

# ERP ASSIGNMENT

In this assignment we have bifurcated all the components of E-commerce database (which is commonly used in almost every organization) from the data which was provided to us. We have documented all the necessary and required components. which covers important questions and topic like

➤ Table
➤ Introduction
➤ Columns Explanation
➤ Conclusion

In the conclusion section after each table we have included the overview of table our own personal views on table that what should be added or removed? Few advantages and disadvantages.

# CUSTOMER TABLE

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden
6	Blauer See Delikatessen	Hanna Moos	Forsterstr. 57	Mannheim	68306	Germany
7	Blondel père et fils	Frédérique Citeaux	24, place Kléber	Strasbourg	67000	France
8	Bólide Comidas preparadas	Martín Sommer	C/ Araquil, 67	Madrid	28023	Spain

## Introduction:

This table stores the data of each customer which includes their uniqueID, Name, Address, City, Postal code. Customer table is most crucial and important table for any organization because knowing your customer is a key point of any successful business. Without customers business cannot sell their goods and services and without this gaining profit from business is almost impossible. So It's important to keep their details more private secure and well structured.

## Columns Explanation:

### CustomerID:

1. To manage the data of customer in a more efficient and better way it's important to give unique identity to each and every customer.
2. CustomerId is a primary key the customer table this column is linked with many table. This column is used to a unique separate identity number to every customer.

### CustomerName :

1. Customer names are represented in this column just to identify each customer in an accurate way so that this information can be provided to shippers to contact each customer.

### Address/City/Postal code/Country:

1. This data is also used and accessed by the shipper's to deliver the package on time and at exact locations.
2. All these column plays a very major role in delivery process which make it easier to calculate the estimated time to deliver the package.

3. This data also helps the organisation to analyse the maximum, minimum or the average number of orders or sales which is performed in particular area.

### **Conclusion:**

Using this table, the organization can build and maintain a very good relationship with customers. As the is linked with a few other tables and with the help of this we can make future predictions by analyzing the total number of orders made by the group of customers and also take a look at the reports generated on the basis of table data before launching any new products in the market so it helps in the decision making process. But there are also some flaws. As every organisation knows the importance of customer details so the organisation needs to make sure that the data is secure because if the data get leaked it can cause huge damage on the companies reputation. If we observe the table properly, we can see that there are two main attributes CustomerIdentity and Location of delivery. Two more columns should be added so that the order details can be sent to the customer using Email and Contact number.

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# EMPLOYEE TABLE

EmployeeID	LastName	FirstName	BirthDate	Photo	Notes
1	Davolio	Nancy	12/8/1968	EmplD1.pic	Education includes a BA in psychology from Colorado State University. She also completed 'The Art of the Cold Call'. Nancy is a member of 'Toastmasters International'.
2	Fuller	Andrew	2/19/1952	EmplD2.pic	Andrew received his BTS commercial and a Ph.D. in international marketing from the University of Dallas. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager and was then named vice president of sales. Andrew is a member of the Sales Management Roundtable, the Seattle Chamber of Commerce, and the Pacific Rim Importers Association.
3	Leverling	Janet	8/30/1963	EmplD3.pic	Janet has a BS degree in chemistry from Boston College). She has also completed a certificate program in food retailing management. Janet was hired as a sales associate and was promoted to sales representative.
4	Peacock	Margaret	9/19/1958	EmplD4.pic	Margaret holds a BA in English literature from Concordia College and an MA from the American Institute of Culinary Arts. She was temporarily assigned to the London office before returning to her permanent post in Seattle.

## Introduction:

The Employee table is one of the crucial tables for any organization. This keep the details of each and every employee. In this example table, we have EmployeeID, LastName, FirstName, BirthDate, Photo, and notes. This table is connected with different tables using the primary key. There are many events that occur in a firm where the employee details are required which are fulfilled by this table providing all the necessary information about any employee.

## Columns Explanation:

### EmployeeID:

1. Each and every data stored about every individual's employee should be unique and different there should not be a duplication of data in this table.
2. This column is required because it is very difficult to insert and get the data about any number of employees by their compared to a simple unique id. Sql queries become way more simple than writing a query using characters.
3. It helps us to check that which employee is associated with which order. Because this column is also linked with the order table.

