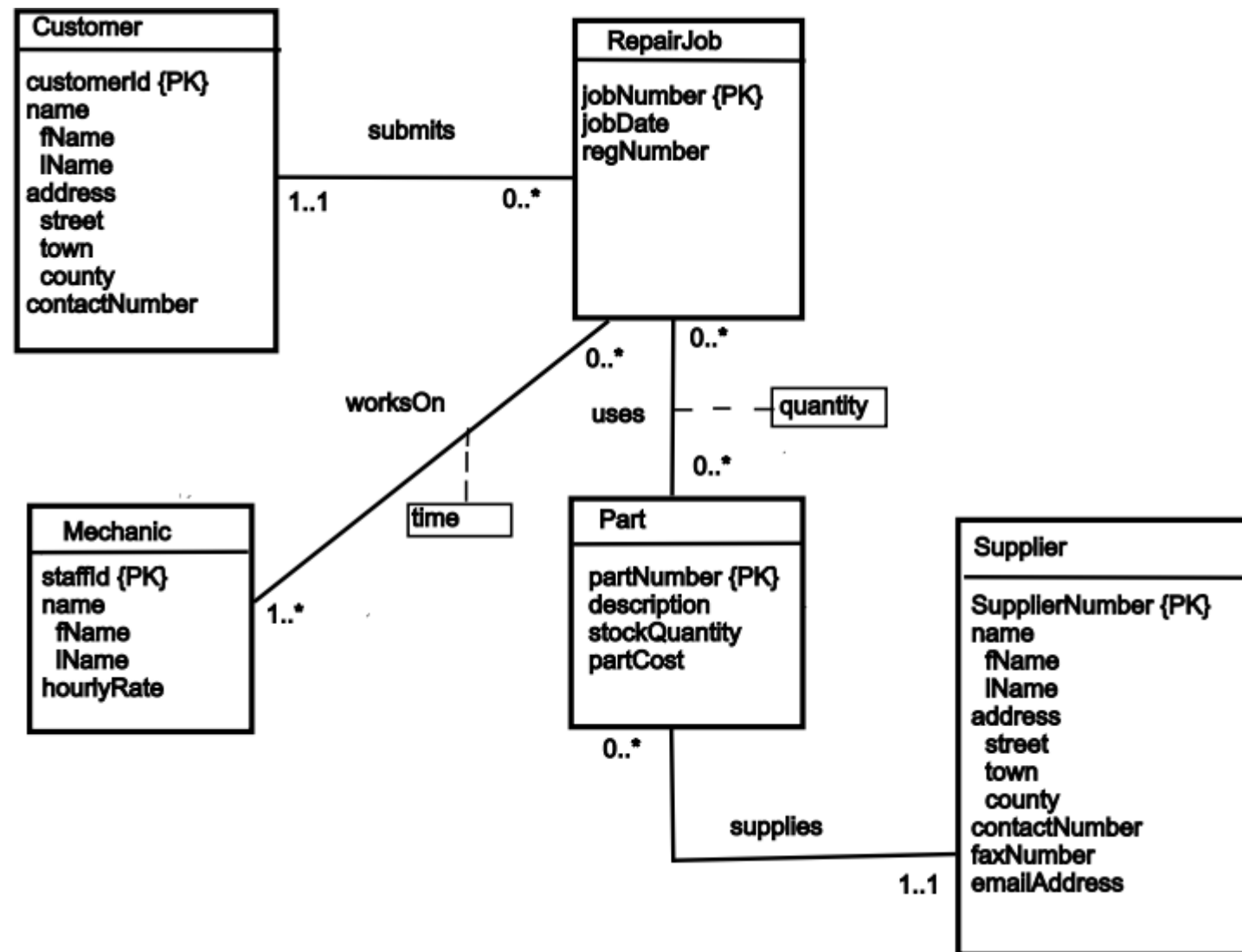


Worked Example

Watch video: <https://youtu.be/gcYKGV-QKB0?t=1h0m05s>

Worked Example



Worked Example

- Transform the above Conceptual Data Model into a set of relations.

