Group Project 1

Order Management System

Team Code 8

Presented to: Prof. Vivek Mishra
BUAN 6320 DATABASE FOUNDATIONS FOR BUSINESS ANALYTICS

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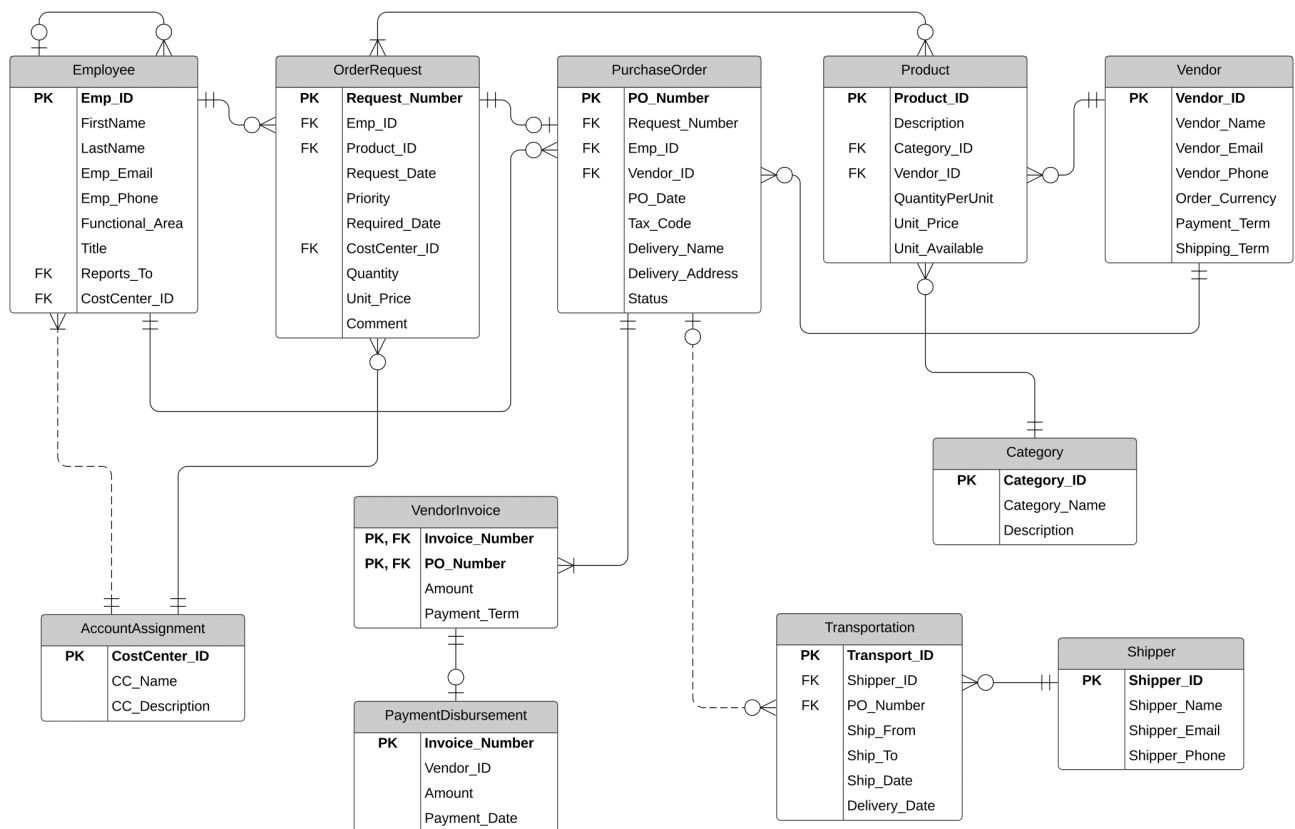Sree Gayathri Poojitha Nibhanupudi (SXN210030)
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PROBLEM DESCRIPTION

This ERD is about the indirect procurement team's order management in the manufacturing company. The indirect procurement team supports internal stakeholders' order requests through the internal ordering portal. The indirect procurement team also overlooks the delivery of goods and vendor invoices all the way to the payment disbursement. All internal stakeholders are employees of the company. An indirect purchaser, also an employee of the company, fulfils each order request identified by the request number. An indirect purchaser can decide whether to process the order requests or not. When the order request is processed by the indirect purchaser using the order details provided by the internal stakeholder, the purchase order (PO) is created and sent to the designated vendor. Once the vendor ships the product, the vendor submits the invoice to the indirect purchaser's company based on the PO. If one PO incurred multiple shipments, the invoice reflects that.

