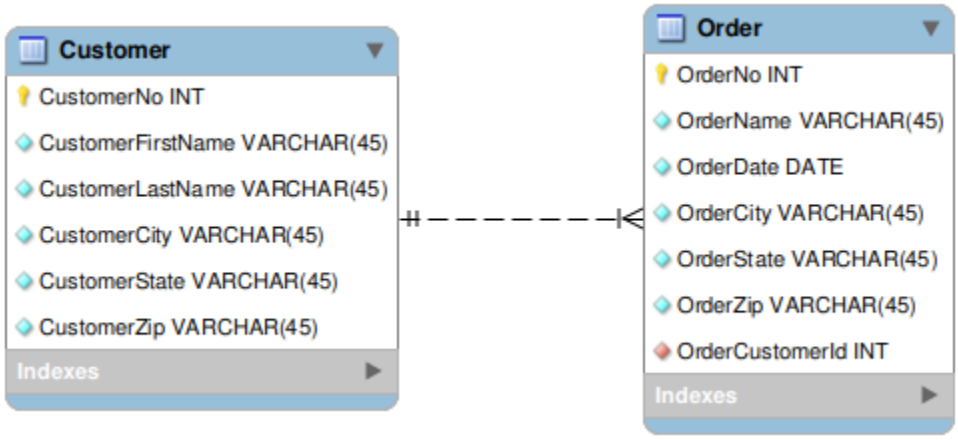
ER Diagram Assignment

- Draw an ERD containing the *Order* and *Customer* entity types connected by a 1-M relationship from *Customer* to *Order*. Choose an appropriate relationship name using your common knowledge of interactions between customers and orders. Define minimum cardinalities so that an order is optional for a customer and a customer is mandatory for an order. For the *Customer* entity type, add attributes *CustNo* (primary key), *CustFirstName*, *CustLastName*, *CustStreet*, *CustCity*, *CustState*, *CustZip*, and *CustBal* (balance). For the *Order* entity type, add attributes for the *OrdNo* (primary key), *OrdDate*, *OrdName*, *OrdStreet*, *OrdCity*, *OrdState*, and *OrdZip*. If you are using a data modeling tool that supports data type specification, choose appropriate data types for the attributes based on your common knowledge.

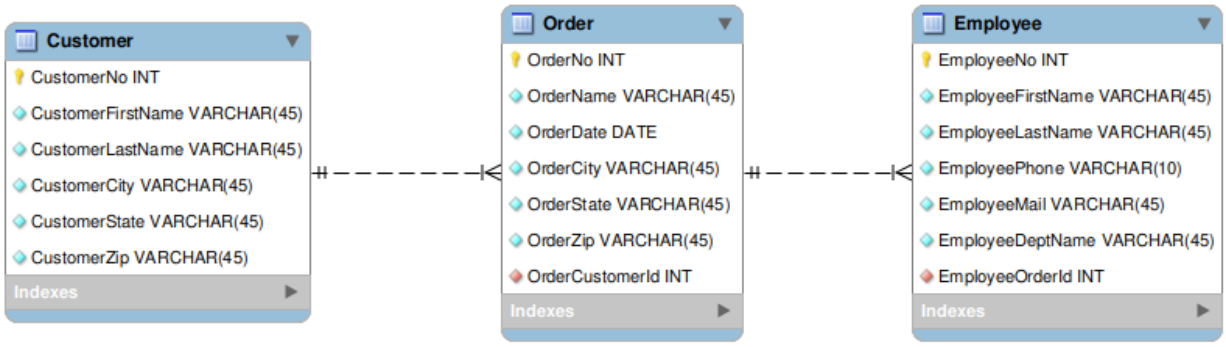
Solution:



- Extend the ERD from problem 1 with the *Employee* entity type and a 1-M relationship from *Employee* to *Order*. Choose an appropriate relationship name using your common knowledge of interactions between employees and orders. Define minimum cardinalities so that an employee is optional to an order and an order is optional to an employee. For the *Employee* entity type, add attributes *EmpNo* (primary key), *EmpFirstName*, *EmpLastName*, *EmpPhone*, *EmpEmail*, *EmpCommRate* (commission rate), and *EmpDeptName*. If you are using a data modeling tool that supports data type