Worked Example

- Firstly, we will map all the entity types to a set of relations:

Worked Example

- Firstly, we will map all the entity types to a set of relations:
Customer(customerId, fName, lName, street, town, county, contactNumber)
Primary key customerId

Part(partNumber, description, stockQuantity, unitPrice)
Primary key partNumber

Supplier(supplierNumber, fName, lName, street, town, county, contactNumber, faxNumber, emailAddress)
Primary key supplierNumber

RepairJob(jobNumber, jobDate, regNumber)
Primary key jobNumber

Mechanic(staffId, fName, lName, hourlyRate)
Primary key staffId

Worked Example

- Secondly, we will map the relationships:

Worked Example

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 - *submits* relationship
 - The 'submits' relationship between Customer and Repair Job is 1:* and optional on the Customer side. Since this is a 1:* relationship we post the primary key from the 'one' side into the table on the 'many' side as a foreign key.

Worked Example

- Secondly, we will map the relationships:
 - *submits* relationship
 - The 'submits' relationship between Customer and Repair Job is 1:* and optional on the Customer side. Since this is a 1:* relationship we post the primary key from the 'one' side into the table on the 'many' side as a foreign key.

Repair Job (jobNumber, jobDate, regNumber, customerId)

Primary Key jobNumber

Foreign Key customerId references Customer(customerId)

Worked Example

- *supplies* relationship
 - The 'supplies' relationship between Supplier and Part is 1:* and optional on the Supplier side. Since this is a 1:* relationship we post the primary key from the 'one' side into the table on the 'many' side as a foreign key.

Worked Example

- *supplies* relationship
 - The 'supplies' relationship between Supplier and Part is 1:* and optional on the Supplier side. Since this is a 1:* relationship we post the primary key from the 'one' side into the table on the 'many' side as a foreign key.

Part (partNumber, description, stockQuantity, unitPrice, supplierNumber

Primary Key partNumber

Foreign Key supplierNumber references

Supplier(supplierNumber)

Worked Example

- *worksOn* relationship
 - The 'worksOn' relationship between Mechanic and Repair Job is $^*:^*$ and optional on the Mechanic side. Since this is a $^*:^*$ relationship, we create a new relation. We post the primary key values from both tables in the relationship into this new relation as foreign key values. The relationship attribute is also placed in this new table.

Worked Example

- *worksOn* relationship
 - The 'worksOn' relationship between Mechanic and Repair Job is $^{*}:^{*}$ and optional on the Mechanic side. Since this is a $^{*}:^{*}$ relationship, we create a new relation. We post the primary key values from both tables in the relationship into this new relation as foreign key values. The relationship attribute is also placed in this new table.

worksOn (staffId, jobNumber, time

Primary Key staffId, jobNumber

Foreign Key staffId references Customer(staffId)

Foreign Key jobNumber references Repair Job(jobNumber)

Worked Example

- *uses* relationship
 - The 'uses' relationship between Repair Job and Part is $^*:^*$ and optional on both sides. Since this is a $^*:^*$ relationship, we create a new relation. We post the primary key values from both tables in the relationship into this new relation as foreign key values. The relationship attribute is also placed in this new table.

Worked Example

- *uses* relationship
 - The 'uses' relationship between Repair Job and Part is $^{*}:^{*}$ and optional on both sides. Since this is a $^{*}:^{*}$ relationship, we create a new relation. We post the primary key values from both tables in the relationship into this new relation as foreign key values. The relationship attribute is also placed in this new table.

uses (jobNumber, partNumber, quantity

Primary Key jobNumber, partNumber

Foreign Key jobNumber references Repair Job(jobNumber)

Foreign Key partNumber references Part(partNumber)

Worked Example

- ***Full set of tables:***

Customer (customerId, fName, lName, street, town, county, contactNumber)

Primary Key: customerId

Repair Job (jobNumber, jobDate, regNumber, customerId)

Primary Key jobNumber

Foreign Key customerId references Customer(customerId)

Mechanic (staffId, fName, lName, hourlyRate)

Primary Key staffId

Worked Example

Supplier (supplierNumber, fName, lName, street, town, county, contactNumber, faxNumber, emailAddress)

Primary Key supplierNumber

Part (partNumber, description, stockQuantity, unitPrice, supplierNumber)

Primary Key partNumber

Foreign Key supplierNumber references

Supplier(supplierNumber)

Worked Example

worksOn (staffId, jobNumber, time)

Primary Key staffId, jobNumber

Foreign Key staffId references Customer(staffId)

Foreign Key jobNumber references Repair Job(jobNumber)

uses (jobNumber, partNumber, quantity)

Primary Key jobNumber, partNumber

Foreign Key jobNumber references Repair Job(jobNumber)

Foreign Key partNumber references Part(partNumber)