1. Design a database diagram for a product orders database with four tables. Indicate the relationships between tables and identify the primary key and foreign key in each table. Explain your design decisions.

Customers-Orders(one to many) : each customer can place multiple order and each order belongs to one unique customer so the relationship is one to many.

Orders-Products(many to many): each order can have multiple product and each product can belong to multiple order . the relationship is many to many through OrderToItem pivot table.

Orders-OrderToItem(one to many): each order consist of multiple products throught OrderToItem

Products-OrderToItem(one to many):same as above

Customers: Primary key: CustomerID

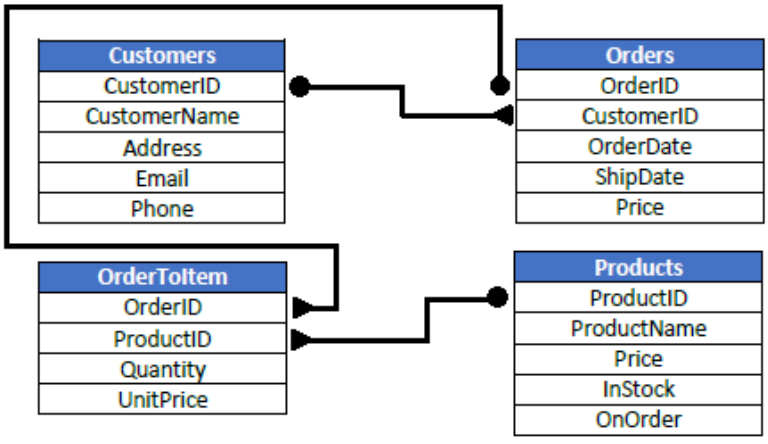
Orders: Primary key: OrderID, Foreign key: CustomerID (References Customers)

OrderToItem: Primary Key (Composite): OrderID & ProductID

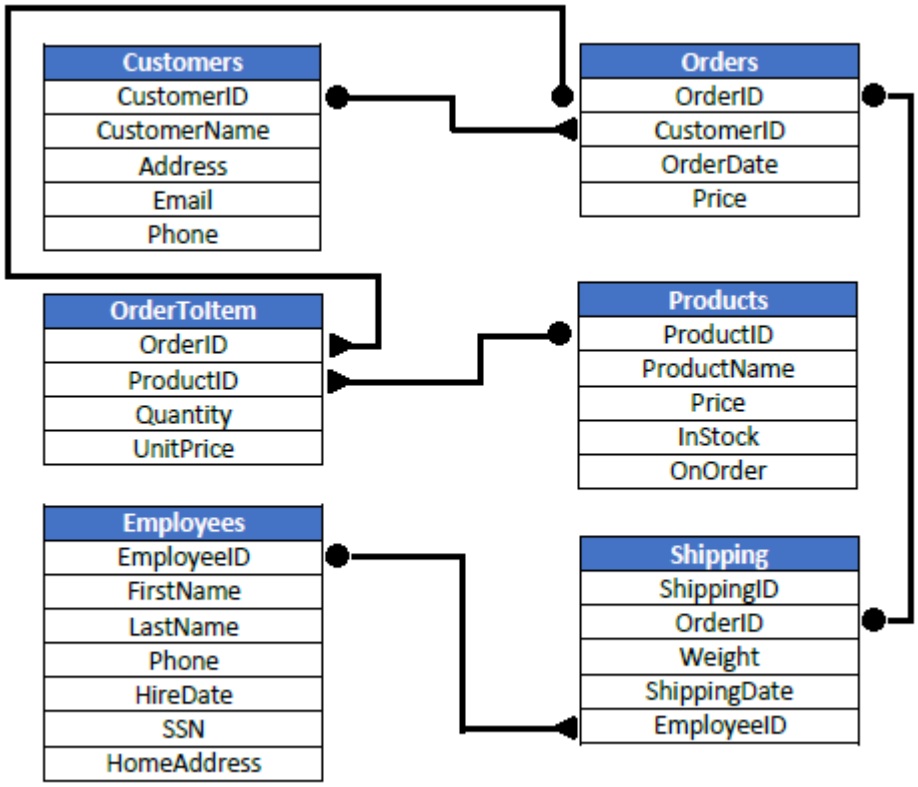
Foreign key: OrderID (References Orderes) – ProductID (References Products)

Products:

Primary key: ProductID



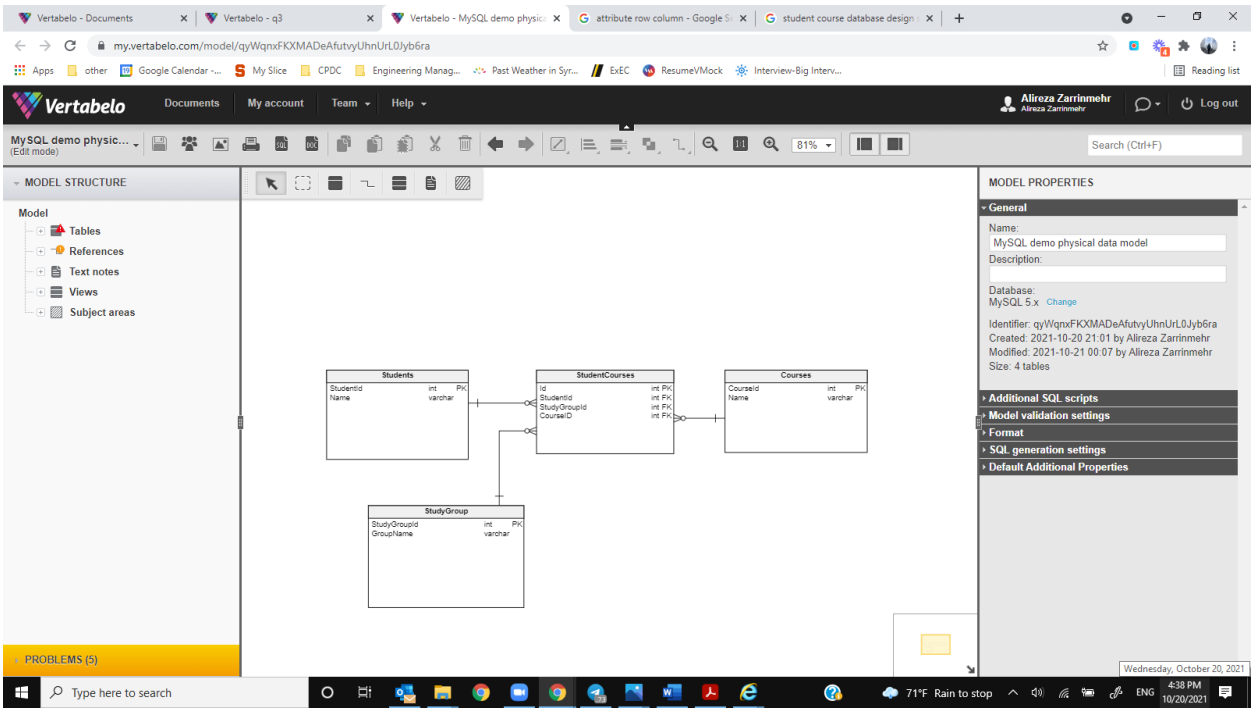
2. Add the two tables below into the design for question 1. Create additional tables and columns if necessary. Explain your design decisions.




Orders-Shipping (one to one) each order is shipped once, and shipping consist of one order

Employees-Shipping (one to many): each employee can do multiple shipping

3. Design a database diagram that allows students to be assigned study-group membership for one or more courses. Each course can have any number of students and each student can be in any number of courses. Create additional tables and columns, if necessary. Indicate the relationships between tables and identify the primary key and foreign key in each table. Explain your decisions.

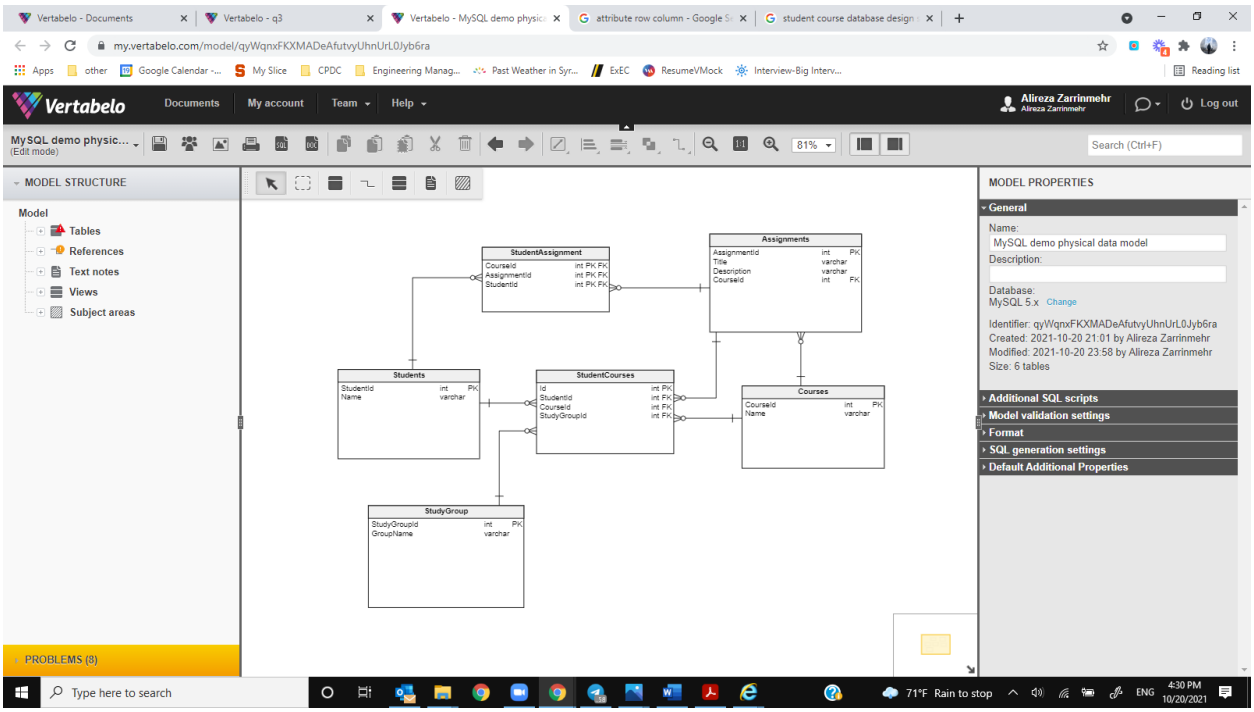



Each student can register in many courses, so the relationship is one to many

Each course can be thought to many students, so the relationship is one to many

Each study group can have different student who are studying different courses.

4.Modify your design for question 3 to keep track of the assignment for each student in each course. Each student can only be given one assignment in each course. Each course has a unique set of assignments for the students to complete. Create additional tables and columns if necessary. Indicate the relationships between tables and identify the primary key and foreign key in each table. Explain your decisions.




Each student can have one assignment in each course

Each course can have many assignments

To be able to connect student and assignment we created a new table containing:

CourseID which is Primary Key and Foreign Key

AssignmentID which is Primary Key and Foreign Key

StudentID which is Primary Key and Foreign Key

This way each student cannot have more than one assignment in each course but can have assignment in different courses

Thank you for your time,

Seyed