**SQL Queries**

The SQL command creates an empty database named ‘MainDWDatabase’And allocates two files: one for storing data and another for storing transactional logs.

CREATE DATABASE MainDWDatabaseON (NAME = 'MainDWDatabase\_Data', FILENAME = ‘Path\MainDWDatabase2016\_Data.mdf', SIZE = 1000, FILEGROWTH = 50) LOG ON (NAME = 'MainDWDatabase\_Log', FILENAME = ‘Path\MainDWDatabase\_Log.ldf’, SIZE = 20, FILEGROWTH = 96); GO

CREATE DATABASE BlueSkyOnlineDB

CREATE DATABASE BS\_Stagging

A screenshot of a computer screen

Description automatically generated

To Create dimension tables:

CREATE TABLE [dbo].[CustomerDimension](

[CustomerKey] [int] IDENTITY(1,1) NOT NULL,

[CustomerCode] [nvarchar](25) NOT NULL,

[FirstName] [varchar](50) NOT NULL,

[LastName] [varchar](50) NOT NULL,

[BirthDate] [date] NOT NULL,

[MaritalStatus] [varchar](20) NOT NULL,

[Gender] [varchar](10) NOT NULL,

[PostCode] [varchar](20) NULL,

[City] [varchar](50) NULL,

[Income] [int] NULL,

CREATE TABLE [dbo].[DatesDimension](

[FullDate] [date] NOT NULL,

[MonthOfYear] [int] NULL,

[CalendarQuarter] [int] NULL,

[CalendarYear] [int] NULL,

CREATE TABLE [dbo].[PaymentTypeDimension](

[PaymentTypeKey] [int] IDENTITY(1,1) NOT NULL,

[PaymentTypeName] [varchar](30) NOT NULL,

[PaymentTypeID] [int] NOT NULL,

CREATE TABLE [dbo].[SellingChannelDimension](

[SellingChannelKey] [int] IDENTITY(1,1) NOT NULL,

[SellingChannelCode] [varchar](10) NULL,

[SellingChannelName] [varchar](30) NOT NULL,

[CommissionRate] [int] NOT NULL,

**2.3 Create fact tables**.

CREATE TABLE [dbo].[CustomerSalesTransactionFactTable](

[FullDateKey] [date] NOT NULL,

[InvoiceNumber] [varchar](20) NULL,

[TotalRetailPrice] [decimal](15, 2) NULL,

[TotalCost] [decimal](15, 2) NULL,

[Commission] [int] NULL,

[Profit] [decimal](15, 2) NULL,

[CustomerKey] [int] NOT NULL,

[SellingChannelKey] [int] NOT NULL,

[PaymentTypeKey] [int] NOT NULL,

[TransactionKey] [int] IDENTITY(1,1) NOT NULL,

**To Build Primary Keys**

ALTER TABLE [dbo].[DatesDimension]

ADD CONSTRAINT PK\_DatesDimension PRIMARY KEY (FullDate) ON [PRIMARY];

ALTER TABLE [dbo].[CustomerDimension]

ADD CONSTRAINT PK\_CustomerDimension PRIMARY KEY (CustomerKey) ON [PRIMARY];

ALTER TABLE [dbo].[PaymentTypeDimension]

ADD CONSTRAINT PK\_PaymentTypeDimension PRIMARY KEY (PaymentTypeKey) ON [PRIMARY];

ALTER TABLE [dbo].[SellingChannelDimension]

ADD CONSTRAINT PK\_SellingChannelDimension PRIMARY KEY (SellingChannelKey) ON [PRIMARY];

ALTER TABLE [dbo].[CustomerSalesTransactionFactTable]

ADD CONSTRAINT PK\_CustomerSalesTransactionFactTable PRIMARY KEY (TransactionKey) ON [PRIMARY];

ALTER TABLE [dbo].[CustomerSalesTransactionFactTable]

ADD CONSTRAINT PK\_CustomerSalesTransactionFactTable PRIMARY KEY (TransactionKey) ON [PRIMARY];

