CPE 366
Team: Pinky and the Brain
Andrew Guenther
Halli Meth
Mitchell Rosen
Haikal Saliba

Lab 3

Lab 2 Revision:
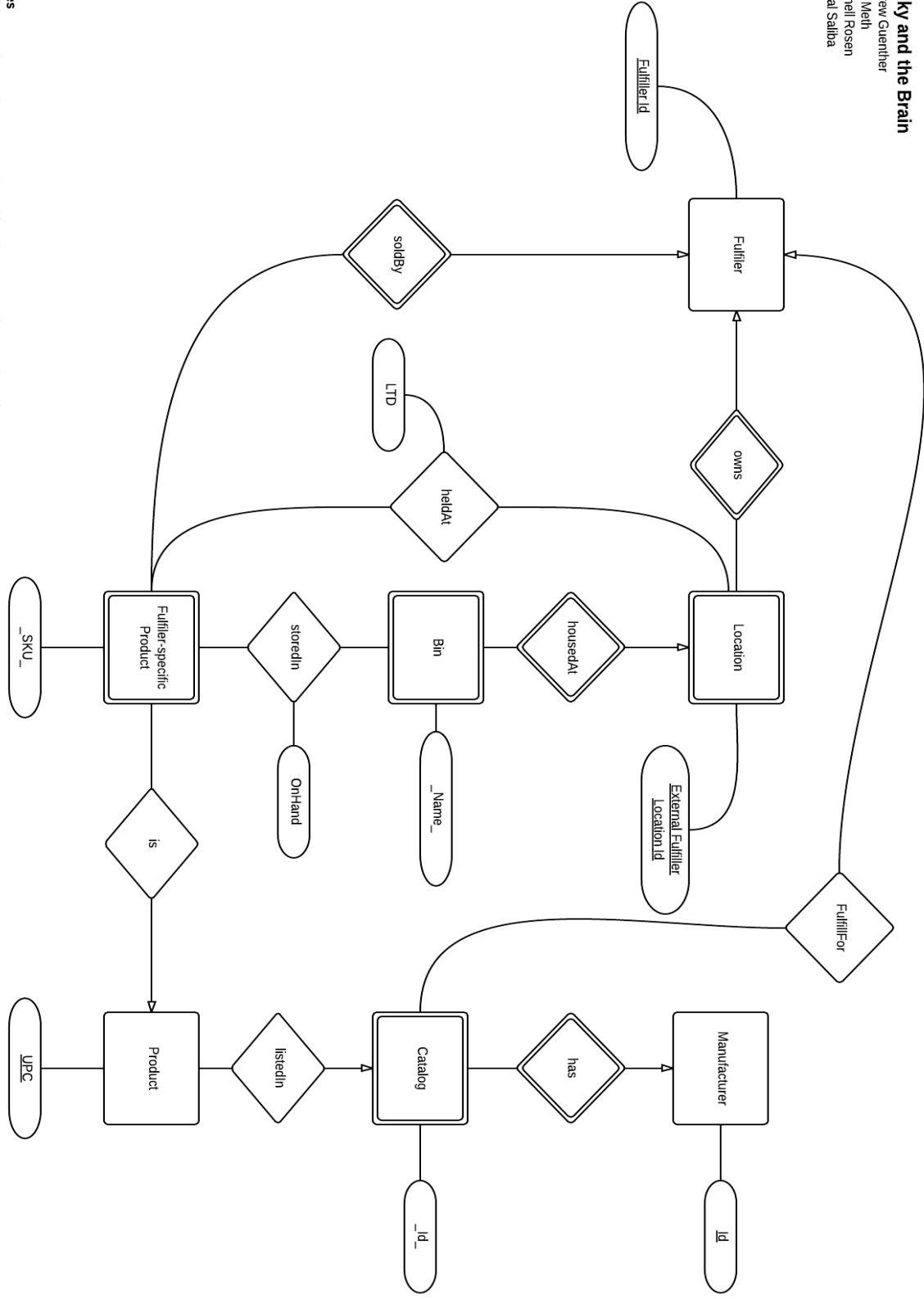
Entity Sets _discriminator_

1. **Fulfiller**
   - <u>Fulfiller Id</u>
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**
   - <u>UPC</u>
6. **Manufacturer**
   - <u>Id</u>
7. **Catalog** is weak, owner is Manufacturer
   - _Id_

Relationship Sets

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

E-R Diagram

Pinky and the Brain
Andrew Guenther
Halli Meth
Mitchell Rosen
Haikal Saliba

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

<name> is a discriminator

referential integrity constraint

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

<u>Catalog</u>
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

<u>HeldAt</u>
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

<u>StoredIn</u>
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

Attributes SKU, fulfiller_id are foreign keys referencing
     FulfillerSpecificProduct
Attributes name, ext_ful_location are foreign keys referencing Bin