**PROCUREMENT INVENTORY SYSTEM**

A picture containing text

Description automatically generated

Conceptual Diagram:

Diagram

Description automatically generated

Logical Diagram:

**Data Dictionary:**

1. Address:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Address\_ID | int | Not Null |  |  |
|  | Street\_Address\_1 | varchar(50) | Not Null |  |  |
|  | Street\_Address\_2 | varchar(50) | Not Null |  |  |
|  | City | varchar(20) | Not Null |  |  |
|  | States | varchar(20) | Not Null |  |  |
|  | Zip | int | Not Null |  |  |

1. CreditCards:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Credit\_card\_id | int | Not Null |  |  |
| Unique | Credit\_card\_no | int | Not Null |  |  |
|  | Expiration\_Month | int | Not Null |  |  |
|  | Expiration\_Year | int | Not Null |  |  |
|  | Cardholder\_Name | varchar(30) | Not Null |  |  |

1. EmployeeTeams:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Employee\_Team\_id | int | Not Null |  |  |
|  | Employee\_Team\_name | varchar(20) | Not Null |  |  |

1. Shippers:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Shipper\_ID | int | Not Null |  |  |
|  | Shipper\_Name | varchar(20) | Not Null |  |  |

1. BankAccounts:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Bank\_id | int | Not Null |  |  |
| Unique | BankAccount\_No | int | Not Null |  |  |
|  | Routing\_No | varchar(10) | Not Null |  |  |
|  | Accountholder\_Name | varchar(30) | Not Null |  |  |

1. Projects:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Project\_ID | int | Not Null |  |  |
|  | Project\_Name | varchar(20) | Not Null |  |  |
|  | Project\_Address\_ID | int | Not Null |  |  |

1. Teams:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Teams\_ID | int | Not Null |  |  |
|  | Team\_Name | varchar(20) | Not Null |  |  |
|  | Project\_ID | int | Not Null | Projects:  Project ID |  |
|  | Team\_Lead\_ID | int | Not Null | Stakeholders:  Stakeholder\_Team\_ID |  |

1. Stakeholders:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Stakeholder\_ID | int | Not Null |  |  |
|  | Stakeholder\_Firstname | varchar(20) | Not Null |  |  |
|  | Stakeholder\_Lastname | varchar(20) | Not Null |  |  |
| Unique | Stakeholder\_Email\_ID | varchar(30) | Not Null |  |  |
|  | Stakeholder\_Contact | varchar(15) | Not Null |  |  |
|  | Stakeholder\_Title | varchar(30) | Not Null |  |  |
|  | Stakeholder\_Team\_ID | int | Not Null | Teams:  Team\_Lead\_ID |  |

1. Employees:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Employee\_ID | int | Not Null |  |  |
|  | Employee\_Title | varchar(30) | Not Null |  |  |
|  | Employee\_Firstname | varchar(20) | Not Null |  |  |
|  | Employee\_Lastname | varchar(20) | Not Null |  |  |
| Unique | Employee\_Email | varchar(30) | Not Null |  |  |
|  | Employee\_Contact | varchar(15) | Not Null |  |  |
|  | Employee\_Team\_ID | int | Not Null | EmployeeTeams:  Employee\_Team\_ID |  |

1. Orders:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Order\_ID | int | Not Null |  |  |
|  | PO\_Number | varchar(5) | Not Null |  |  |
|  | Total\_Price | int | Not Null |  |  |
|  | Order\_Date | date | Not Null |  |  |
|  | Stakeholder\_ID | int | Not Null | Stakeholders:  Stakeholder\_ID |  |
|  | Employee\_ID | int | Not Null | Employees:  Employee\_ID |  |
|  | Shipper | int | Not Null | Shippers:  Shipper\_ID |  |
|  | Payment\_ID | int | Not  Null | Payments:  Payment\_ID |  |

1. Payments:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Payment\_ID | int | Not Null |  |  |
|  | Payment\_Type | varchar(5) | Not Null |  |  |
|  | Payment\_Date | datetime | Not Null |  |  |
|  | Supplier\_ID | int | Not Null | Suppliers:  Supplier\_ID |  |

