REPO04 Direct 19 REPO04 Offine 31 REPO04 Offine 26 REPO05 Direct 19 REPO05 Offine 21 REPO05 Offine 21 REPO05 Offine 22 REPO06 Direct 33 REPO06 Direct 33 REPO06 Offine 32 REPO06 Offine 32 REPO06 Offine 32 REPO07 Direct 28 REPO08 Offine 25 REPO07 Offine 25 REPO07 Offine 25 REPO08 Direct 24 REPO09 Offine 25 REPO08 Offine 25 REPO08 Offine 25 REPO09 <t< th=""><th>2.41% 1.93% 1.93% 1.53% 1.53% 2.49%</th></t<>	2.41% 1.93% 1.93% 1.53% 1.53% 2.49%
REP003 Offlime 24 REP003 Wholesile 19 REP004 Offline 31 REP004 Offline 31 REP004 Wholesile 26 REP005 Offline 27 REP005 Offline 21 REP005 Offline 21 REP005 Wholesile 29 REP006 Offline 32 REP006 Offline 32 REP006 Offline 32 REP006 Offline 32 REP007 Offline 32 REP008 Offline 26 REP007 Offline 26 REP008 Offline 25 REP009 Offline 24 REP008 Offline 24 REP009 Offline 25 REP009 Offline 25 REP009 Offline 35 REP010 Offline 25	1.93% 1.93% 1.53% 1.53% 2.49%
REP003 Online 24 REP004 Direct 19 REP004 Direct 19 REP004 Offline 31 REP005 Direct 27 REP005 Direct 19 REP005 Offline 21 REP005 Online 20 REP006 Direct 33 REP006 Direct 33 REP006 Offline 32 REP006 Online 34 REP007 Orline 34 REP008 Online 34 REP007 Direct 28 REP007 Offline 25 REP007 Online 25 REP008 Direct 28 REP009 Online 25 REP001 Offline 26 REP002 Online 25 REP003 Offline 26 REP004 Online 21 REP005	1.93% 1.53% 1.53% 2.49%
REPD03 Whotesale 19 REPD04 Offline 31 REPD04 Offline 31 REPD04 Wholesale 27 REPD05 Offline 21 REPD05 Offline 21 REPD05 Wholesale 29 REPD06 Wholesale 33 REPD06 Offline 34 REPD07 Online 34 REPD08 Offline 32 REPD07 Oract 28 REPD07 Offline 25 REPD07 Offline 25 REPD08 Direct 26 REPD09 Oract 28 REPD08 Orifine 24 REPD08 Orifine 24 REPD08 Orifine 23 REPD09 Direct 31 REPD09 Offline 32 REPD09 Offline 32 REPD10 Offline 32 <t< th=""><th>1.53% 1.53% 2.49%</th></t<>	1.53% 1.53% 2.49%
REPO04 Direct 19 REPO04 Online 26 REPO05 Direct 19 REPO05 Direct 19 REPO05 Offline 21 REPO05 Online 20 REPO05 Wholesale 29 REPO06 Offline 32 REPO06 Offline 32 REPO06 Offline 32 REPO07 Online 34 REPO08 Wholesale 30 REPO07 Online 26 REPO07 Online 25 REPO08 Direct 26 REPO09 Wholesale 19 REPO08 Offline 24 REPO08 Offline 25 REPO09 Offline 22 REPO09 Offline 23 REPO09 Offline 23 REPO10 Orline 25 REPO10 Orline 25 REPO	1.53% 2.49%
REPO04 Offline 25 REPO04 Wholesale 27 REPO05 Olivet 19 REPO05 Offline 21 REPO05 Online 20 REPO05 Wholesale 29 REPO06 Direct 33 REPO06 Offline 34 REPO06 Offline 34 REPO07 Online 34 REPO08 Wholesale 23 REPO07 Orifline 25 REPO07 Orifline 25 REPO08 Direct 26 REPO09 Orifline 24 REPO08 Orifline 24 REPO09 Orifline 23 REPO09 Orifline 23 REPO09 Orifline 25 REPO09 Orifline 25 REPO09 Orifline 25 REPO10 Orifline 25 REPO11 Orifline 27	2.49%
REPO04 Online 26 REPO05 Direct 19 REPO05 Offine 21 REPO05 Orline 20 REPO05 Wholesale 20 REPO06 Orline 33 REPO06 Orline 34 REPO06 Orline 34 REPO07 Orline 28 REPO07 Orline 26 REPO07 Orline 26 REPO07 Orline 25 REPO08 Orline 25 REPO09 Wholesale 19 REPO08 Orline 24 REPO08 Orline 28 REPO09 Orline 28 REPO09 Orline 28 REPO09 Orline 25 REPO10 Direct 31 REPO10 Orline 21 REPO10 Orline 21 REPO11 Orline 25 REPO12	