### LastName,FirstName

1. EmployeeID is required to perform fast and efficient Database queries but in the employee details, it's very important to also append the FirstName as well as LastName. so that every employee can be also identified with their respective names.

2. By inserting a data into the name column we Make sure that there is no false data about any employee because before inserting names into the database Legal documents of each employee is cross-verified
3. By adding the last name we ensure that there are no two employees have a same name and just in case they do the data can be differentiated using the EmployeeID.

### **BirthDate**

1. Using birthDate column we can also calculate the age of the employee so that after getting age we can provide the data to authorities for the activities like retirement for verifying legal age on every employee and promotions, etc.
2. With the help of this column, the employees can be placed according to their age group to get maximum efficient and good output.

### **Photo:**

1. It becomes way more easier to identify a particular employee with the help of their photograph.
2. The picture is a key point to store a quality and useful data about any person.

### **Notes:**

1. In this column all other information about employees can be stored, for example, their qualification, experience, achievements and hobbies, etc.
2. This information is not useful for the customer but for the organization, it is because by inspecting this data the authorities can estimate the quality of employees.

### **Conclusion:**

Employee table is a critical part of the database of any organization. Just think about it that without his table how complex it would be to find the data of any employee. The employee are the major part of any firm. Any organization becomes popular because of its products or services provided by its employee. So this table helps the organization to keeps the tracks of each individuals employee. This table also has some flows for example if we want to contact any employee there is no way where we can contact them. There must be two more columns should be added which is CONTACT NO and EMAIL ADDRESS. This table should be stored in a very secure Database because of this critical information about employees.

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# ORDERDETAILS TABLE

OrderDetailID	OrderID	ProductID	Quantity
1	10248	11	12
2	10248	42	10
3	10248	72	5
4	10249	14	9
5	10249	51	40
6	10250	41	10
7	10250	51	35
8	10250	65	15

## Introduction:

Whenever a customer places an order for any commodity many operations are performed on this table. All the order details get stored in the columns of this table which includes OderdetailID, OderID, ProductID, and Quantity. If an organization is facing difficulties in getting orders from the customer then their business will shutdown because without selling goods and services the company cannot make a profit out of it. So in this example, you can imagine that a major part of any successful firm is covered by selling more and getting more orders.

## Column Explanation:

### OrderDetailID:

1. The database which is used for this assignment has two tables for orders one is ORDERS and ORDERDETAILS so first the data gets added into the ORDERDETAILSID table and then it is processed further.
2. Both the tables are linked to each other using the Column ORDERDETAILSID which is the primary key to make all the entries unique.
3. It also shows how many numbers of orders have been placed till now.

### OrderID:

1. OrderID is given to the customers to convincing in differentiating between all the orders placed by a single customer.
2. The customer may give the order in part, so it's good to give the same ordered for all the orders made by the same customer.

### **ProuctID:**

1. It's not always possible to write the whole list of product names whenever we want to perform any operation on the database so to keep it more simple we have given our own personal prouductID to each product.
2. This column prouductID is a link between different Product table and the orderDetails table.

### **Quantity:**

1. Whenever a customer places an order he will also mention the quantity of the product that how much he wants. So to store this data and using it for the purpose of processing the packaging we have created this column.
2. This data can be also used for business analysis for example what is the average quantity, highest and lowest quantize ordered by the customer, etc.

### **Conclusion:**

As we have observed from the above data that this table is linked with a few very important tables and without this table it might not be possible to create a complete working database. Without this table, there might be no transaction or no buying and selling and without buying and selling business cannot be conducted. In this table all the necessary details are already given but I personally think that a new column Offers should be added in the table in which if any offer is applied on any order then it will also show it.