1. Suppliers:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Supplier\_ID | int | Not Null |  |  |
|  | Supplier\_Name | varchar(20) | Not Null |  |  |
|  | Supplier\_Contact\_FName | varchar(20) | Not Null |  |  |
|  | Supplier\_Contact\_LName | varchar(30) | Not Null |  |  |
|  | Supplier\_Contact\_Email | varchar(30) | Not Null |  |  |
|  | Supplier\_Contact | varchar(15) | Not Null |  |  |
|  | Supplier\_Address\_ID | int | Not Null | SupplierAddress:  Supplier\_Address\_ID |  |

1. SupplierAddress:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Supplier\_Address\_ID | int | Not Null |  |  |
|  | Supplier\_Address\_1 | varchar(50) | Not Null |  |  |
|  | Supplier\_Address\_2 | varchar(50) | Not Null |  |  |
|  | Supplier\_City | varchar(20) | Not Null |  |  |
|  | Supplier\_State | varchar(20) | Not Null |  |  |
|  | Supplier\_Zip | int | Not Null |  |  |

1. CreditCardPayment:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Payment\_ID | int | Not Null | Payments:  Payment\_ID |  |
|  | Credit\_Card\_ID | int | Not Null | CreditCards:  Credit\_Card\_ID |  |

1. BankTransferPayment:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Payment\_ID | int | Not Null | Payments:  Payment\_ID |  |
| Unique | Bank\_ID | int | Not Null | BankAccounts:  Bank\_ID |  |

1. Products:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Product\_ID | int | Not Null |  |  |
|  | Product\_Name | varchar(50) | Not Null |  |  |
|  | Product\_Price | int | Not Null |  |  |
|  | Product\_Reserve | int | Not Null |  |  |
|  | Product\_Discount | int | Not Null |  |  |
|  | Lead\_Time | int | Not Null |  |  |
|  | Supplier\_ID | int | Not Null | Suppliers:  Supplier\_ID |  |

1. OrderLines

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Attributes | Data Type | Nullable | Foreign key constraints | Description |
| Primary Key | Order\_ID | int | Not Null | Orders:  Order\_ID |  |
| Unique | Product\_ID | int | Not Null | Products:  Product\_ID |  |
|  | Product\_Name | varchar(50) | Not Null |  |  |
|  | Product\_Price | int | Not Null |  |  |
|  | Product\_Quantity | int | Not Null |  |  |

**Business Rules:**

**Database System Infrastructure:**

**Table Creation:**

create DATABASE project

GO

use project

GO

----------------DOWN-------------------

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_OrderLines\_Bank\_ID')

alter table OrderLines drop constraint fk\_OrderLines\_Bank\_ID

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_OrderLines\_Payment\_ID')

alter table OrderLines drop constraint fk\_OrderLines\_Payment\_ID

GO

drop table if exists OrderLines

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_BankTransferPayment\_Bank\_ID')

alter table BankTransferPayment drop constraint fk\_BankTransferPayment\_Bank\_ID

GO

drop table if exists BankTransferPayment

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_BankTransferPayment\_Payment\_ID')

alter table BankTransferPayment drop constraint fk\_BankTransferPayment\_Payment\_ID

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_CreditCardPayment\_Credit\_Card\_ID')

alter table CreditCardPayment drop constraint fk\_CreditCardPayment\_Credit\_Card\_ID

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_CreditCardPayment\_Payment\_ID')

alter table CreditCardPayment drop constraint fk\_CreditCardPayment\_Payment\_ID

GO

drop table if exists CreditCardPayment

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Suppliers\_Supplier\_Address\_ID')

alter table Suppliers drop constraint fk\_Suppliers\_Supplier\_Address\_ID

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Payments\_Supplier\_ID')

alter table Payments drop constraint fk\_Payments\_Supplier\_ID

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Payments\_Order\_ID')

alter table Payments drop constraint fk\_Payments\_Order\_ID

GO

drop table if exists Payments

GO

drop table if exists Products

Go

drop table if exists Suppliers

GO

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Orders\_Shipper')

alter table Orders drop constraint fk\_Orders\_Shipper

GO

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Orders\_Employee\_ID')

alter table Orders drop constraint fk\_Orders\_Employee\_ID

GO

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Orders\_Stakeholder\_ID')

alter table Orders drop constraint fk\_Orders\_Stakeholder\_ID

GO

drop table if exists Orders

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Employees\_Employee\_Team\_ID')

alter table Employees drop constraint fk\_Employees\_Employee\_Team\_ID

GO

drop table if exists Employees

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Stakeholders\_Stakeholder\_Team\_ID')