REPODS Offline 19 REPODS Offline 21 REPODS Wholesale 29 REPODG Direct 33 REPODG Offline 32 REPODG Offline 34 REPODG Wholesale 30 REPODG Offline 28 REPODG Offline 26 REPODG Offline 25 REPODG Offline 25 REPODG Offline 25 REPODG Offline 24 REPODG Offline 25 REPODG Offline 31 REPODG Offline 35 REPODG Offline 35 REPODG Offline 35 REPODG Offline 36	
REP005 Offline 21 REP005 Wholesale 29 REP006 Direct 33 REP006 Offline 34 REP006 Online 34 REP007 Direct 28 REP007 Offline 26 REP007 Offline 25 REP008 Direct 26 REP008 Direct 26 REP008 Offline 24 REP008 Offline 24 REP008 Offline 24 REP008 Offline 24 REP009 Orlocate 21 REP009 Offline 25 REP009 Orlocate 31 REP009 Orlocate 35 REP010 Offline 35 REP010 Offline 3 REP011 Offline 3 REP012 Orlocate 3 REP013 Orlocate 1 R	2.17%
REP005 Online 20 REP006 Direct 33 REP006 Offline 32 REP006 Online 34 REP006 Wholesale 30 REP007 Direct 28 REP007 Offline 25 REP007 Online 25 REP008 Direct 26 REP009 Direct 26 REP008 Offline 25 REP008 Offline 24 REP008 Offline 24 REP008 Online 28 REP009 Direct 31 REP009 Offline 25 REP009 Offline 25 REP009 Online 35 REP010 Direct 31 REP011 Offline 22 REP012 Offline 3 REP013 Offline 3 REP014 Offline 3 REP015	1.53%
REP005 Wholesale 33 REP006 Offline 32 REP006 Online 34 REP007 Direct 28 REP007 Offline 26 REP007 Offline 26 REP008 Offline 25 REP008 Offline 24 REP008 Offline 28 REP008 Offline 24 REP008 Offline 28 REP009 Offline 24 REP009 Offline 21 REP009 Offline 25 REP009 Offline 35 REP009 Offline 35 REP010 Direct 31 REP010 Offline 39 REP011 Offline 25 REP012 Offline 7 REP013 Offline 7 REP014 Offline 7 REP015 Offline 1 REP0	1.69%
REP006 Offine 33 REP006 Offline 34 REP006 Wholesale 30 REP007 Direct 28 REP007 Offline 26 REP007 Offline 25 REP008 Direct 26 REP008 Offline 24 REP008 Offline 24 REP008 Offline 24 REP009 Offline 25 REP009 Direct 31 REP009 Offline 25 REP009 Offline 35 REP009 Wholesale 28 REP001 Offline 35 REP010 Offline 31 REP011 Direct 31 REP012 Offline 22 REP011 Offline 3 REP012 Offline 3 REP013 Online 4 REP014 Offline 1 REP01	1.61% 2.33%
REP006 Offline 32 REP006 Online 34 REP007 Direct 28 REP007 Offline 26 REP007 Online 25 REP008 Direct 26 REP008 Offline 24 REP008 Offline 23 REP008 Offline 23 REP009 Offline 23 REP009 Offline 25 REP009 Offline 35 REP009 Offline 35 REP010 Direct 31 REP010 Direct 31 REP010 Offline 39 REP010 Offline 39 REP011 Direct 12 REP012 Offline 7 REP013 Offline 7 REP014 Online 8 REP015 Offline 7 REP016 Offline 1 REP017	2.65%
REP006 Online 34 REP007 Direct 28 REP007 Offline 26 REP007 Online 25 REP007 Wholesale 19 REP008 Direct 26 REP008 Offline 24 REP008 Online 28 REP008 Online 21 REP009 Direct 31 REP009 Offline 25 REP009 Offline 25 REP009 Online 25 REP001 Online 35 REP010 Offline 31 REP011 Offline 21 REP012 Offline 21 REP013 Offline 25 REP014 Offline 7 REP015 Offline 7 REP016 Offline 7 REP017 Online 1 REP018 Online 1 REP019	2.57%
