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BI solution assignment

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# Part A (OLTP)

## Northwind Data Model



## Northwind Data Dictionary

|  |  |  |
| --- | --- | --- |
| Suppliers | | |
| <<PK>> | SupplierID | Number { SupplierID > 1 } |
|  | CompanyName | Character {size = 40} |
|  | ContactName | Character {size = 30} |
|  | ContactTitle | Character {size = 30} |
|  | Address | Character {size = 60} |
|  | City | Character {size = 15} |
|  | Region | Character {size = 15} |
|  | PostalCode | Character {size = 10} |
|  | Country | Character {size = 15} |
|  | Phone | Character {size = 24} |
|  | Fax | Character {size = 24} |
|  | HomePage | Character {size = 100} |

|  |  |  |
| --- | --- | --- |
| Products | | |
| <<PK>> | ProductID | Number { ProductID > 1 } |
|  | ProductName | Character {size = 40} |
| <<FK>> | SuppliedID | Numeric { References Suppliers.SupplierID } |
| <<FK>> | CategoryID | Numeric { References Categories.CategoryID } |
|  | QuantityPerUnit | Character {size = 20} |
|  | UnitPrice | Money |
|  | UnitsInStock | Numeric { UnitsInStock > 1 and UnitsInStock < 255 } |
|  | UnitsOnOrder | Numeric { UnitsOnOrder > 1 and UnitsOnOrder < 255 } |
|  | ReorderLevel | Numeric { ReorderLevel > 1 and ReorderLevel < 255 } |
|  | Discontinued | Boolean |

|  |  |  |
| --- | --- | --- |
| Categories | | |
| <<PK>> | CategoryID | Number { CategoryID > 1 } |
|  | CategoryName | Character {size = 15} |
|  | Description | Text |
|  | Picture | Image |

|  |  |  |
| --- | --- | --- |
| Order Details | | |
| <<PK, FK>> | OrderID | Number { OrderID > 1, References Orders.OrderID } |
| <<PK, FK>> | ProductID | Number { ProductID > 1, References Products.ProductID } |
|  | UnitPrice | Money |
|  | Quantity | Number { Quantity > 1 and Quantity < 255 } |
|  | Discount | Money |

|  |  |  |
| --- | --- | --- |
| Orders | | |
| <<PK>> | OrderID | Number { OrderID > 1 } |
| <<FK>> | CustomerID | Character { Size = 5, References Customers.CustomerID } |
| <<FK>> | EmployeeID | Number { EmployeeID > 1, References Employees.EmployeeID } |
|  | OrderDate | Date Time |
|  | RequiredDate | Date Time |
|  | ShippedDate | Date Time |
| <<FK>> | ShipVia | Number { ShipVia > 1, References Shippers.ShipperID } |
|  | Freight | Money |
|  | ShipName | Character { Size = 40 } |
|  | ShipAddress | Character { Size = 60 } |
|  | ShipCity | Character { Size = 15 } |
|  | ShipRegion | Character { Size = 15 } |
|  | ShipPostalCode | Character { Size = 10 } |
|  | ShipCountry | Character { Size = 15 } |

|  |  |  |
| --- | --- | --- |
| Shippers | | |
| <<PK>> | ShipperID | Number { ShipperID > 1 } |
|  | CompanyName | Character { Size = 40 } |
|  | Phone | Character { Size = 24 } |

|  |  |  |
| --- | --- | --- |
| Customers | | |
| <<PK>> | CustomerID | Number { CustomerID > 1 } |
|  | CompanyName | Character { Size = 40 } |
|  | ContactName | Character { Size = 30 } |
|  | ContactTitle | Character { Size = 30 } |
|  | Address | Character { Size = 60 } |
|  | City | Character { Size = 15 } |
|  | Region | Character { Size = 15 } |
|  | PostalCode | Character { Size = 10 } |
|  | Country | Character { Size = 15 } |
|  | Phone | Character { Size = 24 } |
|  | Fax | Character { Size = 24 } |

|  |  |  |
| --- | --- | --- |
| CustomerCustomerDemo | | |
| <<PK, FK>> | CustomerID | Number { CustomerID > 1, References Customers.CustomerID } |
| <<PK, FK>> | CustomerTypeID | Character { Size = 10, References CustomerDemographics.CustomerTypeID } |

|  |  |  |
| --- | --- | --- |
| CustomerDemographics | | |
| <<PK >> | CustomerTypeID | Character { Size = 10 } |
|  | CustomerDesc | Text |

