Answers for Week 6 Tutorial Activities – Business Rules

Case 1

A company has a number of employees. The attributes of employee include employee_id (identifier), name, address, and birthdate. **The company also has several projects.** attributes of project include project_id (identifier), project_name, and start_date [1]**Each employee may be assigned to one or more projects, or may not be assigned to a project.** [2]**A project must have at least one employee assigned and may have any number of employees assigned.** [3]**An employee's billing rate may vary by project,** and the company wishes to record the applicable billing rate (billing_rate) for each employee when assigned to a particular project.

1. 1 employee may be assigned to 1 or more project
2. A project must have one employee assigned to it
3. A employee billing rate varies depending on the project

Case 2

Invoice

From the sample grade report below, what business rules can you deduce? <u>Assume that each course is taught by one instructor.</u>

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MILLENIUM COLLEGE
GRADE REPORT
FALL SEMESTER 200X

</div>

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COURSETITLE		INSTRUCTOR NAME	INSTRUCTOR LOCATION	GRADE
IS350	Database Mgt	Codd	B104	A
IS465	System Analysis	Parsons	B317	B

Based on your current enrolment, what other assumptions can be made?

Rules

Each course can be taught by 1 instructor
An instructor can teach many courses
    Each student can be enrolled in many
    courses Each course can have many
    students
Each student can obtain a grade for each course

Case 3

Firm

The firm has a number of sales offices in several states. Attributes of sales office include Office_Number (identifier) and Location.
Each sales office is assigned one or more employees. Attributes of employee include Employee_ID (identifier) and Employee_Name. **An employee must be assigned to only one sales office.**
For each sales office, there is always one employee assigned to manage that office.
An employee may manage only the sales office to which he or she is assigned.
The firm lists property for sale. Attributes of property include Property_ID (identifier) and Location. Components of Location include Address, City, State and Zip_Code.
Each unit of property must be listed with one (and only one) of the sales offices.
A sales office may have any number of properties listed or may have no properties listed.
Each unit of property has one or more owners. Attributes of owners are Owner_ID (identifier) and Owner_Name. **An owner may own one or more units of property. Owners own a percentage of a property.**

1. **1 sales office can be assigned 1 or more employees**
2. **1 employee can only be assigned one sales office**
3. **Each sales office has one employee managing it**
4. A manager must be an employee assigned to a sales office
5. **A firm has many properties for sales**
6. 1 unit of property must be listed one office only
7. Each property can have one or more owners
8. Each owner can have one or more units of property
9. Owner can own a percentage of a property

Case 4

Courts

Identify the business rules that are pertinent to a courts database below.

Scenario

An attorney is retained by one or more clients for each case.
  Attributes of attorney are: attorney_id, name, address, city, state, zip_code,
  specialty (may be more than one), bar (may be more than one).
A client may have more than one attorney for each case.
  Attributes of client are client_id, name, address, city, state, zip_code, telephone,
  date of birth.
A client may have more than one case.
Attributes of case are case_id, case_description, case_type.
An attorney may have more than one case.
Each case is assigned to one and only one court.
Attributes of court are court_id, court_name, city, state, zip_code.
Each court has one or more judges assigned to it.
Attributes of judge are judge_id, name, years in practice,
Each judge is assigned exactly to one court.

View all rules for courts. [+] view the answer

1. An attorney is retained by many clients for each case
2. A client can have many attorney for each case
3. A client can have many cases
4. An attorney may have many cases
5. A case is assigned to one court
6. (Implied) A court can have many cases
7. Each court has many judges
8. Each judge is assigned to one court

Case 5

Persons in an organization are identified by a PERSON-ID and have a SURNAME, FIRST- NAME, and a D.O.B. The person is responsible for orders, which are identified by an ORDER- NO and have an ORDER-DATE, DESCRIPTION, and a QUOTED-PRICE. Each order is placed by one customer but a customer can place many orders. This organization manufactures the order in a serious of jobs. The person responsible for an order makes formal requests to sections to carry out these jobs. The requests are identified by a REQUEST-NO. They nominate a START-DATE and an END-DATE for each request. A number of jobs can be created by a section in response to a request. Each job is identified by a JOB-NO and has a COST. All jobs for one request go to the same section, which is identified by SECTION-ID and has one MANAGER. Each job uses a QTY-USED of one or more materials. Materials are identified by MAT-ID and have a MAT-DESCRIPTION.

1. Each order is placed be one customer
2. A customer can place many orders
3. For an order makes formal requests
4. Each request have many jobs
5. One section can have many jobs
6. Each job uses one or more materials
7. One job can be assigned one section