REP006 Wholesale REP007 Direct 28 REP007 Offline 26 REP007 Online 25 REP008 Direct 26 REP008 Offline 24 REP008 Offline 28 REP008 Wholesale 21 REP009 Direct 31 REP009 Offline 25 REP009 Offline 25 REP009 Offline 35 REP009 Wholesale 28 REP010 Offline 35 REP010 Offline 39 REP010 Offline 21 REP011 Wholesale 25 REP011 Offline 7 REP011 Offline 8 REP012 Oriline 8 REP013 Oriline 7 REP014 Oriline 1 REP015 Oriline 1 REP016 <	2.73%
REPOOT Offline 26 REPOOT Online 25 REPOOR Direct 26 REPOOR Offline 24 REPOOR Offline 28 REPOOR Online 28 REPOOR Wholesale 21 REPOOR Offline 25 REPOOR Online 25 REPOOR Wholesale 28 REPOOR Wholesale 28 REPOOR Offline 35 REPOOR Online 25 REPOOR Offline 21 REPOOR Online 21 REPOOR Online 21 REPOOR Online 22 REPOOR Online 25 REPOOR Online 8 REPOOR Online 8 REPOOR Online 7 REPOOR Online 7 REPOOR Online 1 REPOOR	2.41%
REPD07 Online 25 REP008 Direct 26 REP008 Offline 24 REP008 Online 28 REP009 Online 21 REP009 Direct 31 REP009 Offline 25 REP009 Online 35 REP009 Wholesale 28 REP010 Direct 31 REP010 Offline 39 REP010 Online 39 REP011 Direct 12 REP012 Wholesale 25 REP013 Offline 7 REP014 Online 8 REP015 Direct 9 REP016 Online 7 REP017 Online 1 REP013 Direct 1 REP014 Direct 1 REP015 Online 1 REP016 Offline 1 REP017	2.25%
REP007 Wholesale REP008 Direct REP008 Offline REP008 Online REP009 Wholesale REP009 Direct REP009 Online REP009 Online REP009 Wholesale REP010 Direct REP010 Offline REP010 Online REP010 Online REP011 Direct REP012 Offline REP013 Online REP014 Online REP015 Online REP016 Online REP017 Online REP018 0 REP019 0 REP011 Online REP012 Online REP013 Direct REP014 Direct REP015 Online REP016 Direct REP017 Online REP018 Direct REP019	2.09%
REP008 Direct 26 REP008 Offline 24 REP008 Online 28 REP009 Direct 31 REP009 Offline 25 REP009 Online 35 REP009 Wholesale 28 REP010 Direct 31 REP010 Offline 39 REP010 Offline 21 REP010 Wholesale 25 REP011 Direct 12 REP012 Offline 7 REP011 Online 8 REP012 Direct 9 REP012 Offline 7 REP012 Offline 7 REP012 Offline 1 REP013 Direct 1 REP014 Offline 1 REP013 Online 1 REP014 Offline 1 REP015 Online 1 REP016	2.01% 1.53%
REP008 Offline 24 REP008 Online 28 REP009 Direct 31 REP009 Offline 25 REP009 Online 35 REP009 Wholesale 28 REP010 Direct 31 REP010 Offline 39 REP010 Online 21 REP010 Wholesale 25 REP011 Direct 12 REP012 Offline 7 REP013 Online 8 REP014 Wholesale 6 REP015 Offline 7 REP016 Offline 7 REP013 Online 1 REP014 Direct 1 REP015 Online 1 REP016 Offline 1 REP015 Online 1 REP016 Offline 1 REP017 Direct 1 REP017	2.09%
REP008 Online 28 REP009 Direct 31 REP009 Offline 25 REP009 Online 35 REP009 Wholesale 28 REP010 Direct 31 REP010 Offline 39 REP010 Online 21 REP011 Direct 12 REP011 Direct 12 REP011 Online 8 REP011 Wholesale 6 REP012 Orline 9 REP013 Orline 7 REP014 Orline 7 REP015 Online 1 REP016 Orline 1 REP017 Orline 1 REP016 Offline 1 REP017 Orline 1 REP017 Orline 1 REP017 Orline 1 REP017 Orline 1 REP018 Or	1.93%
REP009 Offline 31 REP009 Offline 25 REP009 Wholesale 28 REP010 Direct 31 REP010 Offline 39 REP010 Online 21 REP011 Direct 12 REP011 Offline 7 REP011 Online 8 REP011 Wholesale 6 REP012 Direct 9 REP012 Offline 7 REP012 Online 7 REP013 Direct 1 REP014 Online 1 REP015 Offline 1 REP016 Offline 1 REP015 Online 1 REP016 Direct 1 REP017 Direct 1 REP017 Offline 1 REP017 Online 7 REP017 Online 7 REP018	2.25%