|  |  |  |
| --- | --- | --- |
| Employees | | |
| <<PK >> | EmployeeID | Number { EmployeeID > 1 } |
|  | LastName | Character { Size = 20 } |
|  | FirstName | Character { Size = 10 } |
|  | Title | Character { Size = 30 } |
|  | TitleOfCourtesy | Character { Size = 25 } |
|  | BirthDate | Date Time |
|  | HireDate | Date Time |
|  | Address | Character { Size = 60 } |
|  | City | Character { Size = 15 } |
|  | Region | Character { Size = 15 } |
|  | PostalCode | Character { Size = 10 } |
|  | Country | Character { Size = 15 } |
|  | HomePhone | Character { Size = 24 } |
|  | Extension | Character { Size = 4 } |
|  | Photo | Image |
|  | Notes | Text |
| <<FK>> | ReportsTo | Number { ReportsTo > 1, References Employees.EmployeeID } |
|  | PhotoPath | Character { Size = 255 } |

|  |  |  |
| --- | --- | --- |
| EmployeeTerritories | | |
| <<PK, FK>> | EmployeeID | Number { EmployeeID > 1, References Employees.EmployeeID } |
| <<PK, FK>> | TerritoryID | Character { Size = 20, References Territories.TerritoryID } |

|  |  |  |
| --- | --- | --- |
| Territories | | |
| <<PK>> | TerritoryID | Character { Size = 20 } |
|  | TerritoryDescription | Character { Size = 50 } |
| <<FK>> | RegionID | Number { RegionID > 1, References Region.RegionID } |

|  |  |  |
| --- | --- | --- |
| Region | | |
| <<PK>> | RegionID | Number { RegionID > 1 } |
|  | RegionDescription | Character { Size = 50 } |

# Part B (Data Mart)

## Northwind Data Model



## Data Dictionary

|  |  |  |
| --- | --- | --- |
| SaleFact | | |
| <<PK, FK>> | CustomerKey | Number { CustomerKey > 1, References CustomerDimension.CustomerKey } |
| <<PK, FK>> | EmployeeKey | Number { EmployeeKey > 1, References EmployeeDimension.EmployeeKey } |
| <<PK, FK>> | ProductKey | Number { ProductKey > 1, References ProductDimension.ProductKey } |
| <<PK, FK>> | ShipperKey | Number { ShipperKey > 1, References ShipperDimension.ShipperKey } |
| <<PK, FK>> | TimeKey | Number { TimeKey > 1, References TimeDimension.TimeKey } |
|  | LineItemQuantity | Number { LineItemQuantity > 1 } |
|  | LineItemDiscount | Money |
|  | LineItemFreight | Money |
|  | LineItemTotal | Money |

|  |  |  |
| --- | --- | --- |
| CustomerDimension | | |
| <<PK>> | CustomerKey | Number { CustomerKey > 1 } |
|  | CompanyName | Character { Size = 30 } |
|  | CustomerID | Character { Size = 5 } |
|  | ContactName | Character { Size = 30 } |
|  | ContactTitle | Character { Size = 30 } |
|  | Address | Character { Size = 60 } |
|  | City | Character { Size = 15 } |
|  | Region | Character { Size = 15 } |
|  | PostalCode | Character { Size = 10 } |
|  | Country | Character { Size = 15 } |
|  | Phone | Character { Size = 24 } |
|  | Fax | Character { Size = 24 } |

|  |  |  |
| --- | --- | --- |
| EmployeeDimension | | |
| <<PK>> | EmployeeKey | Number { EmployeeKey > 1 } |
|  | EmployeeName | Character { Size = 30 } |
|  | EmployeeID | Number { EmployeeID > 1 } |
|  | HireDate | Date Time |

|  |  |  |
| --- | --- | --- |
| ShipperDimension | | |
| <<PK>> | ShipperKey | Number { ShipperKey > 1 } |
|  | ShipperName | Character { Size = 40 } |
|  | ShipperID | Number { ShipperID > 1 } |

|  |  |  |
| --- | --- | --- |
| ProductDimension | | |
| <<PK>> | ProductKey | Number { ProductKey > 1 } |
|  | ProductName | Character { Size = 40 } |
|  | ProductID | Number { ProductID > 1 } |
|  | SupplierName | Character { Size = 40 } |
|  | CategoryName | Character { Size = 15 } |
|  | ListUnitPrice | Money |

|  |  |  |
| --- | --- | --- |
| TimeDimension | | |
| <<PK>> | TimeKey | Number { TimeKey > 1 } |
|  | TheDate | Date Time |
|  | DayOfWeek | Number { DayOfWeek >= 1 and DayOfWeek <= 7 } |
|  | DayOfWeekName | Enum { Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday } |
|  | Month | Number { Month >= 1 and Month <= 12 } |
|  | MonthName | Enum { January, February, March, April, May, June, July, August, September, October, November, December } |
|  | Year | Number |
|  | Quarter | Number { Quarter >= 1 and Quarter <= 4 } |
|  | DayOfYear | Number { DayOfYear >= 1 and DayOfYear <= 366 } |
|  | Weekday | Enum { Y, N } |
|  | WeekOfYear | Number { WeekOfYear >= 1 } |

## Database Creation Script