alter table Stakeholders drop constraint fk\_Stakeholders\_Stakeholder\_Team\_ID

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Stakeholder\_Team\_Lead\_ID')

alter table Stakeholders drop constraint fk\_Stakeholder\_Team\_Lead\_ID

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Teams\_Project\_Team\_Lead\_ID')

alter table Teams drop constraint fk\_Teams\_Project\_Team\_Lead\_ID

GO

drop table if exists Stakeholders

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Teams\_Project\_Project\_ID')

alter table Teams drop constraint fk\_Teams\_Project\_Project\_ID

GO

drop table if exists Teams

GO

if exists(select \* from INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS

where CONSTRAINT\_NAME='fk\_Projects\_Project\_Address\_ID')

alter table Projects drop constraint fk\_Projects\_Project\_Address\_ID

GO

drop table if exists Projects

GO

drop table if exists BankAccounts

Go

drop table if exists SupplierAddresses

GO

drop table if exists Shippers

GO

drop table if exists EmployeeTeams

GO

drop table if exists CreditCards

GO

drop table if exists Addresses

GO

------------------UP-------------------

------create table Addresses-----------

--done

create table Addresses(

Address\_id int IDENTITY not null,

Street\_Address\_1 VARCHAR(50) not NULL,

Street\_Address\_2 VARCHAR(50) not NULL,

City VARCHAR(20) not NULL,

States VARCHAR(20) not NULL,

Zip int not NULL

constraint pk\_Addresses\_Address\_id PRIMARY key (Address\_id)

)

GO

------create table CreditCards-----------

create table CreditCards(

Credit\_card\_id int IDENTITY not null,

Credit\_card\_No int not NULL,

Expiration\_Month int not NULL,

Expiration\_Year int not NULL,

Cardholder\_Name VARCHAR(30) not NULL

constraint pk\_CreditCards\_Credit\_card\_id PRIMARY key (Credit\_card\_id),

constraint u\_CreditCards\_Credit\_card\_No UNIQUE(Credit\_card\_No)

)

GO

------create table EmployeeTeams-----------

--done

create table EmployeeTeams(

Employee\_Team\_id int IDENTITY not null,

Employee\_Team\_name VARCHAR(20) not NULL

constraint pk\_EmployeeTeams\_Employee\_Team\_id PRIMARY key (Employee\_Team\_id)

)

GO

------create table Shippers-----------

--done

create table Shippers(

Shipper\_ID int IDENTITY not null,

Shipper\_Name VARCHAR(20) not NULL

constraint pk\_Shippers\_Shipper\_id PRIMARY key (Shipper\_id)

)

GO

------create table BankAccounts-----------

--done

create table BankAccounts(

Bank\_id int IDENTITY not null,

BankAccount\_No int not NULL,

Routing\_No varchar(10) not NULL,

Accountholder\_Name VARCHAR(30) not NULL

constraint pk\_BankAccounts\_Bank\_id PRIMARY key (Bank\_id),

constraint u\_BankAccounts\_BankAccount\_No UNIQUE(BankAccount\_No)

)

GO

------create table Projects-----------

--done

create table Projects(

Project\_ID int IDENTITY not null,

Project\_Name VARCHAR(20) not NULL,

Project\_Address\_ID int not null

constraint pk\_Projects\_Project\_id PRIMARY key (Project\_id)

)

GO

alter table Projects

add constraint fk\_Projects\_Project\_Address\_ID foreign key(Project\_Address\_ID)

REFERENCES Addresses(Address\_id)

GO

------create table Teams-----------

create table Teams(

Team\_ID int IDENTITY not null,

Team\_Name VARCHAR(20) not NULL,

Project\_ID int not null,

constraint pk\_Teams\_Team\_ID PRIMARY key (Team\_ID)

)

GO

alter table Teams

add constraint fk\_Teams\_Project\_Project\_ID foreign key(Project\_ID)

REFERENCES Projects(Project\_ID)

GO

------create table Stakeholders-----------

create table Stakeholders(

Stakeholder\_ID int IDENTITY not null,

Stakeholder\_Firstname VARCHAR(20) not NULL,

Stakeholder\_Lastname VARCHAR(20) not NULL,

Stakeholder\_Team\_ID int not null,

Stakeholder\_Email\_ID VARCHAR(30) not NULL,

Stakeholder\_Contact VARCHAR(15) not NULL,

Stakeholder\_Title VARCHAR(30) not NULL,

Stakeholder\_Team\_Lead int not null

constraint pk\_Stakeholders\_Stakeholder\_ID PRIMARY key (Stakeholder\_ID),

constraint u\_Stakeholders\_Stakeholder\_Email\_ID UNIQUE(Stakeholder\_Email\_ID)