ENTITY RELATIONSHIP DIAGRAM

Employee

PK	Emp_ID
	FirstName
	LastName
	Emp_Email
	Emp_Phone
	Functional_Area
	Title
FK	Reports_To
FK	CostCenter_ID

OrderRequest

PK	Request_Number
FK	Emp_ID
FK	Product_ID
	Request_Date
	Priority
	Required_Date
FK	CostCenter_ID
	Quantity
	Unit_Price
	Comment

PurchaseOrder

PK	PO_Number
FK	Request_Number
FK	Emp_ID
FK	Vendor_ID
	PO_Date
	Tax_Code
	Delivery_Name
	Delivery_Address
	Status

Product

PK	Product_ID
	Description
FK	Category_ID
FK	Vendor_ID
	QuantityPerUnit
	Unit_Price
	Unit_Available

Vendor

PK	Vendor_ID
	Vendor_Name
	Vendor_Email
	Vendor_Phone
	Order_Currency
	Payment_Term
	Shipping_Term

Category

PK	Category_ID
	Category_Name
	Description

AccountAssignment

PK	CostCenter_ID
	CC_Name
	CC_Description

VendorInvoice

PK, FK	Invoice_Number
PK, FK	PO_Number
	Amount
	Payment_Term

PaymentDisbursement

PK	Invoice_Number
	Vendor_ID
	Amount
	Payment_Date

Transportation

PK	Transport_ID
FK	Shipper_ID
FK	PO_Number
	Ship_From
	Ship_To
	Ship_Date
	Delivery_Date

Shipper

PK	Shipper_ID
	Shipper_Name
	Shipper_Email
	Shipper_Phone

RELATIONAL DATABASE SCHEMA

Employee

All internal stakeholders are employees of the company. Each employee has one manager to report, except the CEO. Each employee can order zero to many products. The primary key in the employee table, that is the Employee ID (EMP_ID) is used as the foreign key in the Order Request table.

```
CREATE TABLE Employee(
Emp_ID     INTEGER Not Null ,
FirstName    VARCHAR(20) Not Null,
LastName           VARCHAR(20) Not Null,
Emp_Email    VARCHAR(30) Not Null,
Emp_Phone    VARCHAR (15) Not Null,
FunctionalArea  VARCHAR(50) Not Null,
Title                VARCHAR(30) Not Null,
Reports_To     INTEGER Null,
CostCenter_ID BIGINT Not Null,
CONSTRAINT PKEmp PRIMARY KEY (EMP_ID),
CONSTRAINT FKCostID FOREIGN KEY (CostCenter_ID) REFERENCES
AccountAssignment(CostCenter_ID),
CONSTRAINT FKReports FOREIGN KEY (Reports_To) REFERENCES Employee);
```

Order Request

Order Request table has a zero or one relationship with the Employee table. An order request can only be submitted by one employee. An employee can submit zero or multiple order requests. When filling out the order request, the internal stakeholder must fill out the details, including product, quantity, unit price, and the cost center to be charged. An order request must have one and only cost center, but a cost center can be related to zero or multiple order requests. One order request can have zero or multiple products, and a product can be part of one or multiple order requests.

```
 CREATE TABLE OrderRequest
(Request_Number INTEGER Not Null,
Emp_ID INTEGER Not Null,
Product_ID VARCHAR(15) Null,
Request_Date DATETIME Not Null,
```

```
Priority VARCHAR(20) Not Null,
Required_Date DATETIME Not Null,
CostCenter_ID BIGINT Not Null,
Quantity INTEGER Not Null,
Unit_Price FLOAT Not Null,
Comment VARCHAR(50) Null,
CONSTRAINT PKRequest  PRIMARY KEY (Request_Number),
CONSTRAINT FKEmpID FOREIGN KEY (Emp_ID) REFERENCES
Employee(Emp_ID),
CONSTRAINT FKProdID FOREIGN KEY (Product_ID) REFERENCES
Product(Product_ID),
CONSTRAINT FKCostsID  FOREIGN KEY (CostCenter_ID)  REFERENCES
AccountAssignment(CostCenter_ID))
```

Account Assignment

This table captures the cost center ID, name and description. CostCenter_ID connected the OrderRequest table to the AccountAssignment Table. The table has two more columns i.e. CC_Name and CC_Description which identifies the category and gives a detailed description of the respective type respectively.

```
CREATE TABLE AccountAssignment
(CostCenter_ID BIGINT       Not Null,
CC_Name        VARCHAR(20) Not Null,
CC_Description VARCHAR(500) Not Null,
CONSTRAINT PKCostID PRIMARY KEY (CostCenter_ID));
```

