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Database Management Systems

Airplane Example: E-R Diagrams

1. List each entity with attributes, showing the primary key of each.

Airplane:

* **Registration Number (PK)**

Model:

* **Model Number (PK)**
* Capacity
* Weight

Owner:

* Name
* Contact Phone Number
* **Name + Contact Phone Number (PK)**

Test:

* Date
* Number of Hours
* Percent Score

Technician:

* Name
* **SSN(PK)**
* Address
* Salary
* Phone Number

1. List all relationships with two entities and an English phrase. There are no ternary relationships. For each relationship state whether it is 1:1, 1:\*, or \*:\*.

**An airplane has a model.** 1:\*

**A technician is an expert of a model.** 1:\* OR 0:\* “Each technician is an expert on one or more plane models” \*:\* because multiple technicians can be an expert on the same model?

**An owner owns an airplane.** This would be a 1:\* relationship, as one owner could own multiple airplanes at the airport.

**A technician conducts a test on an airplane.** This is a ternary relationship, as followed:

1:1, one technician conducts one test. 1:\* 1 test one multiple planes OR \*:\* Multiple tests can be ran on multiple planes.

1. Draw an ER diagram. You should include entities (rectangles), relationships, arrows and multiplicities but you can omit the attributes.

