NANYANG POLYTECHNIC

ITDFPA/AY2024 SEMESTER 2 – MOCK PRACTICAL TEST

Course : Diploma in APPLIED AI & ANALYTICS

Competency Unit : IT1391 – Data Visualisation

Nov 2024 Time Allowed: 1 hour

INSTRUCTIONS TO CANDIDATES

1. This test consists of **ONE (1)** question, with multiple part-questions. You are required to answer ALL the part-questions.

2. This is an **OPEN BOOK** test.

3. Communication is **NOT** allowed during the test. Any form of communication among students via any communication channel (e.g., ChatGPT, Whatsapp, Discord, smart devices/phones) is strictly prohibited at all times.

4. Students will be liable to disciplinary action if found cheating or attempting to cheat.

5. Dataset and company logo will be given to you.

6. You are required to complete the test using Microsoft Power BI workbook and rename the workbook as **249999A_PracticalTest** where **249999A** is your student admission number. Attach your solution workbook into the BrightSpace for submission. Only attached copy found in the BrightSpace will be graded.

Name: _____ **Adm. No:** _____

Module Group: _____

Wonder Mart offers a wide variety of products to their customers. Assuming that you are working as a data analyst in Wonder Mart, you are tasked to generate a report using Power BI before analysing the sales data of the company.

You will create queries based on the given dataset, **WonderMartData.xlsx**. Get the data from both worksheets (Order_Table and Master_Date_Table) in the file.

Part 1: Load data in Power BI Desktop (8 marks)

a. Configure the Orders query using the Transform Data function.

S/N	Task	Mark(s)
i.	In the Power Query Editor, rename the Order_Table query to Orders.	1
ii.	Merge CountryCode and OrderNumber columns with '-' as a separator between them. The new column should be named Order ID. For example, CountryCode = CA OrderNumber = 2019-152156 After merging the columns, the Order ID should be CA-2019-152156.	2
iii.	In the Category column, there is an incorrect spelling of office supplies, replace "OfficeSupplies" with "Office Supplies".	1
iv.	Change the data type of the following columns accordingly. OrderDate – Date ProductCost - Decimal Number	1
v.	Rename the following columns. • OrderDate to Order Date • ShipDate to Ship Date	1

b. Configure the Master Date query using the Transform Data function.

S/N	Task	Mark(s)
i.	In the Power Query Editor, rename the Master_Date_Table query to Master Date.	1
ii.	Choose all columns except the WeekNum column.	1

Part 2: Model data in Power BI Desktop (8 marks)

a. Configure the Orders Table in Model and Data View

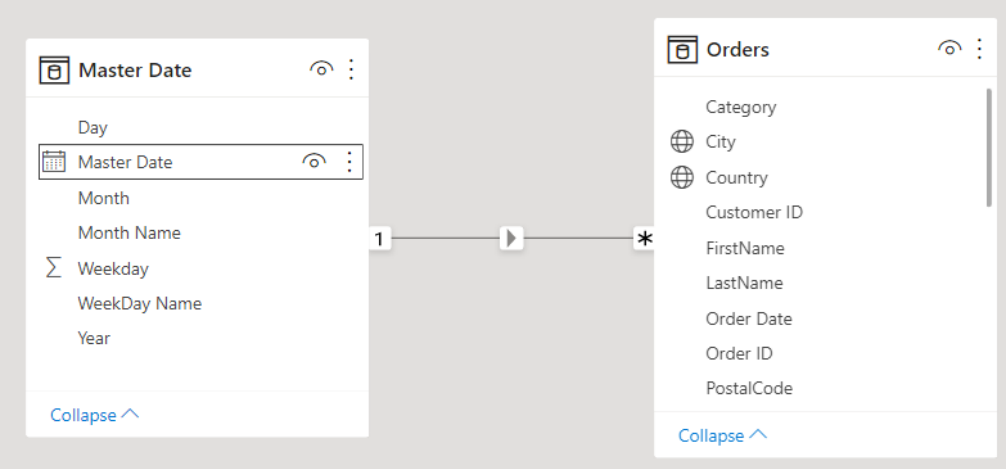
S/N	Task	Mark(s)
i.	Create a hierarchy named Location with the information provided below. 1st Level: Country 2nd Level: State 3rd Level: City	2
ii.	Categorise the following two columns: • Country as Country/Region • State as State or Province • City as City	2

b. Configure the Master Date Table in Model View

S/N	Task	Mark
i.	Change the Summarized by setting for Year, Month and Day to None.	2
ii.	Mark Master Date table as a Date Table	1

