# Project Business Rules

* Stores Supertype
  + Each store will have one physical location (is there a possible exception to this?)
  + Each store must have primary contact information
  + A store will have a maximum and minimum employee capacity ? Unsure how this is implemented, perhaps it is with a procedure
  + A store may have many inventory items in stock
  + A store may have zero or more managers (0 if one is currently unassigned)
* Employees Supertype
  + Each employee must have an address and contact information
  + An employee may be assigned to zero or more stores ? (currently unassigned again)
  + An employee will have a salary ? Worth considering that the employees would be tracked by the system too
* Location 1:M Subtype
  + The location must be a real location/mailing address
  + Include a location for ONLINE
* Inventory M:M relation
  + Primary key would be a composit key of the 2 FK
  + We must know the current Quantity of items at a store
* Item Supertype
  + An item may have many Traits
* Traits subtype
  + Must be searchable and easily tagged to an item
  + Many Items may have many attributes
* CharacteristicsM:M table
  + Maybe there should be a strength attribute to describe just how Yellow a yellow thing is for system comparison.
* Department
  + Items are housed in departments, and employees are assigned a department to work in
* Transaction Supertype
  + A transaction may have multiple items
  + A transaction must track the date
  + A transaction must track if items were on sale? (Identify bargain hunters)
* Customer Supertype
  + A customer may have made many transactions
  + A customer may have many preferences
  + A customer may shop at multiple stores
  + A customer may provide contact information
  + Is it worth adding in a customer likes certain employees? I can see that being helpful for a business trying to optimize sales
* CustomerLoyalty\_ID (primary key)
  + Track the customers current loyalty points
* Promotion\_ID (primary key)
  + A promotion can be applied to one or more items at a [Bussines wide -or- Store] level
  + A promotion can be a set amount, a percentage off, a buy X get Y [are there others?]
* Preferences
  + Keep track of each Customers preferences related to traits,
* Line Item
  + The item in a transaction must be noted as a line item

# Properties

### Store

* Store\_name
* Store\_phone
* Store\_email
* Manager (FK)

### Employee

* Employee\_Name
* Employee\_Salary
* Location\_ID (FK)
* Store\_ID (Foreign key) ; M:1
* Department\_ID (Foreign key) ; 1:1

### Location

* Street\_address
* City
* State
* Zip\_code
* country

### Inventory

* Store\_ID (Foreign Key); 1:1
* Item\_ID (Foreign Key) ; 1:M
* Count

### Item

* Item\_ID (Would be the Universal Product Code 'UPC' in a real store, just an int here)
* Item\_name
* DEPT\_ID (FK) (Item is kept in this department)

### Trait

* Trait Name
* Trait Description - This would cover the following
  + Brand
  + Price
  + Size
  + Color
  + Material
  + Season
  + Sports Affiliation (optional) - examples: Ravens, Orioles, Capitals
  + Year (optional) - useful for querying vintage items

### Department

* Department\_name

### Transaction

* Transaction\_Date
* Transaction\_Type (return, purchase)
* Cust\_ID (foreign key); 1:1
* Store\_ID (foreign key); 1:1
* [DROP] Promotional\_ID (foreign key, optional) ; 1:1

### LineItems

* Quantity

### Customer

* Cust\_Name
* Cust\_Phone
* LOC\_ID (customers address)
* CUST\_POINTS (Loyalty points discount level would be derived)

### [DROP] Promotion ID

* Promotion\_Type
* Promotion\_Value
* Start\_Date
* End\_Date
* Store\_ID (Foreign Key, optional)