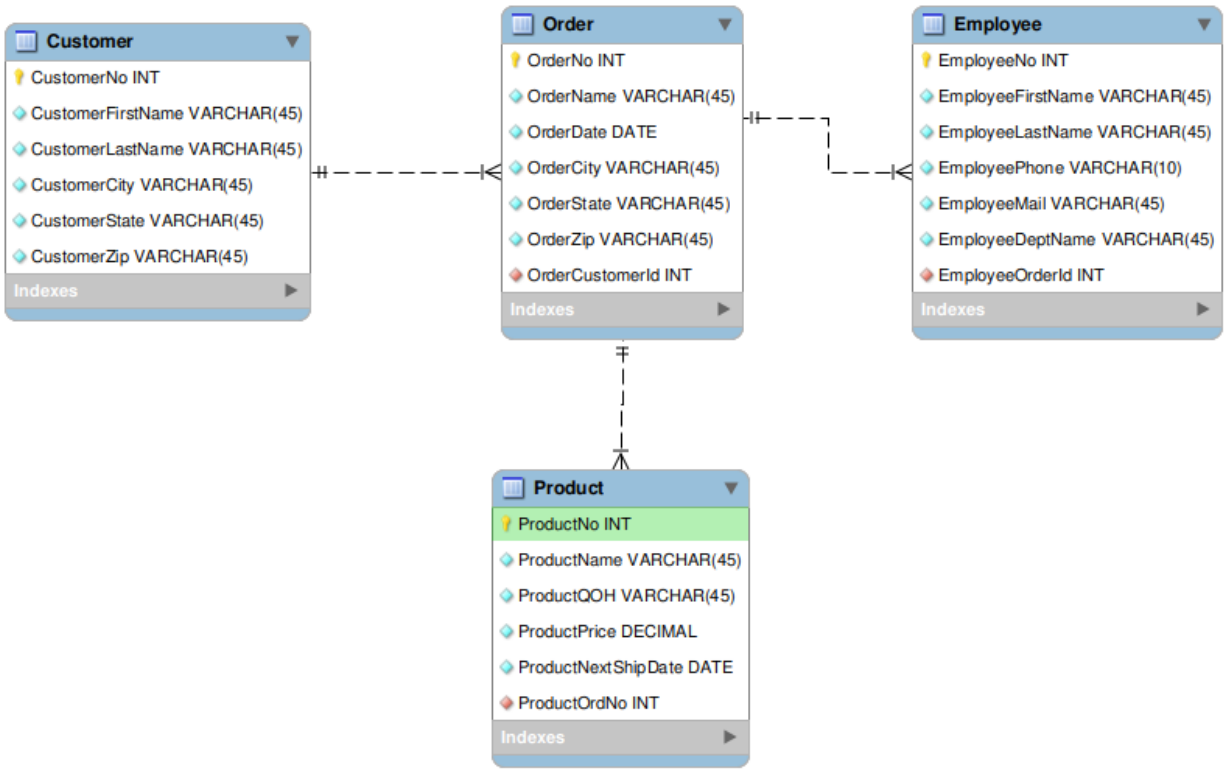
specification, choose appropriate data types for the attributes based on your common knowledge.

Solution:



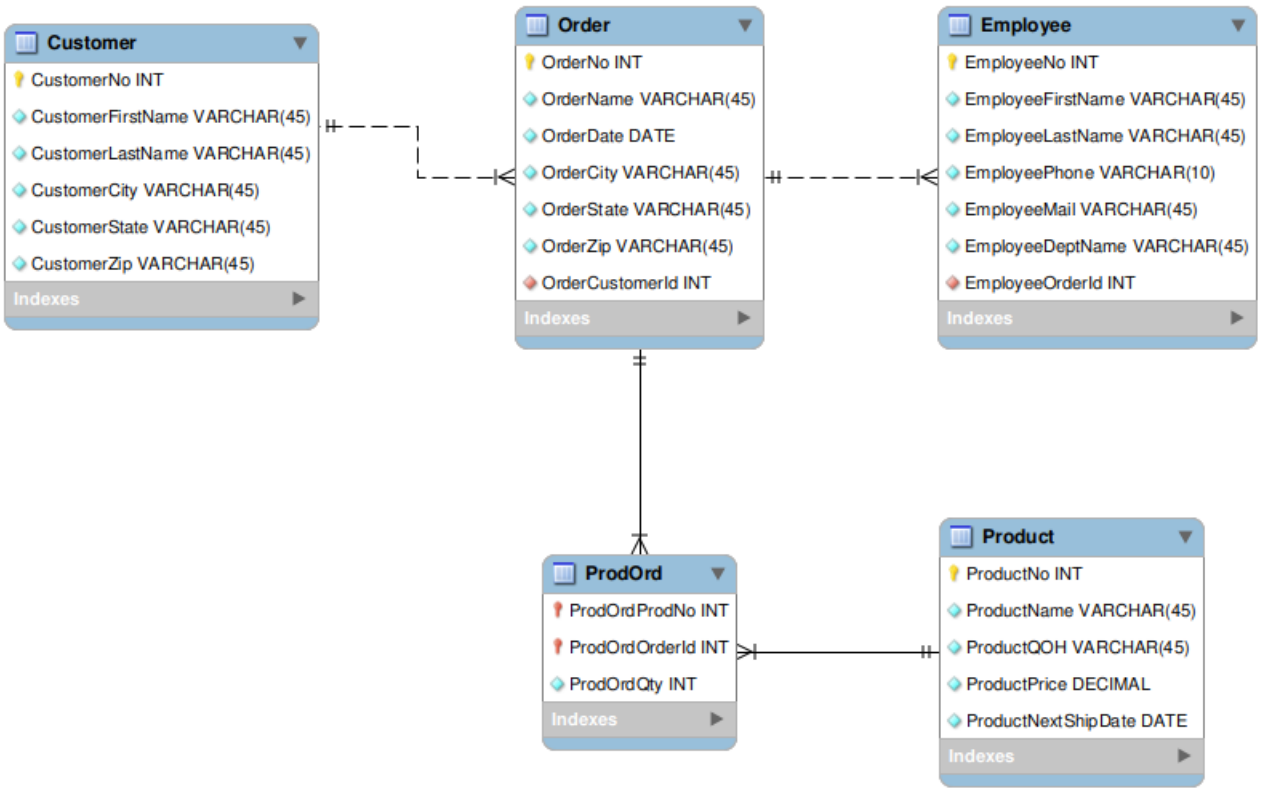
- Extend the ERD from problem 3 with the *Product* entity type and an M-N relationship between *Product* and *Order*. Choose an appropriate relationship name using your common knowledge of connections between products and orders. Define minimum cardinalities so that an order is optional to a product, and a product is mandatory to an order. For the *Product* entity type, add attributes *ProdNo* (primary key), *ProdName*, *ProdQOH*, *ProdPrice*, and *ProdNextShipDate*. For the M-N relationship, add an attribute for the order quantity. If you are using a data modeling tool that supports data type specification, choose appropriate data types for the attributes based on your common knowledge.

Solution:



- Revise the ERD from problem 4 by transforming the M-N relationship into an associative entity type and two identifying, 1-M relationships.

Solution:


Customer
CustomerNo INT
CustomerFirstName VARCHAR(45)
CustomerLastName VARCHAR(45)
CustomerCity VARCHAR(45)
CustomerState VARCHAR(45)
CustomerZip VARCHAR(45)
Indexes
Order
OrderNo INT
OrderName VARCHAR(45)
OrderDate DATE
OrderCity VARCHAR(45)
OrderState VARCHAR(45)
OrderZip VARCHAR(45)
OrderCustomerId INT
Indexes
Employee
EmployeeNo INT
EmployeeFirstName VARCHAR(45)
EmployeeLastName VARCHAR(45)
EmployeePhone VARCHAR(10)
EmployeeMail VARCHAR(45)
EmployeeDeptName VARCHAR(45)
EmployeeOrderId INT
Indexes
ProdOrd
ProdOrdProdNo INT
ProdOrdOrderId INT
ProdOrdQty INT
Indexes
Product
ProductNo INT
ProductName VARCHAR(45)
ProductQOH VARCHAR(45)
ProductPrice DECIMAL
ProductNextShipDate DATE
Indexes