Purchase Order

When the order request is processed using the order details provided by the internal, the purchase order (PO) is created and sent to the designated vendor. PO can be derived from only one order request. An employee can create zero or multiple POs depending on whether that employee is an indirect purchaser or not. PO can be created by only one employee. PO contains valuable information, including PO number, amount, and shipping term. One PO can be sent to only one vendor, and one vendor can have zero or multiple POs.

```
CREATE TABLE PurchaseOrder
(PO_Number BIGINT Not Null,
Request_Number INTEGER Not Null,
Emp_ID INTEGER Not Null,
```

```
Vendor_ID INTEGER Not Null,
PO_Date DATETIME Not Null,
TaxCode VARCHAR(5) Not Null,
Delivery_Name VARCHAR(30) Not Null,
Delivery_Address VARCHAR(300) Not Null,
Status VARCHAR(20) Not Null,
CONSTRAINT PKPONumber PRIMARY KEY (PO_Number),
CONSTRAINT FKReqNum FOREIGN KEY (Request_Number) REFERENCES
OrderRequest(Request_Number),
CONSTRAINT FKEmpsID FOREIGN KEY (Emp_ID) REFERENCES
Employee(Emp_ID),
CONSTRAINT FKVendorID FOREIGN KEY (Vendor_ID) REFERENCES
Vendor(Vendor_ID))
```

Product

Order Request table has a zero or many relationships with the Product table as an order request can contain multiple products and a product can be a part of one or many order requests. Each product can be supplied by one vendor thereby establishing a one and only relationship with the vendor. Each product has one registered category, and a category can have zero or multiple products.

```
CREATE TABLE Product
(Product_ID VARCHAR(15) Not Null,
Description VARCHAR (50) Not Null,
Category_ID VARCHAR (15)      Not Null,
Vendor_ID INTEGER Not Null,
QuantityPerUnit INTEGER Not Null,
Unit_Price FLOAT Not Null,
Unit_Available INTEGER Not Null,
CONSTRAINT PKProID PRIMARY KEY (Product_ID),
CONSTRAINT FKCatID FOREIGN KEY (Category_ID) REFERENCES
Category(Category_ID),
CONSTRAINT FKVendID FOREIGN KEY (Vendor_ID) REFERENCES
Vendor(Vendor_ID))
```

Vendor

A particular vendor can supply zero or multiple purchase products. So, it has zero or many relationships with the purchase order. A vendor can have more than one product with them. This demonstrates one or many relationships with the product.

Each product is given to only one vendor. Thus, a one and only relationship exists between the product and the vendor.

```
CREATE TABLE Vendor
(Vendor_ID INTEGER Not Null,
Vendor_Name VARCHAR(50) Not Null ,
Vendor_Email VARCHAR(50) Not Null,
Vendor_Phone VARCHAR(15) Not Null,
Order_Currency VARCHAR(10) Not Null,
Payment_Term VARCHAR(20) Not Null,
Shipping_Term VARCHAR(20) Not Null,
CONSTRAINT PKVendID PRIMARY KEY (Vendor_ID))
```

Category

The Category table describes the type of product ordered through the Category_ID column, which is linked to the Product table. It has two other columns, which are Category_Name and Description. Category_Name column identifies the product under which category it comes, and the description column gives us a detailed description of the respective type.

```
CREATE TABLE Category
(Category_ID VARCHAR(15) Not Null,
Category_Name VARCHAR (50)          Not Null,
Description    VARCHAR (500)         Not Null,
CONSTRAINT PKCategoryID PRIMARY KEY (Category_ID))
```

Vendor Invoice

Vendor Invoice Table captures the invoice number, purchases order (PO) number, amount (price) and payment term. The PO_Number connects the table to Transportation. The three columns Invoice_Number, Amount and Payment_Term link the table PaymentDistribution.

```
CREATE TABLE VendorInvoice
(Invoice_Number VARCHAR(20) Not Null,
PO_Number BIGINT Not Null,
Amount FLOAT Not Null,
PaymentTerm VARCHAR(10) Not Null,
CONSTRAINT PKNumber PRIMARY KEY (Invoice_Number, PO_Number),
CONSTRAINT FKInvNum  FOREIGN KEY (Invoice_Number) REFERENCES
PaymentDisbursement(Invoice_Number),
CONSTRAINT FKPONum  FOREIGN KEY (PO_Number) REFERENCES
PurchaseOrder(PO_Number))
```

Payment Disbursement

Payment disbursement table tracks the payments made to the vendor. All disbursements are recorded to show how a business spends money over time.

```
CREATE TABLE PaymentDisbursement
(Invoice_Number VARCHAR (20) Not Null,
Vendor_ID BIGINT           Not Null,
Amount INTEGER        Not Null,
Payment_Date DATETIME    Not Null,
CONSTRAINT PKInvnumber PRIMARY KEY (Invoice_Number))
```