REP009 Offline 25 REP009 Online 35 REP010 Direct 31 REP010 Offline 31 REP010 Offline 39 REP010 Wholesale 25 REP011 Direct 12 REP011 Offline 7 REP011 Wholesale 6 REP012 Direct 9 REP012 Offline 7 REP012 Offline 7 REP012 Online 7 REP012 Wholesale 10 REP013 Direct 1 REP014 Direct 1 REP013 Online 1 REP014 Direct 1 REP015 Offline 1 REP016 Offline 1 REP015 Online 1 REP016 Oifeline 1 REP017 Oirect 1 REP017	1.69%
REP009 Online 35 REP009 Wholesale 28 REP010 Direct 31 REP010 Offline 39 REP010 Online 21 REP010 Wholesale 25 REP011 Direct 12 REP011 Offline 7 REP011 Online 8 REP011 Wholesale 6 REP012 Direct 9 REP013 Offline 7 REP014 Offline 1 REP013 Direct 1 REP014 Direct 1 REP013 Online 1 REP014 Offene 1 REP015 Offline 1 REP016 Offline 1 REP015 Online 1 REP016 Direct 1 REP017 Oirect 1 REP017 Online 7 REP017 <td< th=""><th>2.49%</th></td<>	2.49%
REP010 Direct 31 REP010 Direct 31 REP010 Offline 39 REP010 Online 21 REP010 Wholesale 25 REP011 Direct 12 REP011 Offline 7 REP011 Online 8 REP012 Wholesale 6 REP013 Direct 9 REP014 Online 7 REP015 Online 1 REP014 Direct 1 REP014 Direct 1 REP015 Offline 1 REP016 Direct 1 REP017 Direct 1 REP017 Offline 1 REP017 Offline 7 REP017 Online 7 REP018 Direct 15 REP019 Online 15 REP017 Ohloesale 15 REP018 <t< th=""><th>2.01%</th></t<>	2.01%
REP010 Direct 31 REP010 Offline 39 REP010 Wholesale 21 REP011 Direct 12 REP011 Offline 7 REP011 Online 8 REP012 Direct 9 REP012 Direct 9 REP012 Offline 7 REP012 Online 7 REP012 Wholesale 10 REP013 Direct 1 REP014 Direct 1 REP013 Online 1 REP014 Direct 1 REP015 Offline 1 REP016 Direct 1 REP015 Online 1 REP016 Direct 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Online 7 REP018 Dire	2.81% 2.25%
REP010 Offline 39 REP010 Online 21 REP011 Direct 12 REP011 Offline 7 REP011 Online 8 REP011 Wholesale 6 REP012 Direct 9 REP012 Offline 7 REP012 Online 7 REP012 Online 7 REP013 Direct 1 REP013 Direct 1 REP014 Direct 1 REP015 Online 1 REP014 Offline 1 REP015 Online 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Orline 7 REP017 Orline 7 REP017 Orline 7 REP017 Orline 7 REP017 Orline <th>2.49%</th>	2.49%
REP010 Online 21 REP010 Wholesale 25 REP011 Direct 12 REP011 Offline 7 REP011 Wholesale 6 REP012 Direct 9 REP012 Offline 7 REP012 Online 7 REP013 Direct 1 REP013 Online 1 REP014 Direct 1 REP015 Offline 1 REP016 Offline 1 REP017 Direct 1 REP017 Offline 1 REP017 Offline 9 REP017 Online 7 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 15 REP019 Online 15 REP018 Direct 9	3.13%
REP011 Direct 12 REP011 Offline 7 REP011 Online 8 REP012 Wholesale 6 REP012 Direct 9 REP012 Offline 7 REP012 Online 7 REP012 Wholesale 10 REP013 Direct 1 REP013 Online 1 REP014 Direct 1 REP015 Offline 1 REP016 Online 1 REP016 Direct 1 REP017 Direct 13 REP017 Online 7 REP017 Online 7 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	1.69%