)

GO

alter table Stakeholders

add constraint fk\_Stakeholders\_Stakeholder\_Team\_ID foreign key(Stakeholder\_Team\_ID)

REFERENCES Teams(Team\_ID)

GO

alter table Stakeholders

add constraint fk\_Stakeholder\_Team\_Lead\_ID foreign key(Stakeholder\_Team\_Lead)

REFERENCES Stakeholders(Stakeholder\_ID)

GO

------create table Employees-----------

--done

create table Employees(

Employee\_ID int IDENTITY not null,

Employee\_Title VARCHAR(30) not null,

Employee\_Firstname VARCHAR(20) not NULL,

Employee\_Lastname VARCHAR(20) not NULL,

Employee\_Email VARCHAR(30) not NULL,

Employee\_Contact VARCHAR(15) not NULL,

Employee\_Team\_ID int not null

constraint pk\_Employees\_Employee\_ID PRIMARY key (Employee\_ID),

constraint u\_Employees\_Employee\_Email UNIQUE(Employee\_Email)

)

GO

alter table Employees

add constraint fk\_Employees\_Employee\_Team\_ID foreign key(Employee\_Team\_ID)

REFERENCES EmployeeTeams(Employee\_Team\_ID)

GO

------create table Orders-----------

create table Orders(

Order\_ID int IDENTITY not null,

PO\_Nmber VARCHAR(5) not null,

Order\_Date DATE ,

Stakeholder\_ID int not null,

Employee\_ID int not null,

Shipper int not null,

constraint pk\_Orders\_Order\_ID PRIMARY key (Order\_ID)

)

GO

alter table Orders

add constraint fk\_Orders\_Stakeholder\_ID foreign key(Stakeholder\_ID)

REFERENCES Stakeholders(Stakeholder\_ID)

GO

alter table Orders

add constraint fk\_Orders\_Employee\_ID foreign key(Employee\_ID)

REFERENCES Employees(Employee\_ID)

GO

alter table Orders

add constraint fk\_Orders\_Shipper foreign key(Shipper)

REFERENCES Shippers(Shipper\_ID)

GO

------create table Payments-----------

--done

create table Payments(

Payment\_ID int IDENTITY not null,

Payment\_Type VARCHAR(5) not NULL,

Payment\_Date date not NULL,

Supplier\_ID int not null,

Order\_ID int not null

constraint pk\_Payments\_Payment\_ID PRIMARY key (Payment\_ID)

)

GO

alter table Payments

add constraint fk\_Payments\_Order\_ID foreign key(Order\_ID)

REFERENCES Orders(Order\_ID)

GO

------create table Suppliers-----------

--done

create table Suppliers(

Supplier\_ID int IDENTITY not null,

Supplier\_Name VARCHAR(20) not NULL,

Supplier\_Contact\_FName VARCHAR(20) not NULL,

Supplier\_Contact\_LName VARCHAR(30) not NULL,

Supplier\_Contact\_Email VARCHAR(30) not NULL,

Supplier\_Contact VARCHAR(15) not NULL,

Supplier\_Address\_ID int not null

constraint pk\_Suppliers\_Supplier\_ID PRIMARY key (Supplier\_ID)

)

GO

alter table Payments

add constraint fk\_Payments\_Supplier\_ID foreign key(Supplier\_ID)

REFERENCES Suppliers(Supplier\_ID)

GO

------create table SupplierAddresses-----------

--done

create table SupplierAddresses(

Supplier\_Address\_ID int IDENTITY not null,

Supplier\_Address\_1 VARCHAR(50) not NULL,

Supplier\_Address\_2 VARCHAR(50) not NULL,

Supplier\_City VARCHAR(20) not NULL,

Supplier\_State VARCHAR(20) not NULL,

Supplier\_Zip int not NULL

constraint pk\_SupplierAddresses\_Address\_id PRIMARY key (Supplier\_Address\_ID)

)

GO

alter table Suppliers

add constraint fk\_Suppliers\_Supplier\_Address\_ID foreign key(Supplier\_Address\_ID)