Transportaion

This table describes all the activities related to the transportation of the product ordered to a particular address. The Transport_ID is an identifier for each product that is to be transported. It is connected to the shipper and purchase-order table by the shipper_ID and PO_Number column. It also has other columns like Ship_From in which we can see from which address the product will be shipped, Ship_To column describes to which address the product needs to be sent, and Ship_Date column identifies on which date the order should be dispatched. The ``

```
 CREATE TABLE Transportation
(Transport_ID    INTEGER    Not Null,
Shipper_ID VARCHAR(3)    Not Null,
PO_Number  BIGINT     Not Null,
Ship_From  VARCHAR(40)     Not Null,
Ship_To        VARCHAR(500) Not Null,
Ship_Date  DATETIME   Not Null,
Delivery_Date   DATETIME   Not Null,
CONSTRAINT PKTransportID PRIMARY KEY (Transport_ID))
ALTER TABLE transportation ALTER COLUMN ship_from varchar(150);
```

Shipper

The shipper table has all the information related to the product's shipment details, which is linked through Shipper_ID and Transport_ID columns to the transportation table. A shipper can arrange multiple transportations. It has other three columns, which are Shipper_Name, Shipper_Email, and Shipper_Phone. The Shipper_Name describes the courier service company which will be shipping the order and their respective email-id and c.

```
CREATE TABLE Shipper
(Shipper_ID     VARCHAR(3) Not Null,
Shipper_Name VARCHAR (20) Not Null,
Shipper_Email VARCHAR(50) Not Null,
Shipper_Phone VARCHAR(15) Not Null,
CONSTRAINT PKShipperID PRIMARY KEY (Shipper_ID))
```

DATA INPUT

Employee Table

```sql
INSERT INTO
EMPLOYEE(EMP_ID,FirstName,LastName,Emp_Email,Emp_Phone,FunctionalArea,Title,Reports_to,CostCenter_ID)
VALUES
(18739801,'Michael', 'Smith','michael.smith@webuy.com','+1 469-262-2083','Sourcing','Sourcing Manager',NULL,3093005032),

(18738535,'David','Brown','david.brown@webuy.com','+1 972-409-9567','Finance','Financial Manager',NULL,3093005050),
(18768110,'Henry','Williams','henry.williams@webuy.com','+1 972-817-8324','Quality','Quality Manager',NULL,3093005004),

(18761157,'Sarah','Miller','sarah.miller@webuy.com','+1 469-753-9981','Engineering','Test Engineering Manager',NULL,3093005018),

(18702134,'Camila','Rodriguez','camila.rodriguez@webuy.com','+1 469-459-9207','Project Management','Head of Project Mgmt.',NULL,3093005007),
(18732221,'Terrell','Hart','terrell.hart@webuy.com','+1 972-102-3210','Warehouse','Inventory Specialist',NULL,3093005017);


INSERT INTO
EMPLOYEE(EMP_ID,FirstName,LastName,Emp_Email,Emp_Phone,FunctionalArea,Title,Reports_to,CostCenter_ID)
VALUES
(18769661,'James','Smith','james.smith@webuy.com','+1 214-724-7214','Sourcing','Buyer',18739801,3093005032),
(18770763,'Maria', 'Garcia','maria.garcia@webuy.com','+1 214-757-1446','Finance','Financial Analyst',18738535,3093005050),
(18728551,'Nancy','Clark','nancy.clark@webuy.com','+1 214-678-2557','Engineering','Test Engineer',18761157,3093005018),
(18778959,'Michael', 'Jordan','michael.jordan@webuy.com','+1 972-741-6181','Sourcing','Senior Buyer',18739801,3093005032),
(18762206,'Catherine','Jones','catherine.jones@webuy.com','+1 972-789-6101','Project Management','Project Manager',18702134,3093005007);
```

Order Request

```
insert into
OrderRequest(Request_Number,Emp_ID,Product_ID,Request_Date,Priority,
Required_Date,CostCenter_ID,Quantity,Unit_Price,Comment)
values
(954,18770763,NULL,'2021-9-28','Critical','2021-9-
29',3093005044,1,4500.00 ,NULL),
(1598,18768110,'35XE17','2021-9-17','Low','2021-10-
1',3093005004,20,35.31,NULL),
(589,18728551,'13Y814','2021-8-1','Low','2021-8-
14',3093005018,53,3.78 ,NULL),
(590,18728551,'30PY94','2021-6-5','Low','2021-6-30',3093005018,2,
2500.00,NULL),
(1973,18762206,'22UM24','2021-7-20','Low','2021-8-
5',3093005007,1,358.21 ,NULL),
(234,18762206,'35XE17','2021-1-25','Normal','2021-2-
13',3093005007,15,35.31,NULL),
(99,18762206,'401L79','2021-10-6','Normal','2021-10-
20',3093005007,24,56.21,NULL),
(157,18732221,'20JE34','2021-3-9','Low','2021-3-
20',3093005017,1,50.00,NULL),
(1237,18732221,'38WF39','2021-8-23','Low','2021-9-
10',3093005017,3,3100.00,NULL),

(1874,18732221,'4NY79','2021-9-29','Normal','2021-10-
30',3093005017,2,89.78,NULL)
```