REP011 Offline 7 REP011 Online 8 REP012 Wholesale 6 REP012 Direct 9 REP012 Offline 7 REP012 Wholesale 10 REP013 Direct 1 REP014 Direct 1 REP014 Offline 1 REP015 Offline 1 REP016 Direct 1 REP016 Direct 1 REP017 Offline 1 REP017 Offline 9 REP017 Online 7 REP017 Online 7 REP017 Online 7 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	2.01%
REP011 Online 8 REP012 Wholesale 6 REP012 Direct 9 REP012 Offline 7 REP012 Wholesale 10 REP013 Direct 1 REP014 Direct 1 REP014 Offline 1 REP015 Offline 1 REP016 Direct 1 REP016 Direct 1 REP017 Offline 1 REP017 Offline 9 REP017 Online 7 REP018 Direct 15 REP018 Direct 9	0.96%
REP012 Wholesale REP012 Direct 9 REP012 Offline 7 REP012 Online 7 REP012 Wholesale 10 REP013 Direct 1 REP013 Online 1 REP014 Direct 1 REP014 Offline 1 REP015 Offline 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.56%
REP012 Direct 9 REP012 Offline 7 REP012 Online 7 REP012 Wholesale 10 REP013 Direct 1 REP013 Online 1 REP014 Direct 1 REP014 Offline 1 REP015 Offline 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.64% 0.48%
REP012 Offline 7 REP012 Online 7 REP012 Wholesale 10 REP013 Direct 1 REP014 Direct 1 REP014 Offline 1 REP015 Offline 1 REP015 Online 1 REP016 Direct 1 REP017 Offline 1 REP017 Offline 9 REP017 Online 7 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.72%
REP012 Wholesale 10 REP013 Direct 1 REP014 Direct 1 REP014 Offline 1 REP015 Offline 1 REP015 Online 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.56%
REP013 Direct 1 REP014 Direct 1 REP014 Offline 1 REP015 Offline 1 REP015 Online 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.56%
REP013 Online 1 REP014 Direct 1 REP014 Offline 1 REP015 Offline 1 REP015 Online 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Online 9 REP017 Wholesale 15 REP018 Direct 9	0.80%
REP014 Direct 1 REP015 Offline 1 REP015 Online 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.08%
REP014 Offline 1 REP015 Offline 1 REP015 Online 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Online 9 REP017 Wholesale 15 REP018 Direct 9	0.08% 0.08%
REP015 Offline 1 REP015 Online 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.08%
REP015 Online 1 REP016 Direct 1 REP016 Offline 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.08%
REP016 Offline 1 REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.08%
REP017 Direct 13 REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.08%
REP017 Offline 9 REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	0.08%
REP017 Online 7 REP017 Wholesale 15 REP018 Direct 9	1.04%
REP017 Wholesale 15 REP018 Direct 9	0.72% 0.56%
REP018 Direct 9	1.20%
	0.72%
	0.72%
REP018 Online 12	
REP018 Wholesale 3	0.96%
REP019 Direct 5 REP019 Offline 13	0.96% 0.24%
REP019 Offline 13 REP019 Online 10	0.96% 0.24% 0.40%
REP019 Wholesale 5	0.96% 0.24% 0.40% 1.04%
REPO20 Direct 6	0.96% 0.24% 0.40%
REP020 Offline 12	0.96% 0.24% 0.40% 1.04% 0.80%
REP020 Online 6	0.96% 0.24% 0.40% 1.04% 0.80% 0.40%
REP020 Wholesale 9	0.96% 0.24% 0.40% 1.04% 0.80% 0.40% 0.48% 0.96% 0.48%
Grand Total 1245 1	0.96% 0.24% 0.40% 1.04% 0.80% 0.40% 0.48% 0.96%