REFERENCES SupplierAddresses(Supplier\_Address\_ID)

GO

------create table CreditCardPayment-----------

create table CreditCardPayment(

Payment\_ID int not null,

Credit\_Card\_ID int not null,

constraint pk\_CreditCardPayment\_Payment\_ID\_Credit\_Card\_ID PRIMARY key (Payment\_ID,Credit\_Card\_ID)

)

GO

alter table CreditCardPayment

add constraint fk\_CreditCardPayment\_Payment\_ID foreign key(Payment\_ID)

REFERENCES Payments(Payment\_ID)

GO

alter table CreditCardPayment

add constraint fk\_CreditCardPayment\_Credit\_Card\_ID foreign key(Credit\_Card\_ID)

REFERENCES CreditCards(Credit\_Card\_ID)

GO

------create table BankTransferPayment-----------

create table BankTransferPayment(

Payment\_ID int not null,

Bank\_ID int not null,

constraint pk\_BankTransferPayment\_Payment\_ID\_Bank\_ID PRIMARY key (Payment\_ID,Bank\_ID)

)

GO

alter table BankTransferPayment

add constraint fk\_BankTransferPayment\_Payment\_ID foreign key(Payment\_ID)

REFERENCES Payments(Payment\_ID)

GO

alter table BankTransferPayment

add constraint fk\_BankTransferPayment\_Bank\_ID foreign key(Bank\_ID)

REFERENCES BankAccounts(Bank\_ID)

GO

------create table Products-----------

--done

create table Products(

Product\_ID int IDENTITY not null,

Product\_Name VARCHAR(50) not NULL,

Product\_Price int not NULL,

Product\_Reserve int not NULL,

Product\_Discount int not NULL,

Lead\_Time int not NULL,

Supplier\_ID int not null

constraint pk\_Products\_Product\_ID PRIMARY key (Product\_ID)

)

GO

alter table Products

add constraint fk\_Products\_Supplier\_Supplier\_ID foreign key(Supplier\_ID)

REFERENCES Suppliers(Supplier\_ID)

GO

------create table OrderLines-----------

create table OrderLines(

Order\_ID int not null,

Product\_ID int not null,

Product\_Name VARCHAR(50) not NULL,

Product\_Price int not NULL,

Product\_Quantity int not NULL

constraint pk\_OrderLines\_Payment\_ID\_Bank\_ID PRIMARY key (Order\_ID,Product\_ID)

)

GO

alter table OrderLines

add constraint fk\_OrderLines\_Payment\_ID foreign key(Order\_ID)

REFERENCES Orders(Order\_ID)

GO

alter table OrderLines

add constraint fk\_OrderLines\_Bank\_ID foreign key(Product\_ID)

REFERENCES Products(Product\_ID)

GO

**Insertion of sample data:**

----------------INSERTS-------------------

------insert into table Addresses-----------

insert into Addresses

(Street\_Address\_1,Street\_Address\_2,City,States,Zip)

VALUES

('436 Columbus Avenue','Next to Chase','Syracuse','NY','13210'),

('567 Akerman Avenue','Next to BOA','NYC','NY','13250'),

('343 Lancaster Avenue','Next to Fedex','Olympia','NJ','13211'),

('757 Maryland Avenue','Next to UPS','Syracuse','NY','13210'),

('222 Hawthorne Avenue','Next to Walmart','Syracuse','NY','13210'),

('888 Richard Avenue','Next to Pricerite','Boston','MA','14333'),

('222 Livingston Avenue','Next to Hendricks','Syracuse','NY','13210'),

('441 Kensington Avenue','Next to Alto Cinco','Los Angeles','CA','15321'),

('909 Ostrom Avenue','Next to SU','Syracuse','NY','13210'),

('245 Bell Avenue','Next to Chase','Los Angeles','CA','15321')

GO

------insert into table CreditCards-----------

insert into CreditCards

(Credit\_card\_No,Expiration\_Month,Expiration\_Year,Cardholder\_Name)

VALUES

('2444222','01','2023','Mikhail Pinto'),

('2446422','08','2027','Pranali Shenvi'),

('2444202','12','2025','Ruchak Vira')

GO

------insert into table EmployeeTeams-----------

insert into EmployeeTeams

(Employee\_Team\_name)

VALUES

('Billing'),

('HR'),

('Finance'),

('IT'),

('Support'),

('Enrollment'),

('Cloud'),

('Tech'),

('Analytics'),

('Presentations')

