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S.NO: 127

CSCE 5350 SECTION 002

MID TERM 01

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: Kishan Kumar Zalavadia

+5

(2) (a) select s.name, c.title from students s natural join Enrollment e, courses c where e.course_id = c.course_id.

+8

(c) with merge (c_id, grade, department) as (select c.course_id, e.grade, c.department from courses c, enrollments e where c.course_id = e.course_id)
with avgGrade (department, avg-grade) as (select department, avg(grade) as avg-grade from merge groupby by department)
select max(avg-grade) from avgGrade.

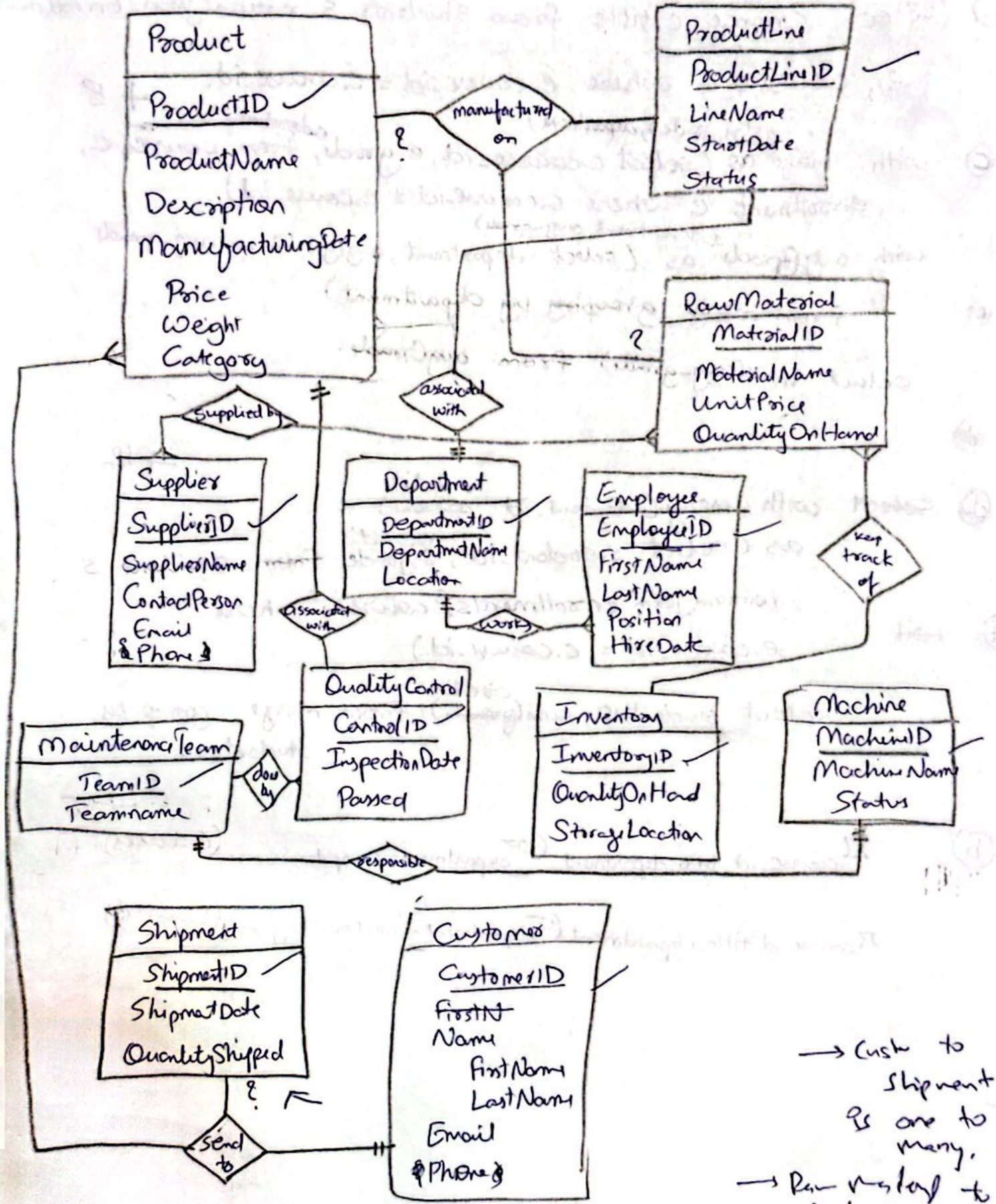
+12

(d) ~~Select~~ with merge(student_id, credit) as (select s.student_id, c.credit from student s natural join enrollments e, courses c where e.course_id = c.course_id)
select student_ID, sum(credit) from merge group by student_ID.

+5

(b) $\Pi_{course\_id, title, department}(\sigma_{department='Computer\ Science}(Courses)) \cap \Pi_{course\_id, title, department}(\sigma_{department='Electrical\ Engineering}(Courses))$

A)



→ Cust to shipment is one to many.

→ Raw material to product is many to many

Lishan Kumar Zalavadia

Relational model

→ Try to mention notation for FK

Product : ProductID, ProductName, Description, ManufacturingDate, Price, Weight, Category, ~~DepartmentID~~, ShipmentID

ProductLine : ProductionLineID, LineName, StartDate, Status, DepartmentID

RawMaterial : MaterialID, MaterialName, UnitPrice, QualityOnHand, InventoryID

Supplier : SupplierID, SupplierName, ContactPerson, Email, Phone

Department : DepartmentID, DepartmentName, Location

Employee : EmployeeID, FirstName, LastName, Position, HireDate, DepartmentID

MaintenanceTeam : TeamID, TeamName, MachineID

QualityControl : ControlID, InspectionDate, Passed, TeamID

Inventory : InventoryID, QuantityOnHand, StorageLocation

Machine : MachineID, MachineName, Status

Shipment : ShipmentID, ShipmentDate, QuantityShipped

Customer : CustomerID, FirstName, LastName, Email, Phone

manufactedOn : ProductID, ProductLineID, MaterialID

SuppliedBy : MaterialID, SupplierID

sendto : ProductID, ShipmentID, CustomerID

(C) ~~Phone from Supplier~~ +10

There are no multivalued attributes.

Phone in Supplier & Customer could be multivalued but since it is not given in question we assume it is not.

We can Normalize 'Sentto' table as follows.

Product : (ProductID, ProductName, Description, ManufactwingDate, Price, Weight, Category, shipmentID)

Shipment : (ShipmentID, ShipmentDate, QuanlityShipped, ~~customerID~~)

Customer : (CustomerID, Firstname, lastname, email, phone)

sendto (shipmentID, customerID)

Because shipmentID depends on customerID.

(D) 2) select * from Product where shipmentID = 10 +10

~~from product P, shipment S~~ where p.~~productID~~

1) select shipmentID, ShipmentDate, QuanlityShipped, C.customerID, Firstname, Lastname, email, phone +10

from Shipment S ~~natural~~ join customer C where

S.customerID = C.customerID

(Or)

select * from Shipment natural join customer.