SECTION 6. ANALYSIS OF BY PRODUCT CATEGORY

TASK: You are expected to analyze the data based on product categories. This should help you to determine which types of products are receiving the most attention and identify any category-specific issues.

REQUIRED:

Table 6: Analysis of purchases by Product Category

Product Category	Frequency	Percentage
Electronics		
Clothing		
Home Goods		
Beauty		
Sports		
Automotive		
Toys		
Food & Beverages		

Product Category	Frequency	Percentage
Automotive	15	1.10%
Beauty	208	15.32%
Clothing	253	18.63%
Electronics	275	20.25%
Food & Beverages	10	0.74%
Home Goods	384	28.28%
Sports	213	15.68%
Grand Total	1358	100.00%

- b) Use bar or pie charts to visualize the product categories
 - Bar Chart: Show the number of entries per product category.
 - Pie Chart: Illustrate the percentage distribution across categories.
- c) Provide insights to:
 - Identify product categories satisfaction ratings.
 - Give recommendations on which products should be marketed more, or discontinued...

SECTION 7. SALES ANALYSIS BY PRODUCT NAME

TASK: You are expected to analyze purchases related to specific product names. This will help you understand how individual products are performing.

REQUIRED:

a) Complete Tables 7a and 7b

Table 7a: Sales Analysis by Product Name

Product Name	Frequency	Percentage
Widget A		
Widget B		
Widget C		
Widget D		
Widget E		
Widget F		
Widget G		
Widget H		
Widget I		
Widget J		

Table 7b: Analysis by Sales Channel and Product Name

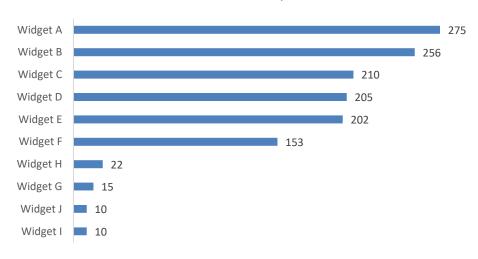
Sales Channel	Product Name	Frequency	Percentage
Online	Widget A		
Offline	Widget B		
Wholesale	Widget C		
Direct	Widget D		

Product Name	Frequency	Percentage
Widget A	275	20.25%
Widget B	256	18.85%
Widget C	210	15.46%
Widget D	205	15.10%
Widget E	202	14.87%
Widget F	153	11.27%
Widget G	15	1.10%
Widget H	22	1.62%
Widget I	10	0.74%
Widget J	10	0.74%
Grand Total	1358	100.00%

Sales Channel	Product Name	Frequency	Percentage
Marketplace	Widget A	69	5.54%
	Widget B	75	6.02%
	Widget C	53	4.26%
	Widget D	50	4.02%
	Widget E	40	3.21%
	Widget F	49	3.94%
	Widget I	2	0.16%
	Widget J	4	0.32%
Online Direct	Widget A	73	5.86%
	Widget B	62	4.98%
	Widget C	57	4.58%
	Widget D	57	4.58%
	Widget E	30	2.41%
	Widget F	30	2.41%
	Widget I	2	0.16%
	Widget J	2	0.16%
Retail	Widget A	70	5.62%
	Widget B	62	4.98%
	Widget C	52	4.18%
	Widget D	49	3.94%
	Widget E	31	2.49%
	Widget F	38	3.05%
	Widget I	6	0.48%
	Widget J	2	0.16%
Wholesale	Widget A	63	5.06%
	Widget B	57	4.58%
	Widget C	48	3.86%
	Widget D	49	3.94%
	Widget E	25	2.01%
	Widget F	36	2.89%
	Widget J	2	0.16%
Grand Total		1245	100.00%

- b) Use any chart to visualize the Tables. This could be:
 - Bar Chart: Compare no of purchases for each product.
 - Word Cloud: Display frequently mentioned products in analysis.
- c) Provide insights to:
 - Identify products with the most and least purchases.
 - Make recommendations on which products should be pushed to the front shelves

No. of Purchase by Product





SECTION 8. ANALYSIS OF BY SALES CHANNEL

TASK: This section looks at sales channel to identify how most customers purchase the products available.

