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Lab09
Normalization 3

1)
TABLE: Engineers
PK → Eid
Eid → first name, last name, highest academic degree earned, age, favorite video game

TABLE: Astronauts
PK → Aid
Aid → first name, last name, years flying, age, golf handicap, spouse name

TABLE: Flight Control
PK → Fid
Fid → first name, last name, chair preference, age, preferred drink, recommended hangover cure

TABLE: SpaceEng
PK → Sid, Eid
FK → Sid, Eid

TABLE: SpaceAst
PK → Aid, Sid
FK → Aid, Sid

TABLE: Spacecraft
PK → Sid
Sid → name, description, costUSD

TABLE: CrewMaster
PK → Cid
Cid → Sid

TABLE: CrewSlave
PK → Cid, Aid

TABLE: SystemsMaster
PK → SYid
SYid → name, description, costUSD

TABLE: SystemsOnShip
PK→ SYid, Sid

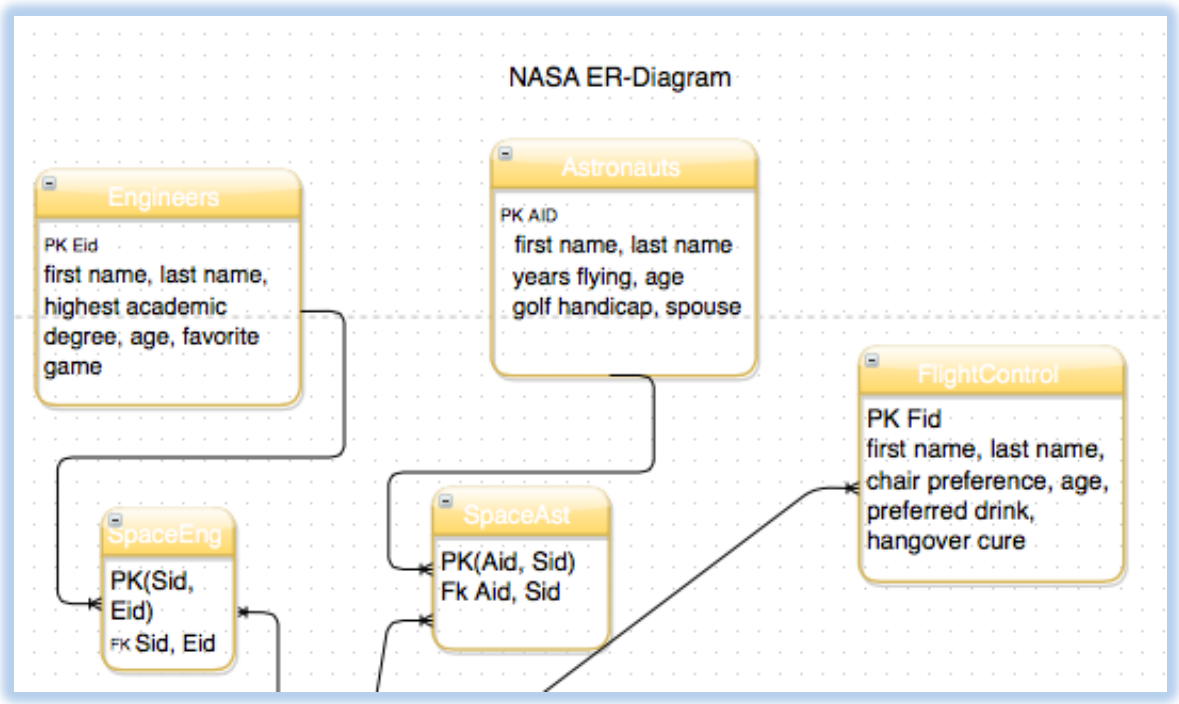
TABLE: SysParts
PK → SYid, Pid
FK → SYid, Pid