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# ORDER TABLE

OrderID	CustomerID	EmployeeID	OrderDate	ShipperID
10248	90	5	7/4/1996	3
10249	81	6	7/5/1996	1
10250	34	4	7/8/1996	2
10251	84	3	7/8/1996	1
10252	76	4	7/9/1996	2
10253	34	3	7/10/1996	2
10254	14	5	7/11/1996	2
10255	68	9	7/12/1996	3

## Introduction:

The Orders table store the sales order's information including OderID, CustomerID, EmployeeID, OrderDate, and ShipperID. Each order has an individual row to append it's order data. This table is dependent on many tables from the database. Only one column is not connected which is OrderDate so this data directly get fetch or entered by the administrator.

This table is only used to get the data from all the diffrent tables about the Order so that all the actions can be performed in a synchronized manner.

## Column Explanation:

### OrderID:

1. It is a unique order id which is given to each confirm orders. And we can fetch the details of each order from orderDetails table using order Id.
2. Each customer gets a different order id but only one ID using that id they can order a variety of commodities according to their requirements.

### CustomerID:

1. Using this column, we can get the details of any customer in a very efficient way without writing any complex query.
2. Linking this column with orders table is very beneficial because using this we can easily cross check the and confirm the order details from the particular customer.



3. So that the package or order can be delivered without any delay or mistakes. Which can help to gain the customer confidence in company.

### **EmployeeID:**

1. EmployeeID column is used to identify that which order is handled by which employee. So that if any customer faces any issue regarding the product and orders then they can directly contact to the respective employee.
2. EmployeeID column is linked with Employees tables, so it becomes very handy and simple to get the full detail of any employee.

### **OrderDate:**

1. This is the only column which is not linked with any column and it's independent.
2. As the mention above it gives us exact date when the order got placed.
3. It is very necessary to deliver their order on time and this column helps a lot to the shipper and supplier to supply and ship the product on time so that there is no delay in delivery.

### **ShipperID:**

1. Each Shipper have a uniqueID using which the products can be easily assigned to each shipper for the shipment process become very simple and fast.
2. This Column is linked with the shippers table which includes information about ShipperID, ShipperName, and their phone number so that the customer can also contact the shipper to get information.

### **Conclusion:**

This table can be defined as a bridge between all the tables using the whole delivery and the supply system can be synchronized in a proper manner. If this table won't be there then the organization may have to suffer from some very critical and difficult problems which can end up shutting down the whole business. According to me this table is well managed and very well planned.

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# CATEGORIES TABLE

CategoryID	CategoryName	Description
1	Beverages	Soft drinks, coffees, teas, beers, and ales
2	Condiments	Sweet and savory sauces, relishes, spreads, and seasonings
3	Confections	Desserts, candies, and sweet breads
4	Dairy Products	Cheeses
5	Grains/Cereals	Breads, crackers, pasta, and cereal
6	Meat/Poultry	Prepared meats
7	Produce	Dried fruit and bean curd
8	Seafood	Seaweed and fish

## Introduction:

This table is one of the important part/table of this database. It explains the different types of category classifications using ID, Name & its specifications using the description column. It is connected to different tables using the primary key. This table also helps to do things easy for the product table as this table divides it into different categories.

## Column Explanation:

### Category ID:

- 1 Each item must be classified uniquely, obviously the product is unique by its quality but to store it and represent in the database we use a unique field of primary key which is named in this table as Category ID.
- 2 In this table, there are just 8 category types so some people won't prefer using Category ID, but let's assume if you have 1000 category types and at that time you will really get frustrated if you address them by names, so to keep things simple and unique for everyone you need to have the Category ID.
- 3 It also helps to find the products easily as when you order the product, it gets stored in the cart and with that the Category ID it has also gets stored as in all the information about the product gets stored and at the time of shipping and supplying it gets very much easy for the people to address the products by its Category ID.
- 4 It is connected to various tables in the database which makes it an important part of this process, as it is connected to the Products table which is connected to Shippers table and so on... and if the 'Category Name' is used instead of 'Category Id' then things would get really complicated.

- 5 At the time of delivery also if the product is damaged then it can be returned and then stored back to its belonging category.
- 6 It also helps to make the analysis at the end and predict that would this category id product be in demand or not depending on its sales.

