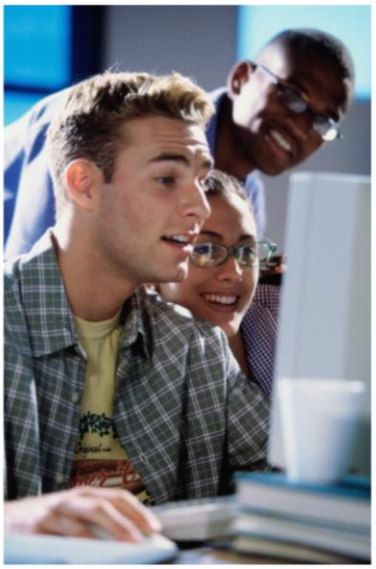
ORACLE

Academy

Database Design

3-2

ER Diagramming Conventions



ORACLE Academy

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

It is possible that more than one relationship can exist between entities.
Example: different relationships exist between person and class (attend, teach, write).

Objectives

- This lesson covers the following objectives:
  - Construct ER diagram components that represent entities, attributes and relationships according to diagramming conventions

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

Purpose

- People speak different languages throughout the world, but some signs are understood globally
- Guess the meaning of these signs

International Signs

1 2 3 4

5 6 7

ORACLE Academy

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

Purpose

- How well did you do?
- Did you guess the meaning of most signs?

International Signs

1 2 3 4 5 6 7

Key:

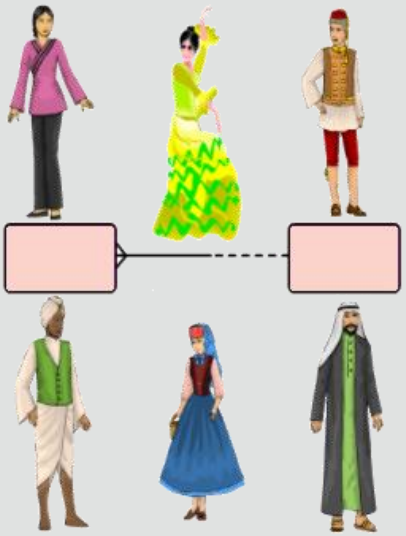
1. Crosswind
2. Roundabout
3. No entry for vehicles carrying more than a certain quantity of explosives or readily inflammable substances
4. Lane for slow vehicles
5. Stop in Brazil
6. Low clearance
7. Mr. Yuk

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

Shared Convention

- It is efficient to communicate information in a way that can be easily understood by many people
- ER diagramming is like that – you may say or write things differently because of the way you speak, your accent, and so on, but everyone draws ER diagrams according to the same conventions

A Shared Convention



ORACLE Academy

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

Another example is International Sign Language – it is another way for people to communicate without even talking out loud!

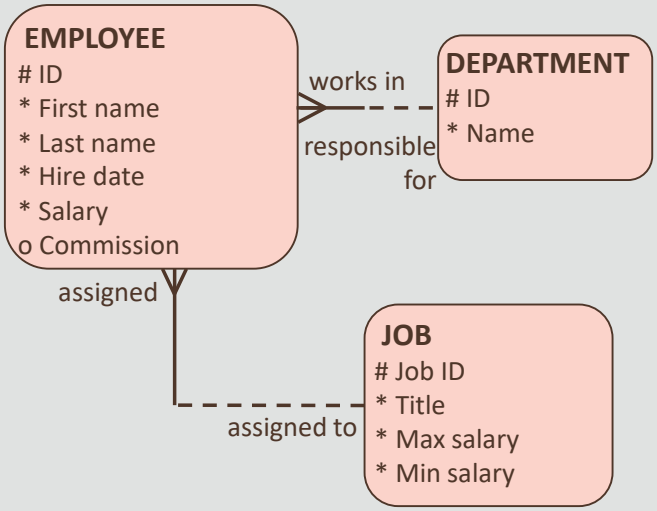
HR System: EMPLOYEEs, JOBs, and DEPARTMENTs

- "We need to store data about each of our company's employees. We need to track each employee's first name, last name, hire date and salary. For each employee on commission, we also need to track his/her potential commission"
- "Each employee is allocated a unique employee number"
- "Our company is divided into departments. Each employee reports to a department - for example, accounting, sales, or development"

