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Database Management

Lab 9

1. Functional dependencies

People

   PID > firstName, lastName, age

Engineers

   PID > degree, favVideoGame

FlightControlOperators

   PID > chairPreference, preferredDrink, preferredHOCure

Astronauts

   PID > yearsFlying, golfHandicap, spouseName

Crew

   PID > SID

Spacecraft

   SID > name, tailNumber, weight, fuelType, crewCapacity
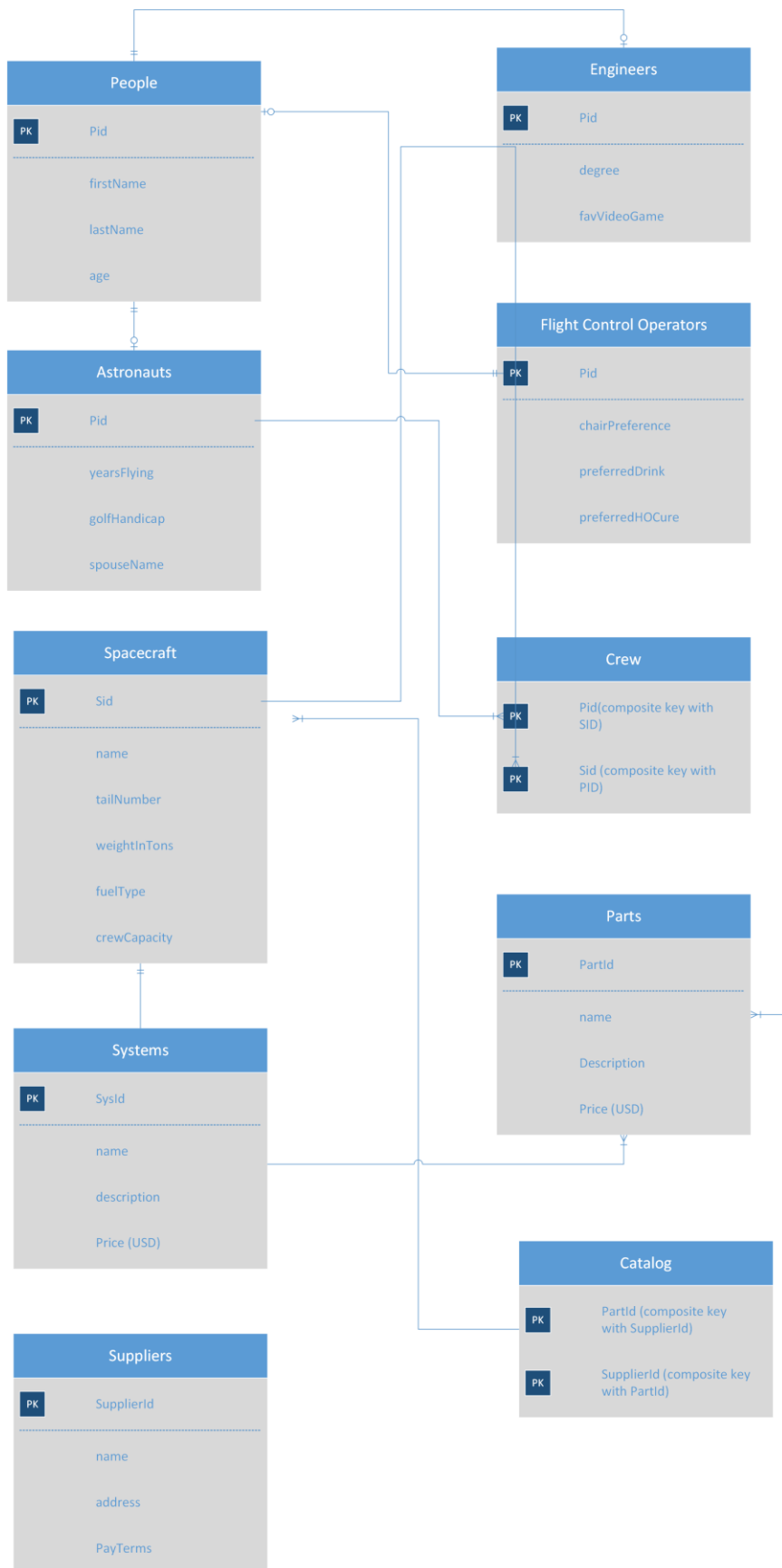
Systems

   SysId > name, description, cost

Parts

   PartId > name, description, cost

Suppliers

   SupplierId

Catalog

   PartId >SupplierId, name, address, payTerms

People

PK Pid

firstName

lastName

age

Engineers

PK Pid

degree

favVideoGame

Flight Control Operators

PK Pid

chairPreference

preferredDrink

preferredHOCure

Astronauts

PK Pid

yearsFlying

golfHandicap

spouseName

Spacecraft

PK Sid

name

tailNumber

weightInTons

fuelType

crewCapacity

Crew

PK Pid(composite key with SID)

PK Sid (composite key with PID)

Parts

PK PartId

name

Description

Price (USD)

Systems

PK SysId

name

description

Price (USD)

Catalog

PK PartId (composite key with SupplierId)

PK SupplierId (composite key with PartId)

Suppliers

PK SupplierId

name

address

PayTerms

3. The database is in first normal form, because all the data is Atomic. It's in second normal form, because there are no partial key attributes. It is in third normal form because there are no multi key dependencies with non-key entities that are more dependent on another entity than the primary key.