### **Category Name:**

- 1 This column helps to tell what actually the Category ID is...
- 2 This helps to choose the product what buyers look for as in when the search for the products on the website they don't search for the Category ID, they search for the Name which the code takes that string into the database and looks for the similar type of name and prints it on the screen. So according to me it is used for the buyers to search for them.
- 3 Without Category Name it would be very difficult for the buyers to shop products as they would have to manually search for products by scrolling up and down, etc.
- 4 It also helps at the time of delivery as the delivery man would address the product using its name and not ID for not making things complicated with the customer.

### **Description:**

- 1 The description is important part, not for the ones who sell it as they already know what it does, but for the buyers who have no idea about the product and who look at it and buy it is because of the description as they find it very interesting and valuable.
- 2 Some-times people don't even know what category name they have to look for and they just type some description in the search which lands them up to their desired product that they are looking for.
- 3 Without this column the product is not much valuable for the new customers who have no idea about it.

### **Conclusion:**

This table seems to have more value, as the points discussed above are really worth thinking. Just imagine how time consuming would it be to just find a set of products without this table. How much time would it take for the customer if he wants multiple products of same category, he would have to spend his whole time just finding that

very product and probably can also give a bad review, which could really affect the reputation of the organization.

## PRODUCTS TABLE

ProductID	ProductName	SupplierID	CategoryID	Unit	Price
1	Chais	1	1	10 boxes x 20 bags	18
2	Chang	1	1	24 - 12 oz bottles	19
3	Aniseed Syrup	1	2	12 - 550 ml bottles	10
4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22
5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35
6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25
7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30
8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40

## Introduction

This table really an obvious table to be included in this database as it is what they need to display on the website for the customers to buy the stuff. This table also have various field to address the product to measure the quantity of the product, its price, to which table it is connected and its importance to connect it. This table helps to make the predictions about how many products were in demand in this this month and so on...

## Column Explanation:

### Product ID:

- 1 Product ID is a number assigned to every item of a particular category which is very much important for the analysis of the stock being bought and the one that is sold.
- 2 It is recognized as a unique product like if the delivery of done of this product and regardless of the delivery is good or bad as in whether the product arrived is in good condition or bad the product number is marked that, this very Product Id has been delivered to this this person and if the product is in bad condition then again the Product ID is noted then whole analysis is been done on that product and the other similar products, so that there may not be any more bad products delivered.
- 3 It helps to take the head count of the products stocked to tally and then make pay the amount to the supplier party.

- 4 Other than these, Product ID is connected to other tables also, such as 'Order Details' so that the ordered product is shipped to the buyer.
- 5 It helps to calculate the profit the company made by taking a count of the number of the products sold and if the count is less they may think over stocking the particular product again or not as its not more in demand so that the space also gets saved and they won't suffer any more losses.
- 6 Last but not the least, it is used in the database to so that specific range of products can be displayed if you wants its information by applying Product ID as a primary key.

### **Product Name:**

- 1 Product Name is used as the product is of some kind which has its name so to commonly address it product name is used.
- 2 It helps for the customers to look for the exact name of the product they search for and at the time of delivery the delivery man can address the product by its name.
- 3 Product Name is also used when big-big firms like Maruti order the tyres Ceat so the tyres can be said as the Product Name.
- 4 Also it is used at the time of shipping when the transporter guy comes for taking the delivery to the company from the shipping company they give a whole list of what all products names are shipped from the supplier.

### **Supplier ID:**

- 1 Supplier ID is a foreign key this is used to connect this table to the suppliers table so that things don't get complicated as there may be multiple suppliers who send a same product.
- 2 Then, it can be used for analysis of how many suppliers supplied how many products so that there can be a clear idea to the company on how good they trade with their suppliers.
- 3 If Supplier ID is not there in this table it would be very-very difficult for the company to find out which supplier supplied them which product and probably they could send the bill amount by mistake to some other supplier. This could also affect the reputation of the company paying amount.
- 4 If the product gets damaged then the product could be shipped to the correct supplier and the company may be can ask to exchange this product.

