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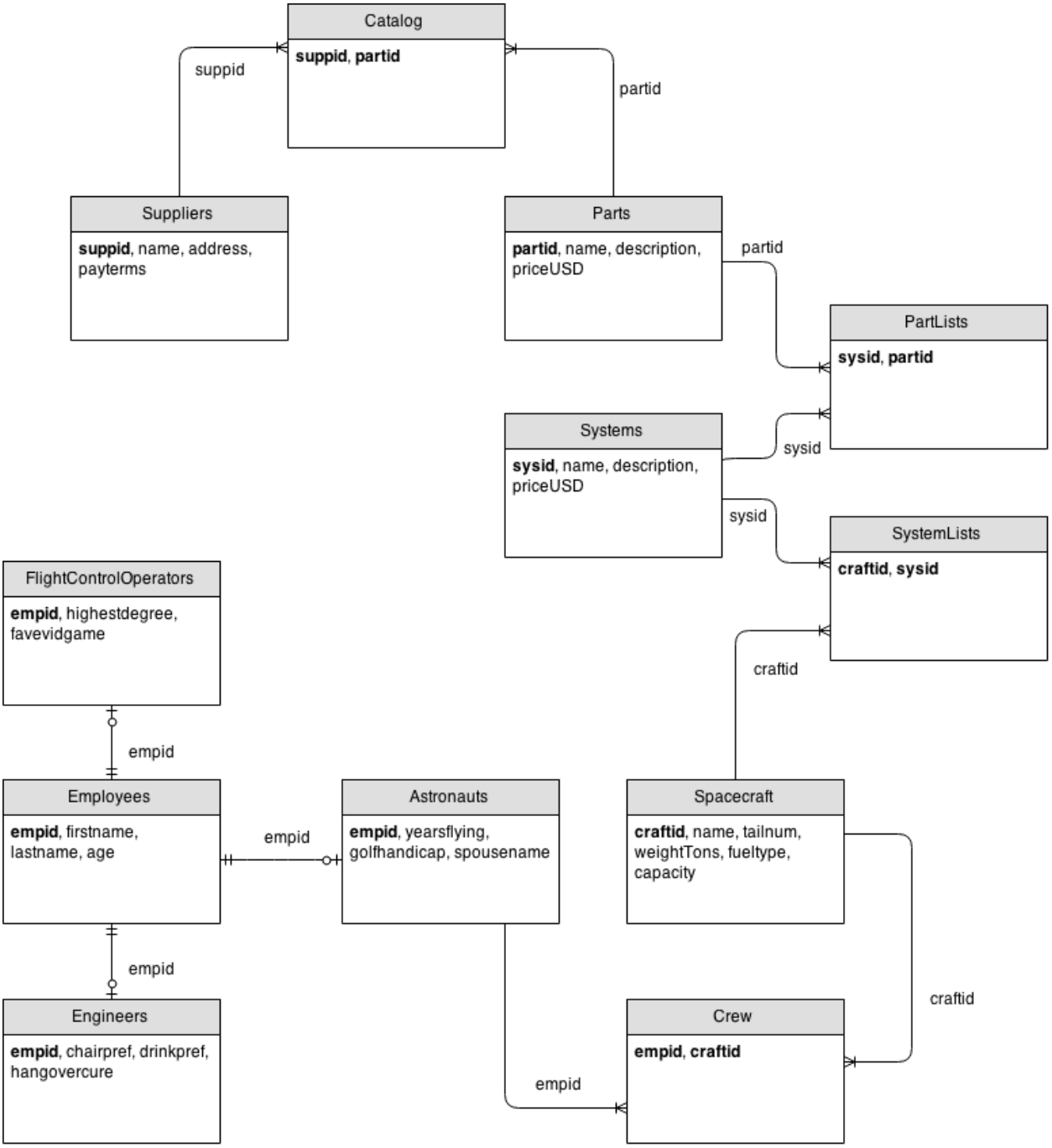
Database Systems: Lab 9

ER Diagram



Functional Dependencies

Catalog: (suppid, partid) → ___

Suppliers: suppid → name, address, payterms

Parts: partid → name, description, costUSD

PartLists: (partid, sysid) → ___

Systems: sysid → name, description, costUSD

SystemLists: (sysid, crafted) → ___

Spacecraft: craftid → name, tailnum, weightTons, fueltype, capacity

Employees: empid → firstname, lastname

Engineers: engid → highestdegree, age, favevidgame

Astronauts: empid → yearsflying, age, golfhandicap, spousename

FlightControlOps: empid → chairpref, age, drinkpref, hangovercure

Crew: (empid, craftid) → ___

Why My Database is in BCNF

Let's show that the database is in each normal form, from first to Boyce-Codd.

1NF: Every cell has one piece of data in it because each column name anticipates a single piece of data for every row, or null.

2NF: There are no multiple dependencies because in each table, every non-key attribute relies solely on the primary key. There are no non-primary keys that determine other non-primary keys, and most primary keys are one column in size.

3NF: There are no transitive dependencies because in each table, there is either 1) only one column in the primary key, or 2) there are two primary-key columns, and no non-key attributes.

BCNF: There is only one candidate key in each table because every strong entity has a manufactured primary key identifier, and every associative entity has the associations as its only columns.