

Tadd Bindas

## Lab 9

### 1) Functional Dependencies:

{pid} -> {first\_name, last\_name}

{pid} -> {aid, years\_flying, age, golf\_handicap, spouse\_name}

{pid} -> {eid, age, highest\_degree, fav\_video\_game}

{pid} -> {fid, chair\_preference, age, preferred\_drink, hangover\_cure}

{cid, aid} -> {cname}

{cid} -> {tail\_number}

{tail\_number, sname} -> {weight\_tons, fuel\_type, crew\_capacity}

{sid} -> {sys\_name, tail\_number, cost\_usd, description}

{part\_id, sid} -> {part\_name, part\_description, supplier\_id, cost\_usd}

{supplier\_id} -> {name, address, payment\_terms}

{supplier\_id, part\_id} -> {catalog\_name}

- 2) This Er-Diagram is in 3NF because it is in 1NF, 2NF, and has no multi-key dependencies. It is in 1NF because it is atomic and every piece of data is broken down into its simplest form. It is in 2NF because there are no partial key dependencies. This means nowhere is {A,B} -> {C} and {A} -> {C}. Lastly, there are no multi-key dependencies. Nowhere in any of my tables are there two independent values in a table that depend on the same candidate key. My table is also in BCNF because there are no transitive dependencies. Those occur when {A} -> {B} and {B} -> C making {A} -> {C}. This does not happen in this DB.