Practical 1

Database Design I

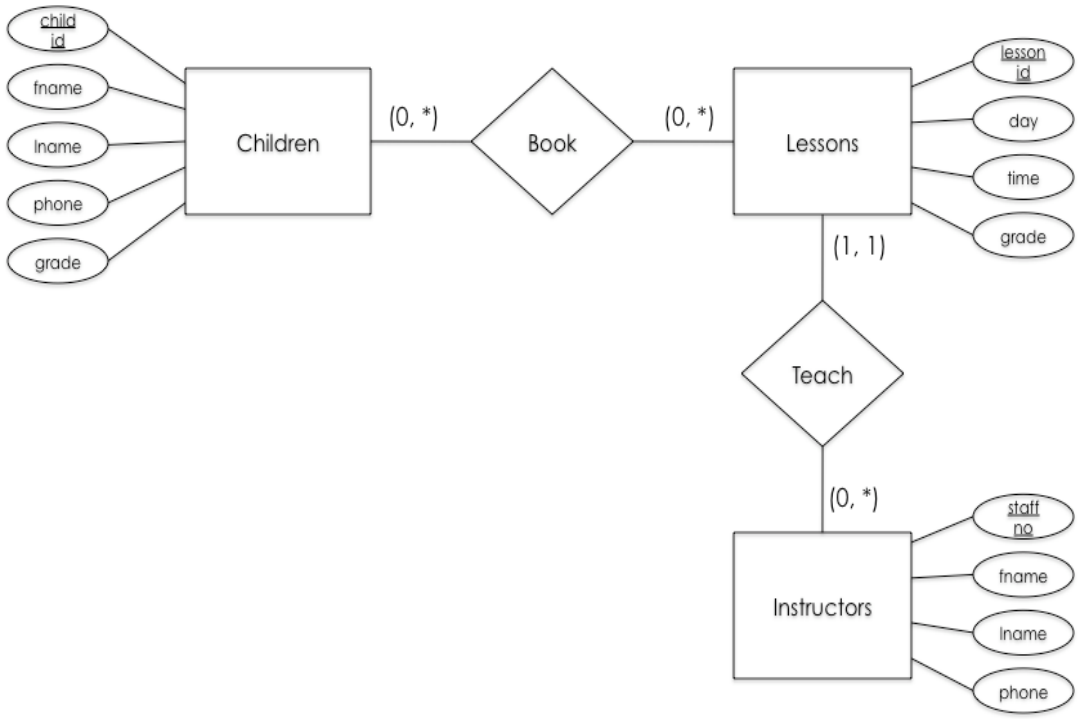
The aim of this practical is to give practice in designing databases using an Entity-Relationship diagram.

Lab Completion

Show the demonstrator your ER diagrams and answers to the review questions for feedback. Then get your ER diagrams marked by the end of your lab session or the end of the catchup lab session on Friday.

Exercises

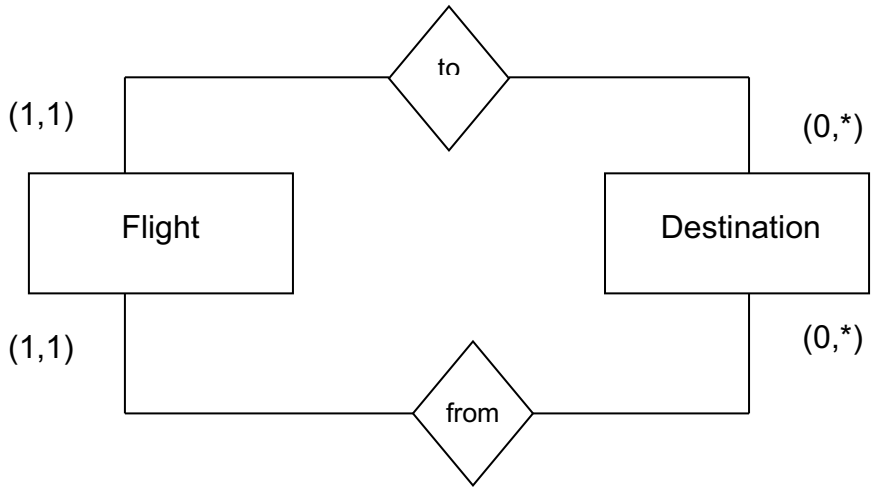
1) A draft ER diagram for the swimming lessons system is given below:



Extend the above ER model so that the local pool can record details about the qualifications that their instructors hold. An instructor may have no qualifications, but most will hold several qualifications. Each qualification can belong to one and only one instructor. The local pool would like to record the name of the qualification, the date it was awarded and the name of the institution that awarded the qualification. All qualifications can be uniquely identified by the name of the qualification.

Clearly indicate keys, attributes and cardinality constraints in (min,max) notation.

2) A database is required for a travel agency, which will keep records of airlines and their flights to destinations. Each airline is assigned a unique two-letter code, which is kept along with its name, home city and country, main phone number. Each destination has a name, a country and a unique three-letter airport code. Flights go always between two destinations. A flight has a unique number and a price. A draft ER diagram is given below:



Extend the above ER model for the following: *"A flight can be offered by several airlines; each airline can offer several flights."*

Clearly indicate keys, attributes and cardinality constraints in (min,max) notation.

Practical 1 Review Page

Name: ID:

1) State the meaning of the following terms:

An Entity:

A Relationship:

Cardinality:

2) What does an attribute which is underlined on an ER diagram indicate?

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