**Category ID:**

- 1 This is also a foreign key connected to the Category table used to link the categories to the specific products.
- 2 It is used to list the specific products to the same category so that if multiple orders arrive for the same product then the company won't have to search for the same products everywhere, they can find it in the same category addressed by the same Category ID.
- 3 If it is not added in this table then there would really be a mess of all the products dumped at one place which would be very time consuming when the company people would start to find the required product.

**Unit:**

- 1 It is used for addressing that how much quantity the product must it hold which is really important when it comes to buy it.
- 2 The costumer can't just shop the product without adding what type of unit it needs, let us say that the customer wants to buy a mug of 100ml so that 100ml is what the customer looks for when it finds the product, so that he/she can buy their desired unit product.
- 3 It also helps to stock the products of a same unit as there may be 20 boxes in 50 bags so to measure the quantity and store it in the warehouse there must be a unit.
- 4 The sub-unit is mentioned in the delivered product details so if there is any fault, the company people can check the unit products to find if there is any more damaged products.
- 5 It is really convenient for taking the products in bulk for the buyers from the suppliers since the cost also reduces and the company or buyer can make more profit by selling it online.
- 6 It also helps to predict the sales of what kind of quantity most customers prefer, so that next time the company can stock more quantity of particular products.

**Price:**

- 1 This column is what most of the customers look at when they first view the product, whether it is in the budget or not.

- 2 This column helps the company to calculate the profit they made, it may be the same price in which they purchased the product because sometimes the product does not do well in the sales and get stored for months in the warehouse, so to just make the space free for other products the company can sell them on sale.
- 3 This column also helps to predict what price might there be in coming months, like the drop in price or rise in price according to the prediction based on last years' sales so that the company can accordingly change price of the particular products.

## **Conclusion:**

Product table is the backbone of this database because if this table is not there, then there is no point of selling the product either. Price in this table is what attracts the customers, so it is very important for a company to set their prices in such a way that they can pull the customers towards them.

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## SHIPPERS TABLE

ShipperID	ShipperName	Phone
1	Speedy Express	(503) 555-9831
2	United Package	(503) 555-3199
3	Federal Shipping	(503) 555-9931

### Introduction:

Shippers table is for the Buyer Company who takes the delivery of the products from the Shippers that are shipped to them by the Suppliers. When the products arrive at the dockyard, the transporter takes all the products from the shipper to the company. The details of these shippers are also displayed on the products delivered to the customers.

### Column Explanation:

#### Shipper ID:

- 1 This is used as there are multiple shipping companies that the buyer company deals with, so to address them in a simplified way there is assigned a unique ID to all the shippers the company is in touch with.
- 2 Now in this table there are just 3 shipping companies but there may be some buyer companies that are in touch with multiple shipping companies.
- 3 Besides, it is used as a primary key to link it with other tables so that the company can make the analysis of which shipping company ships which products and the costs of shipping taken by the Shippers.
- 4 This column is necessary as there may be 2 Shippers with same name, so at the time of analysis there may arise a problem for the Company to do proper analysis.
- 5 Each and every order has a Shipper ID on it as this column is linked with the order table.
- 6 If there is any problem with the delivery the order is again shipped back to the company.

#### Shipper Name:

- 1 The shippers name is mentioned on the order product so that the customer can view, who shipped the product.



- 2 The shipper name is kept in the table as, at the time of writing the bill or the payment to the shippers, there must be the name specified.

**Phone:**

- 1 The phone is mentioned in the table as there may be times when there must be some emergency for the buyer company to place the orders or to cancel it, or if the company wants to find out the status of the product.
- 2 Sometimes this column is also mentioned on the order product so the customer or the delivery boy can contact the shipping company in case any problems.

**Conclusion:**

Shippers do the task very easy for the companies to make their products reach to their customers. Shipping is preferred as it is safe, affordable and profitable for travelling long distances.

