**BAN 545 Term Project: Part-1**

Initial Dimensional Design

**TEAM MEMBERS:**

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**NAME OF THE DATASET** – Bike Sales Fall2024

The High-Level Design Process:

Below is a dimensional model diagram which is a high-level design, consisting of data derived from Bike Sales Fall2024 dataset represented in three-dimension tables and a fact table:

Date Dimension Table

Customer Dimension Table

Sales Fact Table

Product Dimension Table

Description of four tables:

The dataset contains sales data for a bike company. It includes customer details, product details, and order information.

**Fact Table: Sales Fact**

* **Measures**:
  + Order\_Quantity: Number of products sold.
  + Unit\_Price: Price per unit of the product.
  + Total\_Sales: Calculated as Order\_Quantity \* Unit\_Price.
* **Keys**:
  + DateKey: Links to the Date Dimension.
  + CustomerKey: Links to the Customer Dimension.
  + ProductKey: Links to the Product Dimension.

**Dimension Tables**

1. **Date Dimension**
   * Attributes:
     + DateKey: Unique identifier for each date.
     + Date: Full date.
     + Year, Month, Day, Weekday, Quarter
2. **Customer Dimension**
   * Attributes:
     + CustomerKey: Unique identifier for each customer.
     + Age
     + Gender
     + Country
     + State
3. **Product Dimension**
   * Attributes:
     + ProductKey: Unique identifier for each product.
     + Category
     + Sub-Category
     + Product Name

Technical Design Process:

While the high-level design process is little more than a very simple diagram of the overall dimensional model tables, the technical design diagrams the names of fields and sample data for the tables themselves. Below are the diagrams for each of the four tables in the high-level design (one fact table plus three-dimension tables).

Sales Fact Table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| DateKey | CustomerKey | ProductKey | Order\_Quantity | Unit\_Price | Total\_Sales |
| 01012011 | 1 | 1001 | 2 | 3578 | 7156 |

Date Dimension Table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| DateKey | Date | Year | Month | Day | Weekend | Quarter |
| 01012011 | 1/1/2011 | 2011 | January | 1 | Saturday | Q1 |

Customer Dimension Table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CustomerKey | Age | Gender | Country | State |
| 1 | 23 | M | Australia | Victoria |

Product Dimension Table:

|  |  |  |  |
| --- | --- | --- | --- |
| ProductKey | Category | Sub-Category | Product Name |
| 1001 | Bikes | Road Bikes | Road-150 Red, 48 |