GO

GO

------insert into table Shippers-----------

insert into Shippers

(Shipper\_Name)

VALUES

('UPS'),

('Fedex'),

('USPS'),

('DHL')

GO

------insert into table BankAccounts-----------

insert into BankAccounts

(BankAccount\_No,Routing\_No,Accountholder\_Name)

VALUES

('3456322','CS0927','Mikhail Pinto'),

('6677442','RO8329','Pranali Shenvi'),

('3424563','LD0393','Ruchak Vira')

GO

------insert into table Projects-----------

insert into Projects

(Project\_Name,Project\_Address\_ID)

VALUES

('BCBS','9'),

('Verizon','3'),

('Blake','8'),

('T-Mobile','1'),

('Walgreens','2'),

('SU','5'),

('Orange','7'),

('ZS','6'),

('GM','4'),

('Seagate','10')

GO

------insert into table SupplierAddresses-----------

insert into SupplierAddresses

(Supplier\_Address\_1,Supplier\_Address\_2,Supplier\_City,Supplier\_State,Supplier\_Zip)

VALUES

('466 Columbus Avenue','Next to Chase','Syracuse','NY','13210'),

('568 Akerman Avenue','Next to Chase','New York','NY','13250'),

('343 Lancaster Avenue','Next to Fedex','Olympia','NJ','13210'),

('754 Maryland Avenue','Next to Fedex','Syracuse','NY','13210'),

('221 Hawthorne Avenue','Next to Walmart','Syracuse','NY','13210')

GO

------insert into table Employees-----------

insert into Employees

(Employee\_Firstname,Employee\_Lastname,Employee\_Email,Employee\_Contact,Employee\_Team\_ID, Employee\_Title)

VALUES

('Rachel','Greene','raGreene@gmail.com','31599206309','8','Sourcing Manager'),

('Jung','Ho','Jnh@gmail.com','31599006309','2','Sourcing Associate'),

('Pranav','Sheth','psheth189@gmail.com','31599208809','4', 'Procurement Associate'),

('Ashish','Waghmare','awagh1@gmail.com','31109206309','7','Procurement Manager'),

('Ankita','Agarwal','aagrawal@gmail.com','31599204409','1', 'Contracts Associate'),

('Harsh','Athavale','haathawale@gmail.com','31599206209','5', 'Contracts Manager'),

('Naruto','Uzumaki','hiddenleaf\_123@gmail.com','31339206309','10', 'Procurement Associate'),

('Sasuke','Uchiha','rogue\_ninja@gmail.com','31599208809','9','Contracts Associate'),

('Eren','Yaeger','titan12@gmail.com','31508206309','6', 'Sourcing Associate'),

('Misa','Amane','kira2@gmail.com','31592306309','3', 'Group Manager')

GO

------insert into table Suppliers-----------

insert into Suppliers

(Supplier\_Name,Supplier\_Contact\_FName,Supplier\_Contact\_LName,Supplier\_Contact\_Email,

Supplier\_Contact,Supplier\_Address\_ID)

VALUES

('Ballistic Machines','Bill','Gray','Billie@gmail.com','3109928933','2'),

('Houser Electronics','John','Greene','Teled@gmail.com','3109921133','3'),

('3D Microtec','Agatha ','Christie','ASI\_emp@gmail.com','3119928933','5'),

('ProServ Servers','Nick','Fury','US\_Demp@gmail.com','3109922233','4'),

('Teledyne Electronics','Peter','Dinklage','WpetEmp@gmail.com','3009928933','1')

GO

------insert into table Teams-----------

insert into Teams

(Team\_Name,Project\_ID)

VALUES

('Seagate Deployment','10'),

('Verizon Execution','2'),

('GM Research','9')

GO

------insert into table Stakeholders-----------

insert into Stakeholders

(Stakeholder\_Firstname,Stakeholder\_Lastname,Stakeholder\_Team\_ID,Stakeholder\_Email\_ID,Stakeholder\_Contact,

Stakeholder\_Title, Stakeholder\_Team\_Lead)

VALUES

('Pranali','Shenvi','1','psehnvi@gmail.com','3159803790', 'Project Manager','1'),

('Mikhail','Pinto','2','mike112@gmail.com','3159803791', 'Project Manager','2'),

('Ruchak','Vira','3','rnvira47@gmail.com','3159803792', 'Project Manager','3'),

('Neel','Samant','1','neelsa123@gmail.com','3159803793', 'Research Scientist','1'),