Account Assignment

```
Insert into AccountAssignment (CostCenter_ID,CC_Name,CC_Description)
values (
3093005044,'Operation','Business operations refers to the activities
that firms optimize and engage in on a daily basis to increase the
value of the enterprise and earn a profit.'),
(3093005018,'Engineering', 'Manufacturing engineering applies
procedures in manufacturing processes and methods of production of
industrial products. It includes research and develop tools,
processes, machines, and equipment; and integrating the facilities
and systems for producing quality products with the optimal
expenditure of capital.'),
(3093005007,'Project Management','Project management is the process
of using specific knowledge, skills, tools and techniques to deliver
something of value to people. Examples include the construction of a
building and the expansion of sales into a new geographic market.'),
(3093005017,'Warehouse','Warehouses stores inventory for
manufacturers and distributors. The storage facility uses storage
```

racks, handling equipment and personnel and management resources, to categorize the incoming and the outgoing flow of goods.'),
(3093005032,'Sourcing','Sourcing or procurement is the process of locating, acquiring and managing of all the vital inputs required for an organisation to operate. This includes raw materials, component parts, products, labour in all its forms, location and services. '),
(3093005050,'Finance','Finance refers to the acquisition and conservation of funds, capital structuring, accounting, and investment decisions to meet the objectives of a business enterprise.'),
(3093005004,'Quality','Quality control ensures that firms adhere to a predefined set of quality standards for products and services or meets the requirements of customers or clients. This includes training, creating benchmarks for measuring product or service quality, and testing to check for any significant variations in quality.');

Purchase Order

```
insert into
PurchaseOrder(PO_Number,Request_Number,Emp_ID,Vendor_ID,PO_Date,TaxCode,Delivery_Name,Delivery_Address,Status)
values
(9202582691,954,18769661,2000165051,'2021-9-28','OI','We Buy','800 W Campbell Rd, Richardson, TX 75080','Complete'),
(9202583837,1598,18769661,2000165051,'2021-9-18','2I','Henry Williams','800 W Campbell Rd, Richardson, TX 75080','Complete'),
(9202590959,589,18769661,2000068762,'2021-8-3','OI','Nancy Clark','800 W Campbell Rd, Richardson, TX 75080','Complete'),
(9202590960,590,18769661,2000109497,'2021-6-7','OI','Nancy Clark','800 W Campbell Rd, Richardson, TX 75080','Complete'),
(9202594482,1973,18778959,2000109497,'2021-7-21','OI','Catherine Jones','800 W Campbell Rd, Richardson, TX 75080','Complete'),
(9202597404,234,18778959,2000153204,'2021-1-25','OI','Catherine Jones','800 W Campbell Rd, Richardson, TX 75080','Complete'),
(9202599851,99,18778959,2000153204,'2021-10-7','2I','Catherine Jones','800 W Campbell Rd, Richardson, TX 75080','In Progress'),
(9202690255,157,18778959,2000068594,'2021-3-9','OI','Terrell Hart','800 W Campbell Rd, Richardson, TX 75080','Complete'),
(9202714484,1874,18778959,2000068594,'2021-9-30','2I','Terrell Hart','800 W Campbell Rd, Richardson, TX 75080','In Progress')
```

Product

```sql
insert into product
(Product_id,description,category_id,vendor_id,quantityperunit,unit_price,unit_available) values
('35XE17', 'Mini-fridge','XAM0100',2000165051,1, 35.31 ,15),
('13Y814', 'Band-Aid','XSW0200', 2000068762,30   , 3.78    ,40),
('30PY94', 'microscope','XTM0100',2000109497,    1, 2500.00 ,7),
('22UM24', 'Welder',   'XTM0100', 2000109497,      1,    358.21 ,8),
('401L79', 'Teardrop Beam', 'XHW0200', 2000153204,1,    56.21 ,11),
('20JE34', 'Bin',      'XHW0200', 2000068990,1,    50.00      ,24),
('38WF39', 'forklift',      'XHW0200', 2000068594,1, 3100.00 ,6),
('4NY79','cabinet',    'XFM0500', 2000068990,1, 89.78    ,13),
('53PN33', 'Mounting component (key-locked drawer)',   'XFM0500',
2000070327,1,350 ,5),
('6YJ44',  'Sofa','XFM0600',2000180795,1,   300   ,5),
('1VTX8',  'Chair','XFM0600',2000181153,1,  145   ,10),
('43WA64', 'Side table','XFM0600',2000057313,1,   135 , 18);
```