REQUIRED:

a) Complete Tables 8a and 8b

Table 8a: Analysis of by Sales Channel

Sales Channel	Frequency	Percentage
Online		
Offline		
Wholesale		
Direct		

Sales Channel Seg	Frequency pr	ecentage
Direct	310	24.90%
Offline	342	27.47%
Online	313	25.14%
Wholesale	280	22.49%
Grand Total	1245	100.00%

Table 8b: Analysis of customer general feedback across the different channels, identify if the most common feedbacks for sales reps are negative, positive or neutral

Sales Channel Frequency

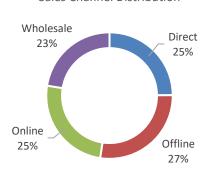
Sales Channel	Feedback	Frequency of Feedbacks	Percentage of Feedbacks
Online			
Offline			
Wholesale			
Direct			



Sales Channel Distribution

- b) Create a bar and Pie charts to visualize your tables.
 - **Bar Chart:** Show the frequency of analysis entries by sales channel.
 - **Pie Chart:** Display the distribution of analysis across sales channels.
- c) Deduce insights to:
 - Determine which sales channels are associated with higher or lower levels of analysis.
 - Identify trends or possible issues with specific to different sales channels.
 - Carry out recommendations on ways to improve certain channels

	Frequency			Pe	ercentag	e
Sales Channel	Negative	Neutral	Positive	Negative	Neutral	Positive
Direct	85	96	129	7%	8%	10%
Offline	88	93	161	7%	7%	13%
Online	89	88	136	7%	7%	11%
Wholesale	75	78	127	6%	6%	10%



SECTION 9. ANALYSIS OF RETURN STATUS

TASK: This section will help you to assess the impact of returns on overall customer satisfaction and

identify an	y trends.
-------------	-----------

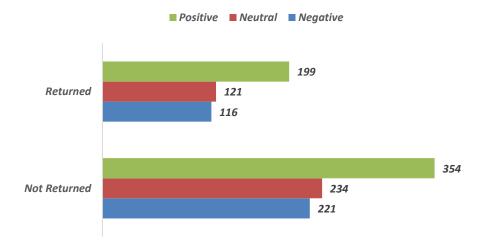
, ,		Frequency	'		Percentage	2	Total Frequency	Total Percentage
REQUIRED:	Return Status	Negative	Neutral	Positive	Negative	Neutral Positive		
	Not Returned	221	234	354	17.75%	18.80% 28.43%	809	64.98%
a) Complete Table 9	Returned	116	121	199	9.32%	9.72% 15.98%	436	35.02%
	Grand Total	337	355	553	27.07%	28.51% 44.42%	1245	100.00%

Table 9: Analysis of Return Status

Return Status	Frequency	Percentage	Highest Sales Rep Feedback	Percentage out of all feedbacks
Returned				
Not Returned				

- b) Create a chart to visualize your table
- c) Generate insights to:
 - Determine the impact of return status on customer analysis.
 - Analyze if return status is linked with sales rep feedback.

Returned Status and Customer Feedback



SECTION 10. PRICE ANALYSIS

TASK: In this section, you are to analyze product prices to understand their impact on customer feedback. This is to evaluate how pricing affects the frequency and nature of feedback.

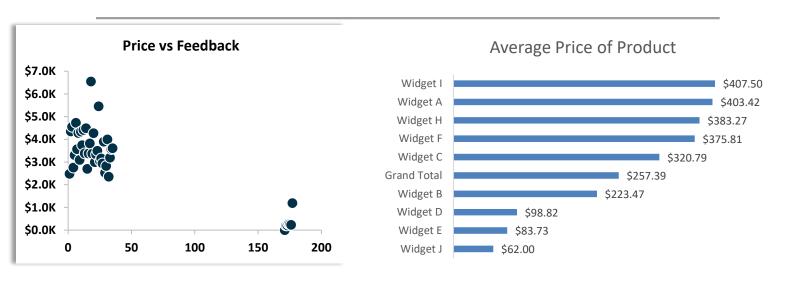
REQUIRED:

Table 10: Price Analysis

Product Name	Average Price	Highest Price	Lowest Price
Widget A			
Widget B			
Widget C			
Widget D			
Widget E			

Product Name	Average Price	Highest Price	Lowest Price
Widget A	\$403.42	\$4,500	\$0
Widget B	\$223.47	\$2,000	\$0
Widget C	\$320.79	\$2,600	\$0
Widget D	\$98.82	\$2,000	\$0
Widget E	\$83.73	\$780	\$0
Widget F	\$375.81	\$3,120	\$0
Widget G	\$414.60	\$1,040	\$52
Widget H	\$383.27	\$1,625	\$26
Widget I	\$407.50	\$780	\$100
Widget J	\$62.00	\$128	\$26

- b) Use a bar chart and scatter plot to visualize your Table
 - Bar Chart: Compare the average price of products.
 - Scatter Plot: Show the relationship between price and feedback frequency.
- c) Deduce insights to:
 - Analyze the impact of product price on customer feedback.
 - Determine if higher or lower-priced products receive more or less positive feedback.



