Exercise 2

Zuhar Regal 4227160

Alyssa Keiller 4255739

Due date : 14 April 2024 - 20:00

Lecturer : Ruchen Wyngaard

Introduction

In response to the identified need for enhanced data visualisation capabilities within the company's information system, our software development team at OT has embarked on a project to develop a comprehensive enterprise information system. This system aims to empower the company with the ability to extract meaningful trends and insights from its existing data, thereby facilitating informed decision-making and strategic goal optimization.

Using Oracle APEX, we have created the OT System application that offers data visualisation. Our dashboard solution covers key areas such as product management, warehouse management, order management, customer management and employee management. Through visualisation and analytical tools, OT will be able to delve into their data, identifying trends, patterns and insights that can assist operational efficiency and strategic planning.

In the following sections, we will delve into the specifics of each dashboard component, outlining the functionalities and benefits they bring to the company's objectives of enhancing strategic planning and operational optimization.

Oracle Apex Credentials

WORSPACE : IFS_4255739

USERNAME : RWYNGAARD@UWC.AC.ZA

PASSWORD : rwyngaard@uwc.ac.za

OT System :

Warehouse Management

Warehouse quantity:

This query retrieves data about warehouses and their total quantities of products stored in each warehouse. It calculates the total quantity by summing up the quantities of products stored in each warehouse from the `inventories` table, grouping the results by warehouse, and then ordering the result set by the total quantity in descending order.This data is essential for inventory management processes.

Warehouse value:

This query calculates the total value of the products in the specified warehouse by multiplying each product's standard cost by its quantity and summing up the results. This provides information into the total worth of the inventory stored in the warehouse based on the standard cost of the products.By calculating the total value of products based on their standard cost, businesses can analyse their inventory costs accurately. This information helps in budgeting, pricing strategies, and assessing the profitability of different product lines.Furthermore, OT can identify high-performing warehouses and areas for improvement.

Warehouse location

The visual map displaying the locations of our warehouses not only provides valuable insights but also offers a clearer view of where the warehouses are placed . Compared to tabular formats, the visual representation simplifies complex information, making it easier for OT to view the warehouse locations.This clarity enhances decision-making processes across the business. For logistics planning, the visual map offers a straightforward view of warehouse distribution. It allows our team to quickly identify the most effective paths for product distribution, leading to cost savings and improved delivery times.

Order Management

Order Timeline:

In the first query, we calculate the total sales amount for each month and year by summing up the product of quantity and unit price for each order item and grouping the

results by the year extracted from the `order_date` column. This enables OT to analyse sales trends over time and identify any seasonal patterns in sales.

Order Sales & Top 5 Sales:

In the second query, we sum up the quantities of items sold for each product and calculate the total sales amount by multiplying the quantity sold by the unit price from the `order_items` table. This assists OT with identify high-performing products based on their sales performance.This information guides inventory management, pricing strategies and marketing efforts to focus resources on high-value products.

Top 5 Ordered Products:

In the third query, we calculate the total quantity of each product ordered by summing up the quantities from the `order_items` table. This assists OT to identify the most popular products among customers and use that to their advantage.

Customer Management

Customer Orders & Top 5 Customers :

This totals the number of orders for each customer using the `COUNT()` function and calculates the total quantity of items ordered and the total order value by summing up the respective values from the `order_items` table. This provides insights into customer purchasing behavior, allowing OT to identify their most active customers and understand their contribution to overall sales.

Average Spending per Order, and Credit Limit by Customer:

This provides a more detailed analysis of customer spending patterns, allowing OT to identify a customers average spending per order. This will assist OT to understand the typical transaction size for each customer, which can inform marketing strategies and personalised offers.

Products

This page provides users with more insight into individual products within each product category. The user will be able to see the current gross income from each product, as well as the predicted income of each product using the amount of inventory of the product in inventory. If there are any changes be it to the products table, inventory table

or orders table the data on the page will change accordingly. Included on this page is also an interactive report for each category that allows you to filter and download reports according to the end-user's liking.

Products Dashboard

This page contains a categories master for the end-user, that includes:

Category income:

This chart shows the end user the gross income of all the individual categories. It is ordered from lowest to highest in income.

Categories Products:

This includes the proportions of products that make up all the goods that OT sells.

Categories Inventory:

This donut shows the proportions of inventory by category. This allows the end-user to see what should be purchased more and what category should be purchased less.

Highest and lowest grossing products:

As the name of these reports suggest, it represents the highest and lowest grossing products per category as well as the income that the product brings to the company.

Employee Stats

This page provides information to all management on the performance of their sales employees. This page displays the number of sales by all employees, as well as a list of all employees under each manager, this list includes the employee's ID's. The final item on the page includes the sales made by employees under each manager, this allows the manager to see where improvements should be made and promotes friendly competition between managers and employees.

Conclusion

In conclusion, the software development team has implemented data visualisation functionalities into a comprehensive enterprise information system, OT System. Product management, warehouse management, order management, consumer management, and employee management are all critical components of the system. The system's

analytical tools and data visualisations empower users to derive significant patterns and revelations from their data, thereby promoting well-informed decision-making and the optimisation of strategic objectives. The input delineates the precise functionalities and advantages associated with each component of the interface.