Data Management and Analysis
Unit 2
ER MODEL EXCERCISES

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THE ENTITY-RELATIONSHIP MODEL

EXCERCISES - PART 1

Represent the following realities using the constructs of the Entity-Relationship model.

In a zoo there are animals belonging to a familia and having a certain age; each *familia* is located in a sector (having a name) of the zoo.

A car rental agency has a fleet of cars each of which has a license plate, a color and is part of a category; for each category there is a rental fee.

A record company produces records with a code and a title; each record is recorded by one or more singers, each of whom has a name, an address and, someone, a stage name.

THE ENTITY-RELATIONSHIP MODEL

EXCERCISES - PART 2

Represent the following classes of objects using, where appropriate, the generalization construct of the EntityRelationship model. Indicate in the various cases, the attributes of the various entities and the type of generalization, solving the cases of overlap:

- The employees of a company are divided into executives, programmers, analysts, project managers and secretaries.
- There are analysts who are also programmers.
- Project managers must be managers.
- Employees have a code, a first name and a surname.
- Each category of employee has its own basic salary.
- Every employee, except the managers, has a working schedule.

THE ENTITY-RELATIONSHIP MODEL

EXCERCISES - PART 3

Represent the following classes of objects using, where appropriate, the generalization construct of the EntityRelationship model.

Indicate in the various cases, the attributes of the various entities and the type of generalization, solving the cases of overlap/superimposed:

A car manufacturer produces vehicles that can be cars, motorcycles, trucks and tractors. Vehicles are identified by a chassis number and have a name (for example, Punto), a displacement and a color. Cars are divided into utilitaries(length under two and a half meters) and family (length over two and a half meters). They are also classified according to displacement: small (up to 1200 cc), medium (from 1200 cc to 2000cc) and large displacement (above 2000 cc). Motorcycles are divided into scooters (displacement under 125 cc) and motorcycles (displacement above 125 cc). Trucks have a weight and can have a trailer.

THE ENTITY-RELATIONSHIP MODEL

EXCERCISES - PART 4

Represent the following classes of objects using, where appropriate, the generalization construct of the EntityRelationship model.

Indicate in the various cases, the attributes of the various entities and the type of generalization, solving the cases of overlap/superimposed :

An airline offers flights that have a number that identifies the route (for example, Rome-Milan), a date (March 25, 2001), a departure time (8:00 am) and an arrival time (9:00 am), a departure airport and a destination airport.

There are domestic and international flights. International flights can have one or more stopovers.

Of the past flights the actual time of departure and arrival is of interest (for example, with reference to the aforementioned flight, 8:05 and 9:07 am), of the future ones the number of seats available is of interest

Try It!