**To Build Foreign Keys:**

Alter Table [dbo].[CustomerSalesTransactionFactTable]

ADD CONSTRAINT FK\_FullDate FOREIGN KEY (FullDate) REFERENCES [dbo].[DatesDimension] (FullDate),

CONSTRAINT Fk\_CustomerKey FOREIGN KEY (CustomerKey) REFERENCES [dbo].[CustomerDimension](CustomerKey),

CONSTRAINT Fk\_SellingChannelKey FOREIGN KEY (SellingChannelKey) REFERENCES [dbo].[SellingChannelDimension](SellingChannelKey),

CONSTRAINT Fk\_PaymentTypeKey FOREIGN KEY (PaymentTypeKey) REFERENCES [dbo].[PaymentTypeDimension](PaymentTypeKey)

CREATE TABLE dbo.DateDim(DateKey int IDENTITY(1,1) NOT NULL,

Date date NOT NULL,

Name varchar (30) NOT NULL,

WeekNumber int NOT NULL,

MonthName nvarchar(30) NOT NULL,

MonthNumber int Not NULL,

Quarter int NOT NULL,

Year int NOT NULL) ON [PRIMARY];

GO

These SQL commands create a date dimension table.

To create a customer dimension table.

CREATE TABLE dbo.CustomerDim(

CustomerKey int IDENTITY(1,1) NOT NULL,

Name varchar(50) NOT NULL,

Gender char(1) NOT NULL,

BirthDate date NOT NULL,

City varchar(50) Not NULL,

Regional varchar(50) NOT NULL,

State varchar(50) NOT NULL) ON [PRIMARY];

GO

SQL command to create a customer dimension table.

CREATE TABLE dbo.FurnitureDim(

FurnitureKey int IDENTITY(1,1) NOT NULL,

Type varchar(25) NOT NULL,

Category varchar(25) NOT NULL,

Material varchar(25) NOT NULL) ON [PRIMARY];

GO These SQL commands to create a furniture dimension table.

SQL command to create a sale fact table.

CREATE TABLE dbo.SaleFact(

DateKey int Not NULL,

CustomerKey int NOT NULL,

FurnitureKey int NOT NULL,

Quantity int NOT NULL,

Income float NOT NULL,

Discount float NOT NULL) ON [PRIMARY];

GO

SQL command to create a sale fact table.

**To Build Primary Keys:**

ALTER TABLE dbo.DateDim ADD CONSTRAINT PK\_DateDim PRIMARY KEY (DateKey) ON [PRIMARY];

ALTER TABLE dbo.CustomerDim ADDCONSTRAINT PK\_CustomerDim PRIMARY KEY (CustomerKey) ON [PRIMARY];

ALTER TABLE dbo.FurnitureDim ADD CONSTRAINT PK\_FurnitureDim PRIMARY KEY (FurnitureKey) ON [PRIMARY];

ALTER TABLE dbo.SaleFact ADD CONSTRAINT PK\_SaleFact PRIMARY KEY (DateKey, FurnitureKey, CustomerKey) ON [PRIMARY];

ALTER TABLE [dbo].[DatesDimension]

ADD CONSTRAINT PK\_DatesDimension PRIMARY KEY (FullDate) ON [PRIMARY];

ALTER TABLE [dbo].[CustomerDimension]

ADD CONSTRAINT PK\_CustomerDimension PRIMARY KEY (CustomerKey) ON [PRIMARY];

ALTER TABLE [dbo].[PaymentTypeDimension]

ADD CONSTRAINT PK\_PaymentTypeDimension PRIMARY KEY (PaymentTypeKey) ON [PRIMARY];

ALTER TABLE [dbo].[SellingChannelDimension]

ADD CONSTRAINT PK\_SellingChannelDimension PRIMARY KEY (SellingChannelKey) ON [PRIMARY];

ALTER TABLE [dbo].[CustomerSalesTransactionFactTable]

