



We to identify the three types of relationships.

Start with Full Key Functional dependency

-> look for underlined columns (these together are the primary key)

-> then we ask, is there any other column that depends completely on that entire primary key?

Then identify partial functional dependencies

-> columns that depend on part of the primary key

--> ProductID determines the ProductType

--> and ShipmentID determines ShipmentDate, TruckID and TruckType

Last look for "ID" columns that aren't part of the primary key

-> TruckID determines TruckType (this is a transitive relationship)

2nd normal form (this is optional)
(leave transitive in)

| | | | |
|-------------------|--------------|---------|-----------|
| <u>ShipmentID</u> | ShipmentDate | TruckID | TruckType |
|-------------------|--------------|---------|-----------|

| | |
|------------------|-------------|
| <u>ProductID</u> | ProductType |
|------------------|-------------|

| | | |
|-------------------|------------------|----------|
| <u>ShipmentID</u> | <u>ProductID</u> | Quantity |
|-------------------|------------------|----------|

3rd normal form (end result of tables) (split out transitives)

| | | |
|-------------------|--------------|---------|
| <u>ShipmentID</u> | ShipmentDate | TruckID |
|-------------------|--------------|---------|

| | |
|------------------|-------------|
| <u>ProductID</u> | ProductType |
|------------------|-------------|

| | | |
|-------------------|------------------|----------|
| <u>ShipmentID</u> | <u>ProductID</u> | Quantity |
|-------------------|------------------|----------|

| | |
|----------------|-----------|
| <u>TruckID</u> | TruckType |
|----------------|-----------|