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# SUPPLIERS TABLE

SupplierID	SupplierName	ContactName	Address	City	PostalCode	Country	Phone
1	Exotic Liquid	Charlotte Cooper	49 Gilbert St.	Londona	EC1 4SD	UK	(171) 555-2222
2	New Orleans Cajun Delights	Shelley Burke	P.O. Box 78934	New Orleans	70117	USA	(100) 555-4822
3	Grandma Kelly's Homestead	Regina Murphy	707 Oxford Rd.	Ann Arbor	48104	USA	(313) 555-5735
4	Tokyo Traders	Yoshi Nagase	9-8 Sekimai Musashino-shi	Tokyo	100	Japan	(03) 3555-5011
5	Cooperativa de Quesos 'Las Cabras'	Antonio del Valle Saavedra	Calle del Rosal 4	Oviedo	33007	Spain	(98) 598 76 54

## Introduction:

This table has all the information about the supplier, as the company must have a list of who they take the supply from of what all products also there is the address as to send them the supplies again in case they are somehow damaged. This table is also linked with other tables in this dataset. It is also used to do the analysis of how much did the supplies cost to the buyer company and what all products to stock more from which supplier and so on...

## Column Explanation:

### Supplier ID:

- 1 This column is used to have a unique representation of every supplier the buyer company is connected with as there may be 2 suppliers with similar names.
- 2 Sometimes if the product damages then it can be known that which supplier supplied them this product and accordingly the buyer company can act on it.
- 3 It helps to make predictions and to analyze which supplier is more profitable and which suppliers' products are in more demand.
- 4 Supplier ID is a primary key of this table and so it is linked with some more tables in this database for example it is linked with Products table.
- 5 This column really makes things easy as there are some times where the company has to stock the products of the same supplier together so they can stock it easily using Supplier ID.

### Supplier Name:

- 1 This column is some-times mentioned in the products that are delivered by the buyer company to their customers since the customers should know who the suppliers are.

- 2 Suppliers Name is really useful when the buyer company has to place some order or to pay it, as it does not work at that time with the ID so you need the name of the supplier.

**Contact Name:**

- 1 The contact name could be of some of the department of the Supplier Company.
- 2 It could be used to verbally place some small orders or to check the status of the ordered products, or to communicate for some other purposes.
- 3 It could also be used to make the supplier company aware of your product has been in the most demand or you have delivered some damaged products.

**Address:**

- 1 It is used as the buyer company must know from where the supply is coming from to them.
- 2 It is also useful if some of the products are damaged then the buyer company can place a return order back to the supplier company using its address.
- 3 At the time of ordering the products 'Purchase Order' address of the supplier company is mentioned.
- 4 Without this column major tasks of ordering product would be at a halt for a long time which could affect the performance of the company.
- 5 The sheet of the order is delivered by the local postman belonging to somewhere near the address mentioned in the 'Purchase Order'.
- 6 After travelling to different post offices this order sheet is reached to the local post office and from there the post man delivers the Purchase Order to the Supplier Company.

**City:**

- 1 This column is used as same as the Address column where the city name is mentioned in the 'Purchase Order'.
- 2 This is mentioned just after the address in the Purchase Order and when the Purchase Order comes from the shipping to specific country it comes to the post office of the specific city mentioned on it.

- 3 So to make this process of sending Purchase Order successful this City column is as important as any other location column.

### **Postal Code:**

- 1 This is used in the Purchase Order just after the usage of the City.
- 2 Based on the Postal Code the Purchase Order is posted to the specific areas form where it is again posted to the local post offices based on the address.

### **Country:**

- 1 It is used at the time of shipping the Purchase Order to the specific country mentioned.
- 2 After shipping it to the country it is further posted it to the mentioned city on the Purchase Order.

### **Phone:**

- 1 It is mentioned in the Purchase Order as well.
- 2 If there is any disturbance while shipping or posting it to the right address, then a call is made to the mentioned Phone number on the Purchase Order.
- 3 Besides this, if the buyer company wants to directly contact to the supplier then they can use this Phone to contact them.

### **Conclusion:**

This table gives us much knowledge about how the Posting is done to the desired destination. If any of the detail goes wrong then the entire process can become a failure and the company might suffer from some major or minor loss. As discussed, that this table is linked with some tables in this database and those tables are linked to many more tables so any minor flaw in any of the columns in any of the tables can cause a great harm to the data.

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# ERP DIAGRAM

