

Lab 3

Lab 2 Revision:

Entity Sets *_discriminator_*

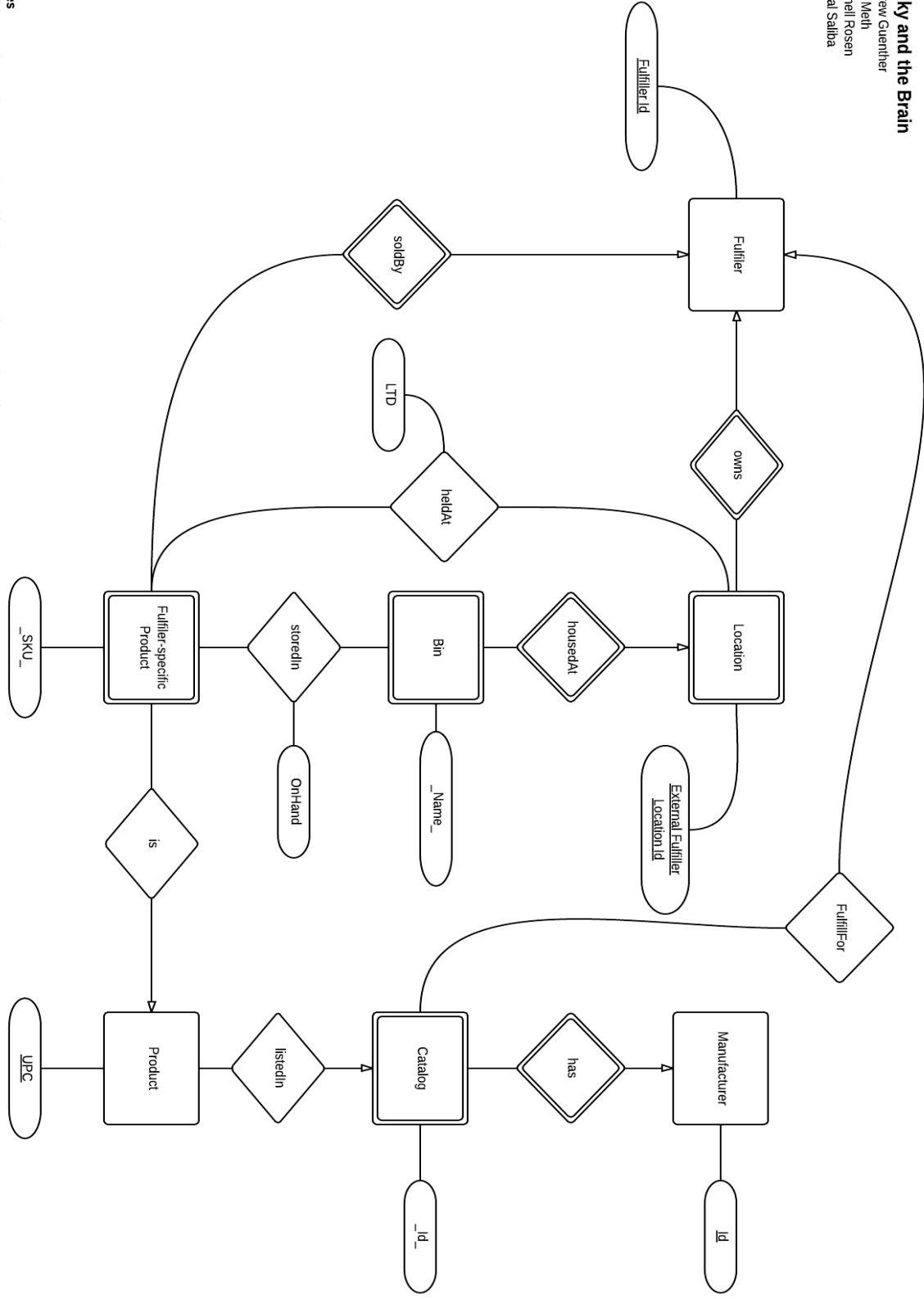
1. **Fulfiller**
 - Fulfiller Id
2. **Locations** is weak, owner is Fulfiller
 - *_External Fulfiller Location Id_*
 - Name
 - Type
 - Latitude
 - Longitude
 - Status
 - Default Safety Stock
3. **Bins** is weak, owner is Location
 - *_Name_*
4. **Fulfiller Specific Products** is weak, owner is Fulfiller
 - *_SKU_*
5. **Products**
 - UPC
6. **Manufacturer**
 - Id
7. **Catalog** is weak, owner is Manufacturer
 - *_Id_*

Relationship Sets

1. Fulfillers **own** Locations
2. Fulfillers **sell** Fulfiller-specific Products
3. Locations **hold** Fulfiller-specific Products
 - LTD
 - Safety Stock
 - *quantity available is calculated as an aggregate of all bins*
4. Locations **house** Bins
5. Bins **store** Fulfiller-specific Products
 - onHand
 - numAllocated
 - *available per bin = onHand - numAllocated*
6. Products **are** Fulfiller-specific Products
7. Products **are listed** in Catalogs
8. Manufacturers **have one or more** catalogs
9. Fulfillers **fulfill for** Catalogs

Pinky and the Brain

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Notes

Stock information can be aggregated to achieve inventory totals for each product

<name>_ is a discriminator

→ referential integrity constraint

E-R Diagram

Lab 3 Documents

Database Constraints:

- onHand >= numAllocated

Relational Tables:

Fulfiller

id STRING PRIMARY KEY

Product

upc VARCHAR2(12) PRIMARY KEY

catalog_id STRING

Attribute catalog_id is a foreign key referencing table Catalog

Manufacturer

id STRING PRIMARY KEY

Location

ext_ful_location STRING PRIMARY KEY

fulfiller_id STRING PRIMARY KEY

name STRING

type ENUM("warehouse", "storefront")

latitude DECIMAL

longitude DECIMAL

status ENUM("Active", "Inactive")

default_safety_stock INT

Attribute fulfiller_id is a foreign key referencing table Fulfiller

Bin

name STRING PRIMARY KEY

fulfiller_id STRING PRIMARY KEY

ext_ful_location STRING PRIMARY KEY

Attribute ext_ful_location, fulfiller_id is a foreign key referencing table Location

FulfillerSpecificProduct

sku STRING PRIMARY KEY

fulfiller_id STRING PRIMARY KEY

upc STRING PRIMARY KEY

Attribute fulfiller_id is a foreign key referencing table Fulfiller

Attribute UPC is a foreign key referencing table Product

Catalog

id STRING PRIMARY KEY
manufacturer_id STRING PRIMARY KEY
fulfiller_id STRING

Attribute manufacturer_id is a foreign key referencing table Manufacturer
Attribute fulfiller_id is a foreign key referencing table Fulfiller

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fulfiller_id STRING PRIMARY KEY
ext_ful_location STRING PRIMARY KEY
sku STRING PRIMARY KEY
ltd FLOAT
safety_stock INT

Attributes SKU, fulfiller_id is a foreign key referencing table
FulfillerSpecificProduct
Attributes ext_ful_location is a foreign key referencing Location

StoredIn

sku STRING PRIMARY KEY
fulfiller_id STRING PRIMARY KEY
name STRING PRIMARY KEY
ext_ful_location STRING PRIMARY KEY
on_hand INT
num_allocated INT

Attribute sku is a foreign key referencing FulfillerSpecificProduct
Attributes fulfiller_id, name and ext_ful_location are foreign keys
referencing Bin