Vendor

```sql
insert into vendor
(Vendor_ID,Vendor_name,Vendor_email,Vendor_phone,Order_currency,Payment_term,Shipping_term) values
(2000165051,'ABB','abb@vendors.com','+1 972-419-2133','EUR','Net 30','FCA'),
(2000068762,'Dell','info@dell.com','+1 214-614-2158','USD','Net 60','DDP'),
(2000109497,'Grainger','sales@grainger.com','+1 214-441-2513','USD','Net 90','DAP'),
(2000153204,'Jabil','jabilvendors@outlook.com','+1 469-524-2142','USD','Net 30','FCA'),
(2000068990,'Keysight','venture@keysight.com','+1 972-321-5834','USD','Net 60','FCA'),
(2000068594,'McMaster-Carr','mcmaster-carr@MMC.com','+1 214-138-4628','USD','Net 30','FCA'),
(2000070327,'HP','info@hp.com','+1 469-939-6527','USD','Net 30','DDP'),
(2000180795,'Koh Young','koh.young@live.com    ','+1 972-373-3521','USD','Net 60','DDP'),
(2000181153,'Malin','contact@malin.com','+1 972-976-7623','USD','Net 60','DAP'),
(2000057313,'Nefab','alex.wang@nefab.com','+1 469-251-9064','USD','Net 60','FOB');
```

Category

```sql
insert into category (Category_ID,Category_Name,Description) values
('XAM0100','Pantry Supplies','Pantry Supplies include supplies like
dry goods, frozen items, sauces, cooking equipment like coffee
machines, blenders etc.'),
('XSW0200' ,'Medical Supplies',  'Medical Supplies include
consumable medical supplies (also referred to as disposable
supplies), testing supplies and equipment, durable medical
equipment, surgical supplies etc.'),
('XTM0100',      'Test Equipment',     'Test Equipments include
products that are used to create signals and capture responses from
devices, to prove proper operation or trace faults.'),
('XHW0200',      'WH equipment', 'Warehouse equipment includes
products like forklift, conveyors, hand trucks and equipment that
are essential to a warehouse.'),
('XFM0500',      'Office Supplies',    'Office Supplies includes
products like pens, pencils, tapes, pins. Ideally any consumables
and equipment regularly used in offices by businesses and other
organizations, by individuals engaged in written communications,
recordkeeping or bookkeeping, janitorial and cleaning, and for
storage of supplies or data.'),
('XFM0600' ,'Furniture'     ,'Furniture is large movable equipment
such as tables, cabinets or other space accessories that are used to
make a house, an office or a room suitable for living or working.'),
('XTP0100' ,'IT & Hardware',     'IT Hardware includes tools,
machinery, and any other durable equipment like machines, wiring,
computer components.  IT hardware  is the technology you can
physically touch.'),
('XCS0300' ,'Stationery'    ,'Stationeries include writing paper,
envelopes, form paper, and other office supplies. Stationery
includes materials to be written on by hand or by equipment such as
computer printers.')
```

Vendor Invoice

```sql
insert into
VendorInvoice(Invoice_Number,PO_Number,Amount,PaymentTerm)
values
('ABB123',9202582691,4500.00,'Net 30'),
('ABB124',9202583837,706.20,'Net 30'),
('Dell0123',9202590959,200.34,'Net 60'),
('Grainger9876',9202590960,5000.00,'Net 90'),
('Grainger9877',9202594482,358.21,'Net 90'),
('Grainger9878',9202597404,529.65,'Net 30'),
('Grainger9879',9202599851,562.10,'Net 30'),
('Grainger9880',9202599851,449.68,'Net 30'),
('Grainger9881',9202599851,337.26,'Net 30'),
```

```
('McMaster456',9202690255,50.00,'Net 30'),
('McMaster457',9202714484,179.56,'Net 30')
```

Payment Disbursement

```
insert into paymentdisbursement
(Invoice_number,Vendor_ID,Amount,Payment_date)
values ('ABB123',      2000165051,      4500.00 , '2021-11-01'),
('ABB124', 2000165051,        706.20,   '2021-10-23'),
('Dell0123'      ,2000068762,      200.34,   '2021-10-12'),
('Grainger9876',2000109497, 5000.00,  '2021-09-20'),
('Grainger9877' ,2000109497,       358.21,   '2021-11-08'),
('Grainger9878' ,2000153204,       529.65,   '2021-03-06'),
('Grainger9879' ,2000153204,       562.10,   '2021-11-15'),
('Grainger9880' ,2000153204,       449.68,   '2021-11-09'),
('Grainger9881' ,2000153204,       337.26,   '2021-11-13'),
('McMaster456'  ,2000068594,       50.00 ,   '2021-04-28'),
('McMaster457'  ,2000068594,       179.56 ,  '2021-11-05');
```