c. Create the following model relationships

S/N	Task	Mark
i.	• From Master Date | Master Date to Orders | Order Date	1



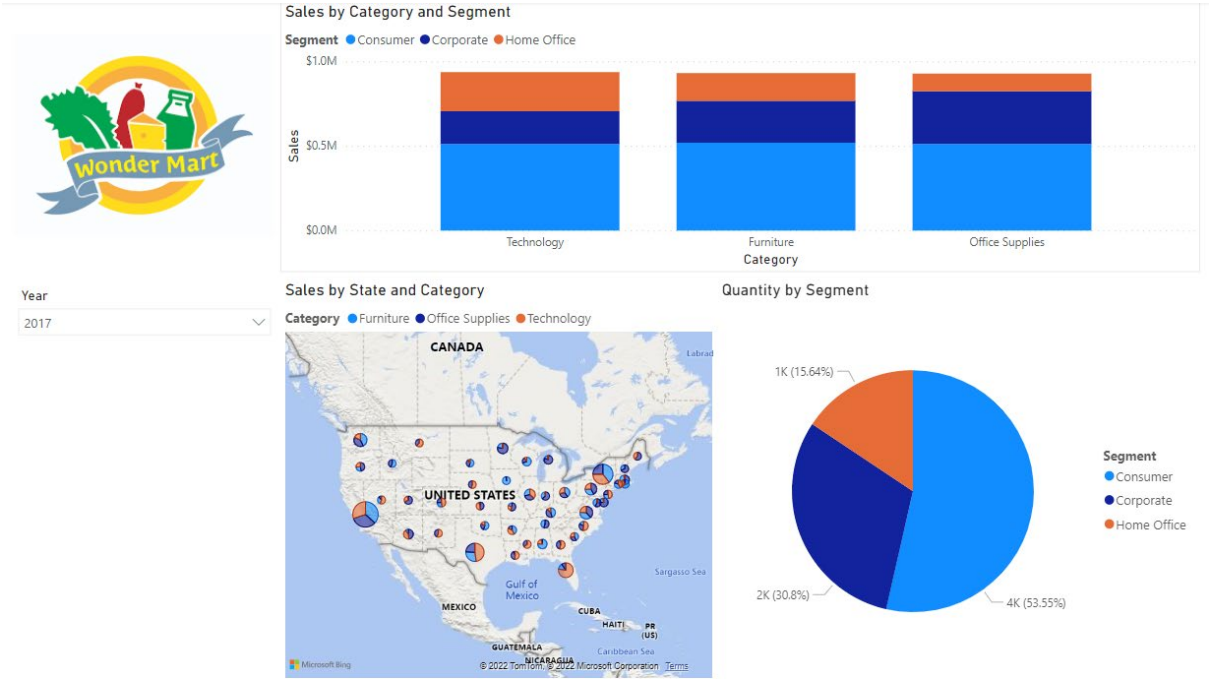
Part 3: Create Measures (2 marks)

S/N	Task	Mark(s)
i.	Under Report View, create a measure named Sales using the Data Analysis Expression (DAX). Sales can be calculated using Unit Price & Quantity Format the value to currency format with 2 decimal places.	2

Part 4: Visualise Data in Power BI (8 marks)

a. Create an Overview Page, refer to the screenshot below.

S/N	Task	Mark(s)
i.	Insert the WonderMart logo in the report.	1
ii.	Create a Year slicer to allow the user to filter the data by year. The list of years will be displayed in dropdown format and show the “Select all” option.	1
iii.	Create a visualisation to show the Sales by Category and Segment using a Stacked Column Chart.	2
iv.	Create a Map visualisation to show the Sales by State and Category.	2
v.	Create a Pie Chart to show the Quantity by Segment	2


Sales by Category and Segment
Segment Consumer Corporate Home Office
$1.0M
$0.5M
$0.0M
Sales
Technology
Furniture
Office Supplies
Category
Year
2017
Sales by State and Category
Category Furniture Office Supplies Technology
CANADA
UNITED STATES
Gulf of Mexico
MEXICO
CUBA
HAITI
PR (US)
GUATEMALA
NICARAGUA
Caribbean Sea
Sargasso Sea
Microsoft Bing
© 2022 TomTom, © 2022 Microsoft Corporation Terms
Quantity by Segment
1K (15.64%)
2K (30.8%)
4K (53.55%)
Segment
Consumer
Corporate
Home Office

END OF PAPER