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CMPT 308N 114

11/17/16

Lab 9

1. Functional Dependencies:

   People: pID → firstName, lastName, age

   Engineers: pID → highestDeg, favVideoGame

   Astronauts: pID → yearsFlying, golfHandicap, spouseName

   FlightControlOperators: pID → chairPref, drinkPref, hangoverCure

   Spacecraft: sID → name, tailNum, weightTons, fuelType, crewCap

   Crew: sID, pID → none

   Systems: sysID → name, description

   SpaceCraftSystems: sID, sysID → none

   Parts: partID → name, description

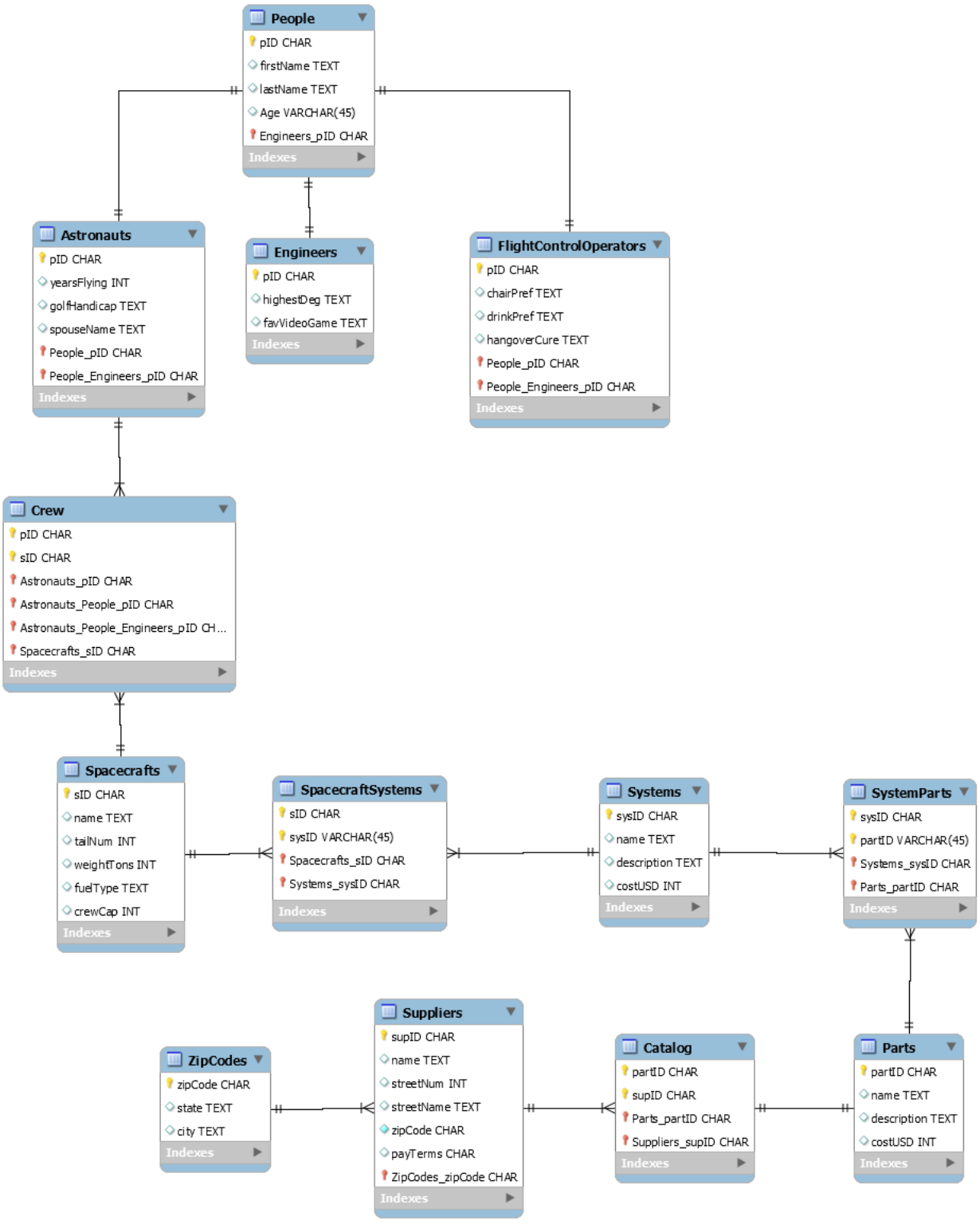
   SystemParts: sysID, partID → none

   Suppliers: supID → name, streetNum, streetName, zipCode, payTerms

   Catalog: supID, partID → none

   ZipCodes: zipCode → state, city

2. ER Diagram:


People
pID CHAR
firstName TEXT
lastName TEXT
Age VARCHAR(45)
Engineers_pID CHAR
Indexes
Astronauts
pID CHAR
yearsFlying INT
golfHandicap TEXT
spouseName TEXT
People_pID CHAR
People_Engineers_pID CHAR
Indexes
Engineers
pID CHAR
highestDeg TEXT
favVideoGame TEXT
Indexes
FlightControlOperators
pID CHAR
chairPref TEXT
drinkPref TEXT
hangoverCure TEXT
People_pID CHAR
People_Engineers_pID CHAR
Indexes
Crew
pID CHAR
sID CHAR
Astronauts_pID CHAR
Astronauts_People_pID CHAR
Astronauts_People_Engineers_pID CH...
Spacecrafts_sID CHAR
Indexes
Spacecrafts
sID CHAR
name TEXT
tailNum INT
weightTons INT
fuelType TEXT
crewCap INT
Indexes
SpacecraftSystems
sID CHAR
sysID VARCHAR(45)
Spacecrafts_sID CHAR
Systems_sysID CHAR
Indexes
Systems
sysID CHAR
name TEXT
description TEXT
costUSD INT
Indexes
SystemParts
sysID CHAR
partID VARCHAR(45)
Systems_sysID CHAR
Parts_partID CHAR
Indexes
ZipCodes
zipCode CHAR
state TEXT
city TEXT
Indexes
Suppliers
supID CHAR
name TEXT
streetNum INT
streetName TEXT
zipCode CHAR
payTerms CHAR
ZipCodes_zipCode CHAR
Indexes
Catalog
partID CHAR
supID CHAR
Parts_partID CHAR
Suppliers_supID CHAR
Indexes
Parts
partID CHAR
name TEXT
description TEXT
costUSD INT
Indexes

3. Good Database:

   This database is in third normal form because it meets first normal form meaning a group of data may not contain repeating data and second normal form meaning that there isn't any partial dependencies of any column on a primary key. All the primary keys as well as all the fields in each table are atomic values. There are no tables that have partial dependencies. All fields of the tables depend on that particular table's key, the whole key, and nothing but the key. All fields within each table that aren't part of the primary key can't be identified using fields that are not part of the primary key for multiple dependencies.