ADD CONSTRAINT PK\_CustomerSalesTransactionFactTable PRIMARY KEY (TransactionKey) ON [PRIMARY];

ALTER TABLE [dbo].[CustomerSalesTransactionFactTable]

ADD CONSTRAINT PK\_CustomerSalesTransactionFactTable PRIMARY KEY (TransactionKey) ON [PRIMARY];

**To Build Foreign Keys:**

Alter Table [dbo].[CustomerSalesTransactionFactTable]

ADD CONSTRAINT FK\_FullDate FOREIGN KEY (FullDate) REFERENCES [dbo].[DatesDimension] (FullDate),

CONSTRAINT Fk\_CustomerKey FOREIGN KEY (CustomerKey) REFERENCES [dbo].[CustomerDimension](CustomerKey),

CONSTRAINT Fk\_SellingChannelKey FOREIGN KEY (SellingChannelKey) REFERENCES [dbo].[SellingChannelDimension](SellingChannelKey),

CONSTRAINT Fk\_PaymentTypeKey FOREIGN KEY (PaymentTypeKey) REFERENCES [dbo].[PaymentTypeDimension](PaymentTypeKey

Alter Table dbo.SaleFact ADD CONSTRAINT FK\_DateDim FOREIGN KEY (DateKey) REFERENCES dbo.DateDim (DateKey),

CONSTRAINT Fk\_CustomerKey FOREIGN KEY (CustomerKey) REFERENCES dbo.CustomerDim(CustomerKey),

CONSTRAINT Fk\_FurnitureKey FOREIGN KEY (FurnitureKey) REFERENCES dbo.FurnitureDim(FurnitureKey),

**Importing data from stagging to dimensional tables:**

Insert into [dbo].[PaymentTypeDimension] select Name, RetailerPaymentTypeID

From [BS\_Stagging].[dbo].[PaymentsData]

Insert into SellingChannelDimension select [Name],[Code],[CommissionRate]

From [BS\_Stagging].[dbo].[Selling Channels]

Insert into [dbo].[DatesDimension] select FullDate,MonthOFYear,CalendarQuarter,CalendarYear

From [BS\_Stagging].[dbo].[Generated DateTime]

Insert into dbo.CustomerDimension select CustomerCode, cust1.FirstName, cust2.LastName,BirthDate,

MaritalStatus,Gender,PostCode,City,Income

From BS\_Stagging.[dbo].[CustomerDetails1] cust1

, BS\_Stagging.[dbo].[CustomerDetails2] cust2

where cust1.firstName= cust2.FirstName and cust1.lastName = cust2.LastName

Insert into [dbo].[CustomerSalesTransactionFactTable] select cd.CustomerKey,

scd.sellingChannelkey,ptd.PaymentTypeKey,dd.fullDate,InvoiceNumber,TotalRetaiLPrice,TotalCost,

scd.commission,null

from BS\_Stagging.[dbo].[CustomerSaleTransactions] cst, [dbo].[CustomerDimension] cd,[dbo].[DatesDimension] dd,

[dbo].[PaymentTypeDimension] ptd,[dbo].[SellingChannelDimension] scd

where cst.PaymentTypeID=ptd.PaymentTypeID and cst.SellingChannel=scd.SellingChannelCode and

cst.date=dd.FullDate and cst.customerCode= cd.customerCode

// Written SQL commands in ssms

CREATE TABLE CustomerDimension (

CustomerKey INT PRIMARY Key ,

CustomerCode INT,

FirstName VARCHAR(50),

LastName VARCHAR(50),

BirthDate DATE,

MaritalStatus VARCHAR(20),

Gender VARCHAR(10),

PostCode VARCHAR(20),

City VARCHAR(50),

Income INT,

);

CREATE TABLE SellingChannelDimension (

SellingChannelKey INT PRIMARY KEY,

SellingChannelCode INT,

SellingChannelName VARCHAR(50) NOT NULL,

CommissionRate int,

);