('Pranjali','Shenvi','1','prahsen@gmail.com','3159803794', 'Software Engineer','1'),

('Usha','Sen','1','usen@gmail.com','3159803795', 'Hardware Engineer','1'),

('Manik','Tiles','2','mati@gmail.com','3159803796', 'Hardware Engineer','2'),

('Rupa','Saarees','2','rusa@gmail.com','3159803797', 'Software Engineer','2'),

('Kachrina','Kemph','2','kake@gmail.com','3159803798', 'Research Scientist','2'),

('Dolan','Tump','3','dolund@gmail.com','3159803799', 'Software Engineer','3'),

('Nurinder','Moody','3','nurinchamp@gmail.com','3159803700', 'Research Scientist','3'),

('Pappu','Gandhi','3','pape@gmail.com','3159803701', 'Hardware Engineer','3'),

('Saif Ali','Ramprasad','1','nawab@gmail.com','3159803702', 'Data Analyst','1'),

('Raja','Hindustani','2','emirkhun@gmail.com','3159803703', 'Data Analyst','2'),

('Mader','Chodh','3','hogatu@gmail.com','3159803704', 'Data Analyst','3')

------insert into table Orders-----------

insert into Orders

(PO\_Nmber,Order\_Date,Stakeholder\_ID,Employee\_ID,Shipper)

VALUES

('367','2018-12-31','4','6','2'),

('639','2019-10-31','5','10','4'),

('892','2018-07-10','9','4','3'),

('938','2019-06-08','13','9','1'),

('739','2019-11-30','15','2','1'),

('999','2018-06-23','14','1','2'),

('157','2017-05-31','7','7','3'),

('493','2018-10-12','8','5','3'),

('902','2018-08-19','10','8','2'),

('678','2018-05-30','6','3','1')

GO

------insert into table Payments-----------

insert into Payments

(Payment\_Type,Payment\_Date,Supplier\_ID, Order\_ID)

VALUES

('CC','2021-11-30','1','1'),

('BT','2020-05-06','1','2'),

('CC','2020-12-10','2','3'),

('CC','2020-03-02','2','4'),

('CC','2020-12-31','2','5'),

('BT','2021-11-12','3','6'),

('BT','2020-12-31','3','7'),

('CC','2020-04-05','4','8'),

('BT','2020-06-07','4','9')

GO

------insert into table Products-----------

insert into Products

(Product\_Name,Product\_Price,Product\_Reserve,Product\_Discount,Lead\_Time,Supplier\_ID)

VALUES

('Servers','100000','50','5','14','1'),

('Probes','200','1000','40','4','1'),

('Tablithe Waifer','4500','500','20','5','2'),

('3-DM Pro Neurometer','26000','35','10','5','2'),

('Oscilloscope','53000','120','15','14','3'),

('3-D Printers','21000','190','5','8','3'),

('Inferometer','32000','100','8','9','3'),

('Plasma Cutter','17000','400','0','7','4'),

('Pro-Gen Graphite Cable','400','5600','50','15','4'),

('Ultrasound Machine','67000','70','25','20','5')

GO

------insert into table BankTransferPayment-----------

insert into BankTransferPayment

(Payment\_ID,Bank\_ID)

VALUES

('7','2'),

('2','1'),

('6','2'),

('9','3')

GO

------insert into table CreditCardPayment-----------

insert into CreditCardPayment

(Payment\_ID,Credit\_Card\_ID)

VALUES

('1','1'),

('8','2'),

('3','2'),

('5','3'),

('4','1')

GO

------insert into table OrderLines-----------

insert into OrderLines

(Order\_ID,Product\_ID,Product\_Name,Product\_Price,Product\_Quantity)

VALUES

('1','1','Servers','100000','3'),

('2','1','Servers','100000','8'),

('1','2','Probes','200','6'),

('2','2','Probes','200','3'),

('3','3','Tablithe Wafer','4500','4'),

('4','3','Tablithe Wafer','4500','2'),

('4','4','3-DM Pro Neurometer','26000','7'),

('5','4','3-DM Pro Neurometer','26000','9'),

('6','5','Oscilloscope','53000','8'),

('6','6','3-D Printers','21000','6'),

('7','6','3-D Printers','21000','10'),

('6','7','Inferometer','32000','6'),

('8','8','Plasma Cutter','17000','8'),

('8','9','Pro-gen Graphite cable','400','5'),

('9','9','Pro-gen Graphite cable','400','3'),

('10','10','Ultrasound Machine','67000','4')