Transportaion

```
insert into
Transportation(Transport_ID,Shipper_ID,PO_Number,Ship_From,Ship_To,S
hip_Date,Delivery_Date)
values
(12345678,'UPS',9202582691,'ABB, address','Webuy, 800 W Campbell Rd,
Richardson, TX 75080','2021-10-8','2021-10-13'),
(78965421,'UPS',9202583837,'put vendor ABBs address','Webuy, 800 W
Campbell Rd, Richardson, TX 75080','2021-9-23','2021-9-27'),
(36873188,'UPS',9202590959,'put vendor Dells address','Webuy, 800 W
Campbell Rd, Richardson, TX 75080','2021-8-13','2021-9-28'),
(34879213,'FDX',9202590960,'put vendor Graingers address','Webuy,
800 W Campbell Rd, Richardson, TX 75080','2021-6-22','2021-6-28'),
(73378214,'FDX',9202594482,'put vendor Graingers address','Webuy,800
W Campbell Rd, Richardson, TX 75080','2021-8-10','2021-8-15'),
(69731588,'FDX',9202597404,'put vendor Graingers address','Webuy,
800 W Campbell Rd, Richardson, TX 75080','2021-2-4','2021-2-9'),
(67894561,'DHL',9202599851,'put vendor Graingers address','Webuy,
800 W Campbell Rd, Richardson, TX 75080','2021-10-16','2021-10-21'),
(24567983,'DHL',9202599851,'put vendor Graingers address','Webuy,
800 W Campbell Rd, Richardson, TX 75080','2021-10-10','2021-10-15'),
(15468783,'UPS',9202599851,'put vendor Graingers address','Webuy,
800 W Campbell Rd, Richardson, TX 75080','2021-10-14','2021-10-19'),
(45687633,'UPS',9202690255,'put vendor McMasters address','Webuy,
800 W Campbell Rd, Richardson, TX 75080','2021-3-29','2021-4-3'),
(96843335,'FDX',9202714484,'put vendor McMasters address','Webuy,
800 W Campbell Rd, Richardson, TX 75080','2021-10-6','2021-10-11')
UPDATE Transportation
SET Ship_From = 'ABB, 4875 Acacia St, Tampa, FL 33604'
```

```sql
WHERE Transport_ID = 12345678;
UPDATE Transportation
SET Ship_From = 'ABB, 4875 Acacia St, Tampa, FL 33604'
WHERE Transport_ID = 78965421;
UPDATE Transportation
SET Ship_From = 'Dell, 3100 Orchid St, Austin, TX 78681'
WHERE Transport_ID = 36873188;
UPDATE Transportation
SET Ship_From = 'Grainger, 2760 AB Street, Houston, TX 77004'
WHERE Transport_ID = 34879213;
UPDATE Transportation
SET Ship_From = 'Grainger, 2760 AB Street, Houston, TX 77004'
WHERE Transport_ID = 73378214;
UPDATE Transportation
SET Ship_From = 'Grainger, 2760 AB Street, Houston, TX 77004'
WHERE Transport_ID = 69731588;
UPDATE Transportation
SET Ship_From = 'Grainger, 2760 AB Street, Houston, TX 77004'
WHERE Transport_ID = 67894561;
UPDATE Transportation
SET Ship_From = 'Grainger, 2760 AB Street, Houston, TX 77004'
WHERE Transport_ID = 24567983;
UPDATE Transportation
SET Ship_From = 'Grainger, 2760 AB Street, Houston, TX 77004'
WHERE Transport_ID = 15468783;
UPDATE Transportation
SET Ship_From = 'McMaster, 6100 Loft Avenue, Oklahoma City, OK 73139'
WHERE Transport_ID = 45687633;
UPDATE Transportation
SET Ship_From = 'Grainger, 2760 AB Street, Houston, TX 77004'
WHERE Transport_ID = 96843335;
```

Shipper

```sql
insert into
Shipper(Shipper_ID,Shipper_Name,Shipper_Email,Shipper_Phone)
values
('UPS','UPS','outbound@ups.com','+1 800-100-5000'),
('FDX','FedEx','info@fedex.com','+1 800-100-3592'),
('DHL','DHL','info@dhl.com','+1 800-100-2784')
```

QUERIES

--Q.1 List all the internal stakeholders who have the order request with the order quantity greater than 20 each and their corresponding cost center details.

select distinct e.FirstName, e.LastName , o.CostCenter_Id, o.Quantity, a.cc_Name from
Employee e, OrderRequest o, AccountAssignment a
Where e.Emp_Id = o.Emp_Id and e.costCenter_id = o.costcenter_id and a.costCenter_id
= o.costcenter_id
and o.Quantity > 20;