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

HR System: EMPLOYEEs, JOBs, and DEPARTMENTs

- "We need to know the department responsible for each employee. Each department has a unique number"
- "All employees hold a job, and we keep track of the job title, max and min salary for each job
- Every job has a unique job id"

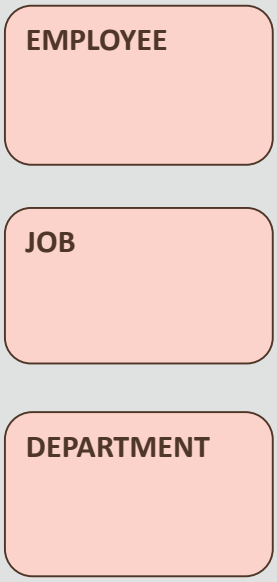


ORACLE Academy

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

ER Drawing Conventions

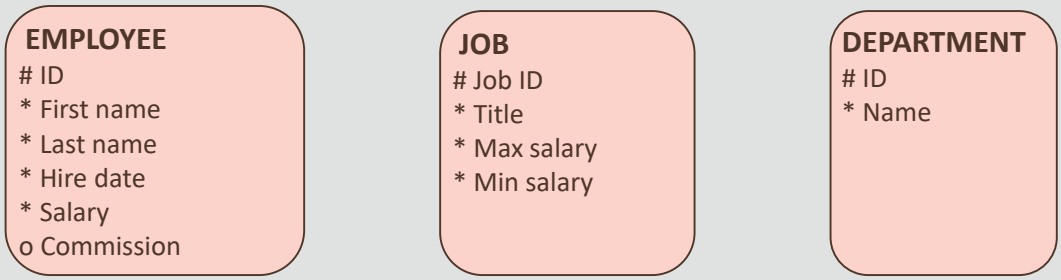
- Entities are represented by softboxes
- Entity names go in the softboxes
- Entity names are always singular and written with all capital letters



Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

Drawing Conventions

- Attributes are listed under the entity names
  - Mandatory attributes are marked with an asterisk: “*”
  - Optional attributes are marked with a circle: “o”
  - Unique identifiers are marked with a hash sign: “#”

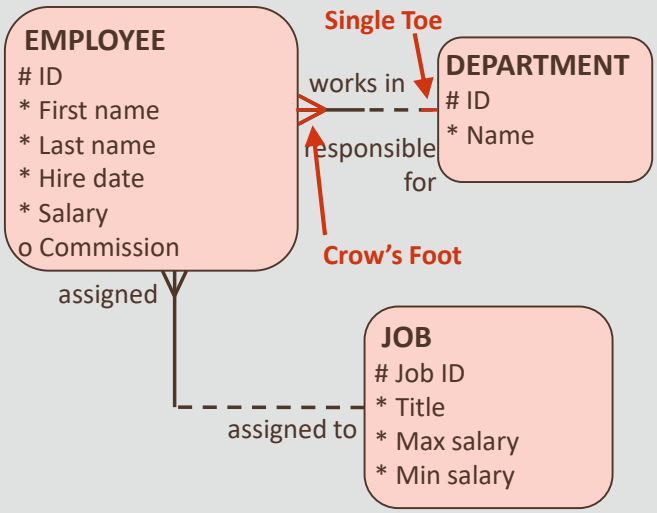


Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

Any attribute that is part of the UID is always mandatory.
It is convention to draw it with only the “#” symbol before the name. The “*” is not required because it is implied by the Unique Identifier constraint

Drawing Conventions

- Relationships are lines that connect entities
- These lines are either solid or dashed
- These lines terminate in either a “single toe” or a “crow’s foot” at the end of each entity
- You will learn the specific details about relationship lines in the next lesson



ORACLE Academy

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

The rules of how to draw relationships will be covered in more detail in the next lesson.

Terminology

- Key terms used in this lesson included:
  - Softbox
  - ER Diagramming
  - Crow's Foot
  - Single Toe

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

Summary

- In this lesson, you should have learned how to:
  - Construct ER diagram components that represent entities and attributes according to diagramming conventions

Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

ORACLE
Academy