GO

**Answering business questions:**

------QUERIES------

--1

--We would like a list of product names with product id  and type along with a count of product

--quantities (shipper names). There should be a column for each of the Shippers.

with pivot\_source3 as (

    selectol.Product\_ID,ol.Product\_Name,s.Shipper\_Name,ol.Product\_Quantity

    from OrderLines ol

    join Orders o on ol.Order\_ID=o.Order\_ID

    join Shippers s on o.Shipper=s.Shipper\_ID

)

select \* from pivot\_source3 pivot(

    count(Product\_Quantity) for Shipper\_Name IN("Fedex","DHL","UPS","USPS")

)as pivot\_table3

Table

Description automatically generated

--2 What is the spend of each Stakeholder team?

CREATE VIEW Spend\_By\_StakeholderTeam

AS

Select distinct t.Team\_Name, sum((ol.Product\_Price\*ol.Product\_Quantity)) OVER (PARTITION byt.Team\_Name) as TotalSpend

from Teams t JOIN Stakeholders s

on t.Team\_ID=s.Stakeholder\_Team\_ID

JOIN Orders o on s.Stakeholder\_ID = o.Stakeholder\_ID

JOIN OrderLines ol on o.Order\_ID=ol.Order\_ID

JOIN Products p on ol.Product\_ID=p.Product\_ID

Table

Description automatically generated

--3 Which orders have not been paid for?

Select o.Order\_ID, s.Stakeholder\_Firstname + ' ' +s.Stakeholder\_Lastname as StakeholderName,

s1.Stakeholder\_Firstname + ' ' + s1.Stakeholder\_Lastname as TeamLead, t.Team\_Name, o.Order\_Date

from Teams t JOIN Stakeholders s

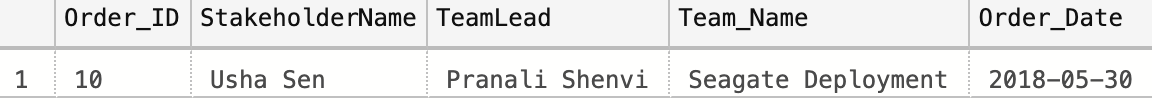
on t.Team\_ID = s.Stakeholder\_Team\_ID

join Stakeholders s1 on s1.Stakeholder\_ID = s.Stakeholder\_Team\_Lead

join Orders o on s.Stakeholder\_ID = o.Stakeholder\_ID

left join Payments p on o.Order\_ID = p.Order\_ID

where p.Order\_ID is NULL



--4 How many orders correspond to each zip code?

with pivot\_source AS

(

    Select Zip

    from Addresses a join Projects p

    on a.Address\_id=p.Project\_Address\_ID

    join Teams t on p.Project\_ID=t.Project\_ID

    JOIN Stakeholders s on t.Team\_ID=s.Stakeholder\_Team\_ID

    JOIN Orders o on s.Stakeholder\_ID=o.Stakeholder\_ID

)

SELECT \* from pivot\_source PIVOT (

    COUNT(zip) for Zip in ("15321","13210","13211")

) as pivot\_table

Table

Description automatically generated

--5 How many suppliers correspond to each zip code?

with pivot\_source5 AS

(

    Select s.Supplier\_ID, s.Supplier\_Name, sa.Supplier\_Zip

    from SupplierAddresses sa join Suppliers s

    on sa.Supplier\_Address\_ID=s.Supplier\_Address\_ID

)

SELECT \* from pivot\_source5 PIVOT (

    COUNT(Supplier\_Zip) for Supplier\_Zip in ("13210","13211","13250")

) as pivot\_table5

Table

Description automatically generated

--6 Create list of product names, price and payment method?

with pivot\_source1 AS

(

    Select p.Product\_Name, p.Product\_Price ,pa.Payment\_Type

    from Products p join Suppliers s

    on p.Supplier\_ID = s.Supplier\_ID

    join Payments pa on s.Supplier\_ID=pa.Supplier\_ID

)

SELECT \* from pivot\_source1 PIVOT (

    sum(Product\_Price) for Payment\_Type in ("BT","CC")

) as pivot\_table1

**Table

Description automatically generated**