CREATE TABLE DateDimension (

FullDate DATE PRIMARY KEY,

MonthOfYear INT,

CalendarQuarter INT,

CalendarYear INT,

);

CREATE TABLE [dbo].[CustomerDimension](

[CustomerKey] [int] NOT NULL,

[CustomerCode] [varchar](25) NULL,

[FirstName] [varchar](50) NULL,

[LastName] [varchar](50) NULL,

[BirthDate] [date] NULL,

[MaritalStatus] [varchar](20) NULL,

[Gender] [varchar](10) NULL,

[PostCode] [varchar](20) NULL,

[City] [varchar](50) NULL,

[Income] [int] NULL,

PRIMARY KEY CLUSTERED

CREATE TABLE [dbo].[PaymentTypeDimension](

[PaymentTypeKey] [int] NOT NULL,

[PaymentTypeName] [varchar](50) NOT NULL,

[PaymentTypeID] [int] NULL,

PRIMARY KEY CLUSTERED

(

[PaymentTypeKey] ASC

)WITH (PAD\_INDEX = OFF, STATISTICS\_NORECOMPUTE = OFF, IGNORE\_DUP\_KEY = OFF, ALLOW\_ROW\_LOCKS = ON, ALLOW\_PAGE\_LOCKS = ON, OPTIMIZE\_FOR\_SEQUENTIAL\_KEY = OFF) ON [PRIMARY]

) ON [PRIMARY]

GO

CREATE TABLE [dbo].[SellingChannelDimension](

[SellingChannelKey] [int] NOT NULL,

[SellingChannelCode] [int] NULL,

[SellingChannelName] [varchar](50) NOT NULL,

[CommissionRate] [int] NULL,

PRIMARY KEY CLUSTERED

Alter Table CustomerSalesTransactionFactTable

ADD CONSTRAINT SellingChannelDimension FOREIGN KEY (SellingChannelKey)

REFERENCES SellingChannelDimension (SellingChannelKey

CREATE TABLE CustomerDimension (

CustomerKey INT PRIMARY Key,

CustomerCode INT,

FirstName VARCHAR(50),

LastName VARCHAR(50),

BirthDate DATE,

MaritalStatus VARCHAR(20),

Gender VARCHAR(10),

PostCode VARCHAR(20),

City VARCHAR(50),

Income INT,

);

CREATE TABLE SellingChannelDimension (

SellingChannelKey INT PRIMARY KEY,

SellingChannelCode INT,

SellingChannelName VARCHAR(50) NOT NULL,

CommissionRate int,

);

CREATE TABLE DateDimension (

FullDate DATE PRIMARY KEY,

MonthOfYear INT,

CalendarQuarter INT,

CalendarYear INT,

);

***SQL Script***

CREATE TABLE [dbo].[CustomerDimension](

[CustomerKey] [int] NOT NULL,

[CustomerCode] [varchar](25) NULL,

[FirstName] [varchar](50) NULL,

[LastName] [varchar](50) NULL,

[BirthDate] [date] NULL,

[MaritalStatus] [varchar](20) NULL,

[Gender] [varchar](10) NULL,

[PostCode] [varchar](20) NULL,

[City] [varchar](50) NULL,

[Income] [int] NULL,

PRIMARY KEY CLUSTERED

CREATE TABLE [dbo].[PaymentTypeDimension](

[PaymentTypeKey] [int] NOT NULL,

[PaymentTypeName] [varchar](50) NOT NULL,

[PaymentTypeID] [int] NULL,

PRIMARY KEY CLUSTERED

CREATE TABLE [dbo].[SellingChannelDimension](

[SellingChannelKey] [int] NOT NULL,

[SellingChannelCode] [int] NULL,

[SellingChannelName] [varchar](50) NOT NULL,

[CommissionRate] [int] NULL,

PRIMARY KEY CLUSTERED

Alter Table CustomerSalesTransactionFactTable

ADD CONSTRAINT SellingChannelDimension FOREIGN KEY (SellingChannelKey)

REFERENCES SellingChannelDimension (SellingChannelKey)