SECTION 11. DISCOUNT ANALYSIS

TASK: This section focuses on analyzing discount rates and identify trends related to discount rates.

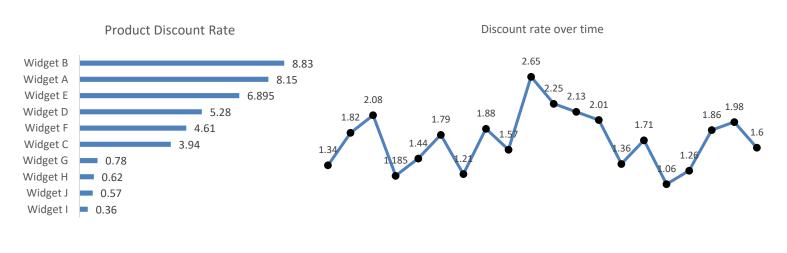
REQUIRED:

Table 11: Discount Analysis

Product Name	Discount Rate
Widget A	
Widget B	
Widget C	
Widget D	
Widget E	

Product Name	Discount Rate
Widget A	8.15
Widget B	8.83
Widget C	3.94
Widget D	5.28
Widget E	6.895
Widget F	4.61
Widget G	0.78
Widget H	0.62
Widget I	0.36
Widget J	0.57
Grand Total	40.035

- b) Create bar chart and line graph to visualize your table
 - Bar Chart: Show average discount rates for different products.
 - Line Chart: Track changes in discount rates over time and their effect on feedback.
- c) Deduce insights to:
 - Determine the effect of discount rates on sales.
 - Analyze if discounts lead to increased Sales rep positive or negative feedback.



SECTION 12. PROFIT MARGIN ANALYSIS

TASK: This section will help us determine if there is a correlation between profit margins and feedback sentiment or frequency.

REQUIRED:

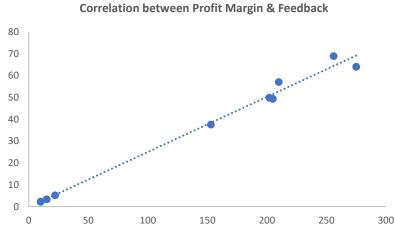
Table 12: Profit Margin Analysis

Product Name	Cost Price	Selling Price	Profit Margin
Widget A			
Widget B			
Widget C			
Widget D			
Widget E			

Product Name	Cost Price	Selling Price	Profit Margin
Widget A	\$80,983.00	\$110,940.18	64%
Widget B	\$38,820.00	\$57,208.51	69%
Widget C	\$44,005.00	\$67,366.79	57%
Widget D	\$11,750.00	\$20,257.65	49%
Widget E	\$10,927.00	\$16,913.17	50%
Widget F	\$42,260.00	\$57,498.95	38%
Widget G	\$4,770.00	\$6,219.00	3%
Widget H	\$6,460.00	\$8,432.00	5%
Widget I	\$3,110.00	\$4,075.00	2%
Widget J	\$485.00	\$620.00	2%

- b) Use a bar chart and scatter plot to visualize your table
 - Bar Chart: Compare profit margins across products.
 - Scatter Plot: Show the relationship between profit margins and feedback.
- c) Deduce insights to:
 - Analyze how profit margins impact customer feedback.
 - Determine if higher or lower profit margin products are associated with different types of feedback.





SUBMISSION GUIDELINE

- As a data analyst and business intelligence expert, you are expected to use the Sales dataset to provide solutions to challenges in Sections 1-12.
- Afterwards,
 - a) Use any preferred tool to create two dashboards from the charts created in sections 1 to 12.
 - b) Create a linkedin Page
 - c) Join the Data Analyst and Business Intelligence Experts Group here
 - d) Upload your dashboards on the linkedin group as a post (Remember to provide a brief discussion of what you have done)
 - e) Upload the link of your post and a document containing your Tables in Sections 1-12 on this google form

BID: https://forms.gle/oiDrJaWN7aNfKNA49
DTA: https://forms.gle/dRdyb3mcEoy6Me477

Submission Deadline: MONDAY, 7TH OCTOBER, 2024