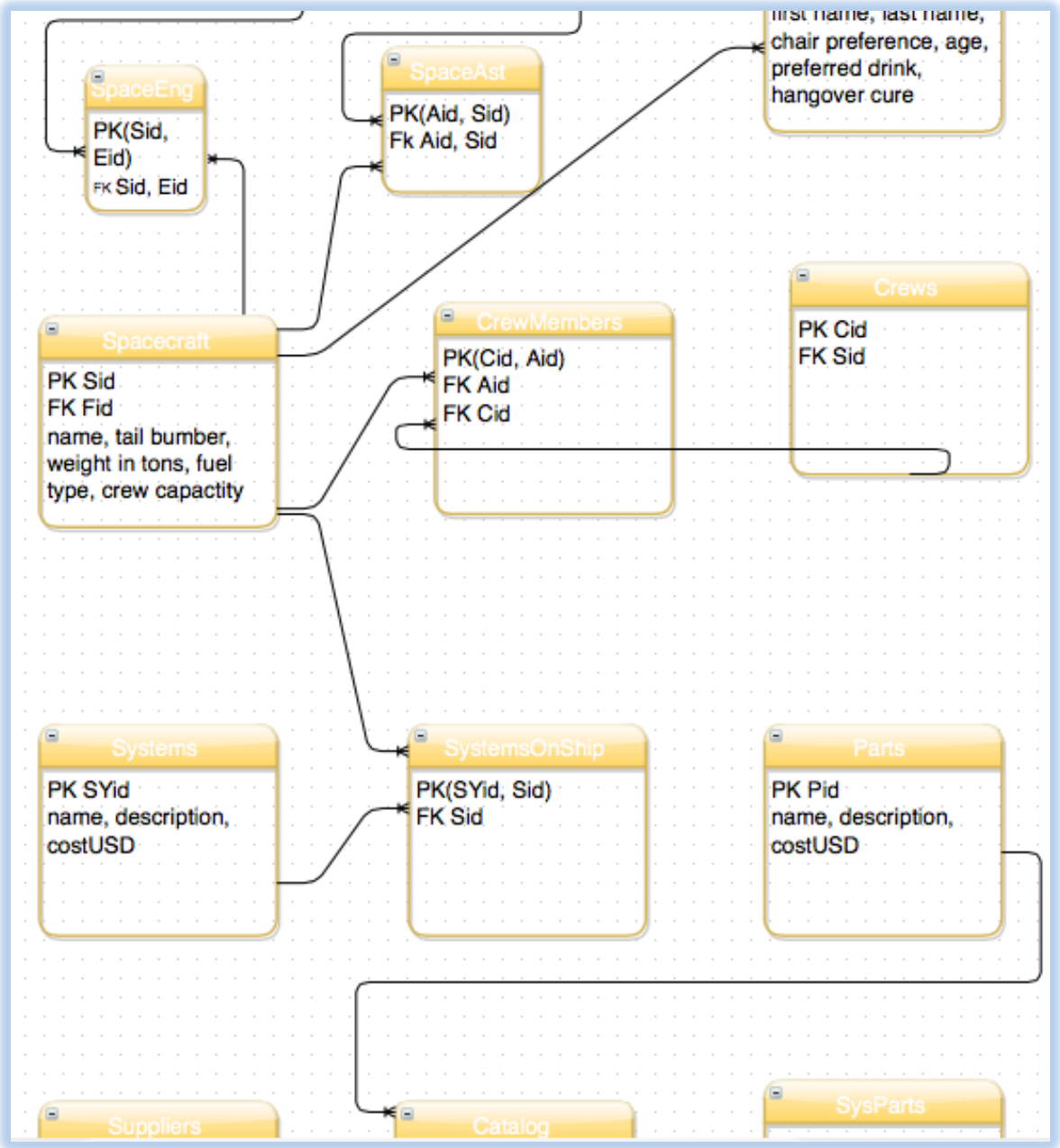
TABLE: Parts
PK → Pid
Pid → name description, costUSD

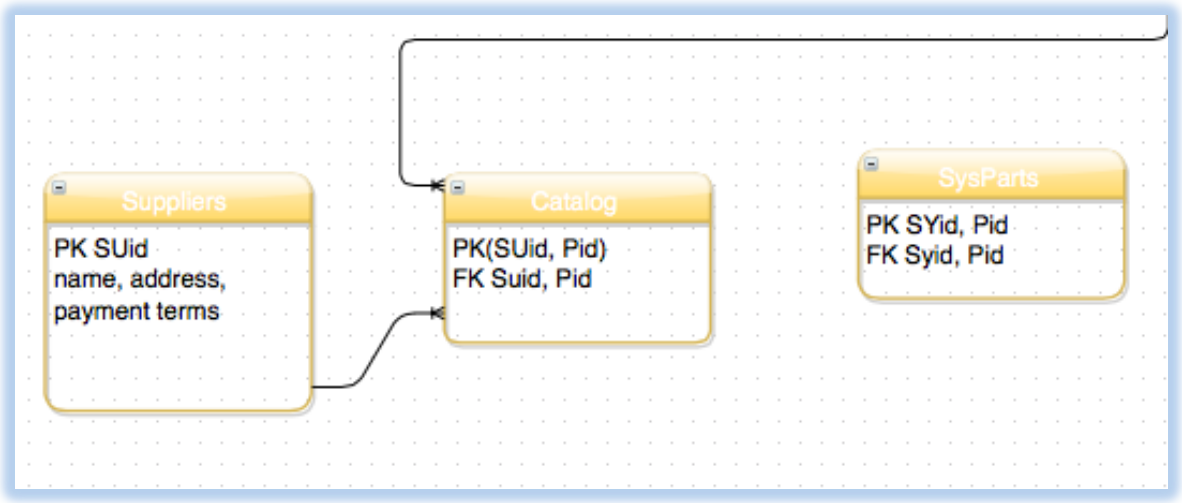
TABLE: Suppliers
PK → SUid
SUid → name, address, payment terms

TABLE: Catalog
PK → Pid, SUid

2) ER-Diagram




SpaceEng
PK(Sid, Eid)
FK Sid, Eid
SpaceAst
PK(Aid, Sid)
Fk Aid, Sid
chair preference, age, preferred drink, hangover cure
Spacecraft
PK Sid
FK Fid
name, tail bumber, weight in tons, fuel type, crew capactity
CrewMembers
PK(Cid, Aid)
FK Aid
FK Cid
Crews
PK Cid
FK Sid
Systems
PK SYid
name, description, costUSD
SystemsOnShip
PK(SYid, Sid)
FK Sid
Parts
PK Pid
name, description, costUSD
Suppliers
Catalog
SysParts



3) The current NASA database is in the first normal form since all the intersections of the rows and columns create atomic data. It is in 2nd normal form as well because there are no partial dependencies. Lastly it is in 3rd normal form because the candidate keys determine the attributes within the table, not by the non prime attributes of the table.