Results   Messages

	FirstName	LastName	CostCenter_Id	Quantity	cc_Name
1	Catherine	Jones	3093005007	24	Project Management
2	Nancy	Clark	3093005018	53	Engineering

--Q.2 What are the names of the top 2 employees who requested the highest quantity of orders?

select TOP 2 e.FirstName, e.LastName, COUNT(e.Emp_Id) as cnt
from Employee e, OrderRequest o
where e.Emp_Id = o.Emp_Id
group by e.FirstName, e.LastName
order by COUNT(e.Emp_Id) desc;

Results   Messages

	FirstName	LastName	cnt
1	Terrell	Hart	3
2	Catherine	Jones	3

 --Q.3 Get the transportation details for the order which was shipped in the month of September?

select distinct t.Transport_ID,t.shipper_id, p.PO_Number,p.PO_Date, s.Shipper_Email,
t.Ship_From, t.Ship_To
from shipper s, Transportation t, PurchaseOrder p
Where s.Shipper_ID = t.Shipper_ID and p.PO_Number = t.PO_Number and
MONTH(p.PO_Date) = 9;

Results   Messages

	Transport_ID	shipper_id	PO_Number	PO_Date	Shipper_Email	Ship_From	Ship_To
1	12345678	UPS	9202582691	2021-09-28 00:00:00.000	outbound@ups.com	ABB, 4875 Acacia St, Tamp…	Webuy, 800 W Campbell Rd,…
2	78965421	UPS	9202583837	2021-09-18 00:00:00.000	outbound@ups.com	ABB, 4875 Acacia St, Tamp…	Webuy, 800 W Campbell Rd,…
3	96843335	FDX	9202714484	2021-09-30 00:00:00.000	info@fedex.com	Grainger, 2760 AB Street,…	Webuy, 800 W Campbell Rd,…

--Q.4 Group the Products with respect to their categories which has price greater than   2000 USD.

select c.Category_ID, c.category_name, p.Product_ID, p.[Description],p.unit_price
from Category c, Product p
where p.category_id = c.category_id
and p.unit_price > 2000;

Results   Messages

	Category_ID	category_name	Product_ID	Description	unit_price
1	XTM0100	Test Equipment	30PY94	microscope	2500
2	XHW0200	WH equipment	38WF39	forklift	3100

--Q.5 What's the name of an internal stakeholder who placed an order request that resulted in the highest invoice amount?

```
select e.FirstName, e.LastName, v.Amount as MaxAmount
From PurchaseOrder p, VendorInvoice v, OrderRequest o, Employee e
where p.PO_Number = v.PO_Number
and o.Request_Number = p.Request_Number
and e.Emp_ID = o.Emp_ID
and v.Amount in ( select MAX(amount) from VendorInvoice);
```

Results   Messages

	FirstName	LastName	MaxAmount
1	Nancy	Clark	5000

CONTRIBUTION STATEMENTS

Namrata Kukreja (NXK210023)
- Created and updated the data into the tables.
- Helped with final report – tables description.

Sagar Gupta (SSG200012)
- Created some SQL Reports and their corresponding screenshots which included data from almost all the tables.
- Actively coordinated with Steven to make the Report presentable and meaningful.
- Helped Keerthana and Satish on some of their doubts on query creation.
- Presentation in the class

Sai Hanisha Sikharam (SXS210155)
- Worked with Sagar for creating some SQL queries and screenshots which included data from almost all the tables.

Sai Lakshmi Keerthana Vogireddy (SXV210045)
- Worked on the whole relational database schema.
- Helped with the final report – tables description.
- Implemented the whole DB by debugging and executing it successfully.

Satish Gandhi (SXG210055)
- Worked on the whole relational database schema.
- Implemented the whole DB by debugging and executing it successfully.

Snehaa Shri Hari (SXS200320)
- Worked on the layout and compilation of the final report.
- Wrote the description for the tables with the help of other members.
- Helped rephrase one of the question for one of the queries.
- Worked on the problem description.

Sree Gayathri Poojitha Nibhanupudi (SXN210030)
- Worked on the problem description with other team members.
- Worked on the tables description

Steven Cheun (SXC161431)
- Came up with the group name.
- Facilitated the group communication by leading the discussion.
- Came up with the to-do list and delegated the task to each person.
- Setup the meeting time and encouraged the participation from each person.
- Developed & defined the database development problem.
- Created an Entity-Relationship Diagram (ERD) including all cardinalities of relationships.
- Provided most of the dataset.
- Supported in creating & validating the sample data reports with meaningful SQL queries.
- Presentation in the class.