King Fahd University of Petroleum & Minerals College of Computer Sciences and Engineering

Information and Computer Science Department
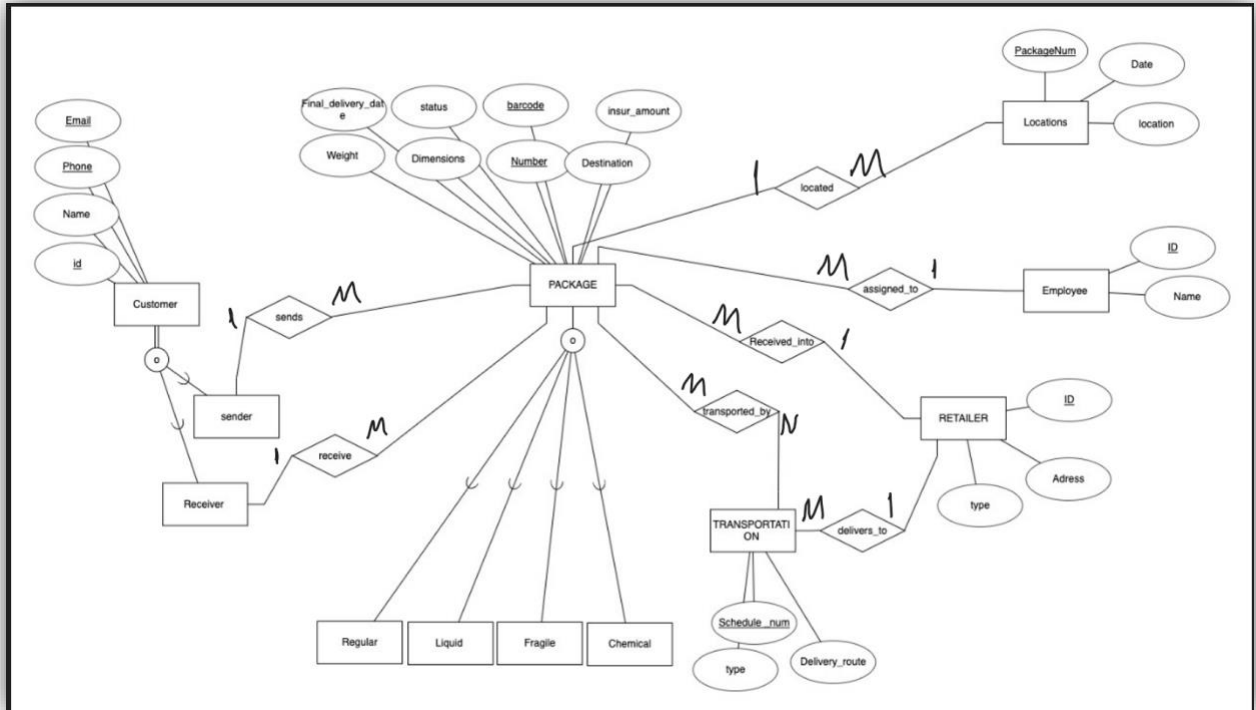
ICS 321

Phase I
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EER

Relational Schema

Package

barcode	number	destination	insur_amount	dimensions	status	final_delivery_date	weight	EID	RID	SenderID	ReciverID

Customer

ID	name	senderFlag	reciverFlag	Phone	Email

Locations

packageNum	date	location	Pnumber	Pbarcode

Employee

ID	name

Retailer

ID	Address	Type

Transportation

schedule_num	type	delivery_route	RID

Transported_By

Tschedule_num	Pnum	Pbarcode

Regular

Pnumber	Pbarcode	info

Liquid

Pnumber	Pbarcode	info

Chemical

Pnumber	Pbarcode	info

Fragile

Pnumber	Pbarcode	info

Constraints and Business rules

a) The packages are categorized as Regular, Fragile, Liquid, Chemical etc.

b) The status of the packages is as follows in transit, delivered, lost or damaged.

c) The value and insurance amount of the package is maintained as well as the payment to the company based on weight as cost for delivering the package.

d) Any company employee or customer should be able to search their packages by their ID, category, city and delivery date.

e) The movement history including the current place of the package in transit must be produced upon request.

f) The system should be able to retrieve information of packages not delivered, damaged or lost.

g) The system should identify fines for delayed packages. For lost or damaged packages, the insurance amount is delivered to the customer instead of the package.

h) The system should be able to send notifications whenever the packages become available for delivery as well as if they are delayed.

i) Each package will have a unique barcode that the system will be able to read.

Tools & Resources

- https://erdplus.com/