

Clothing Store Database Assignment

By Artemis Lee,
Kyron Trinh,
Theebika Pirabakaran



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Problem Statement

A clothing store

- various styles, colours and sizes.

Scope:

1. **Brand new clothing store**
 - Little pre-existing infrastructure / systems
 - Thus, other software systems will also be selected from scratch
 - Very little pre-existing data
 - Will pretend ~1 years has passed to show off database
2. **Brick and mortar only**
 - Potentially online front later
 - No plans for franchising/large expansion

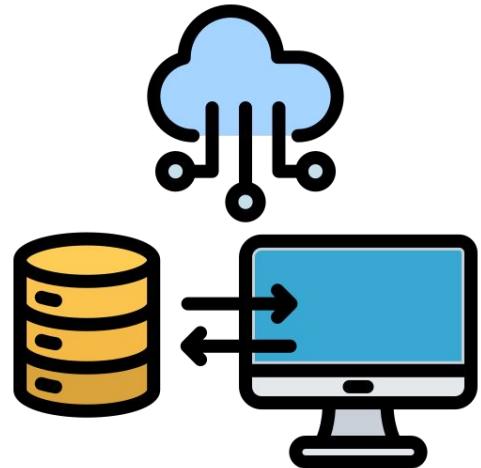


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Solution Proposal

Will be an SQL Database on the Oracle SQL Developer RDBMS.

- To administrate the Organization and Staff:
 - Employee
 - Job Class
- To record information on Customers and Sales
 - Address
 - Customer,
 - Sale order
 - Sale Order Lines



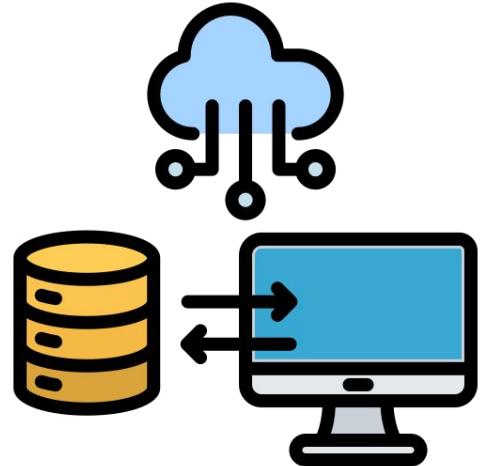
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Solution Proposal

Will be an SQL Database on the Oracle SQL Developer RDBMS.

- To manage Products and Inventory:
 - Brand
 - Product
 - Product Variant
 - Inventory

- To document Manufacturers and Supplies
 - Address
 - Manufacturer
 - Supply Order
 - Supply Order Lines



Images credit : Flaticon.com

Solution Proposal

The SQL database will pass and receive data from software that handles:



Employee Scheduling



Payroll



HR/Reporting



Point of Sale (POS)



Inventory Management

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Flaticon.com

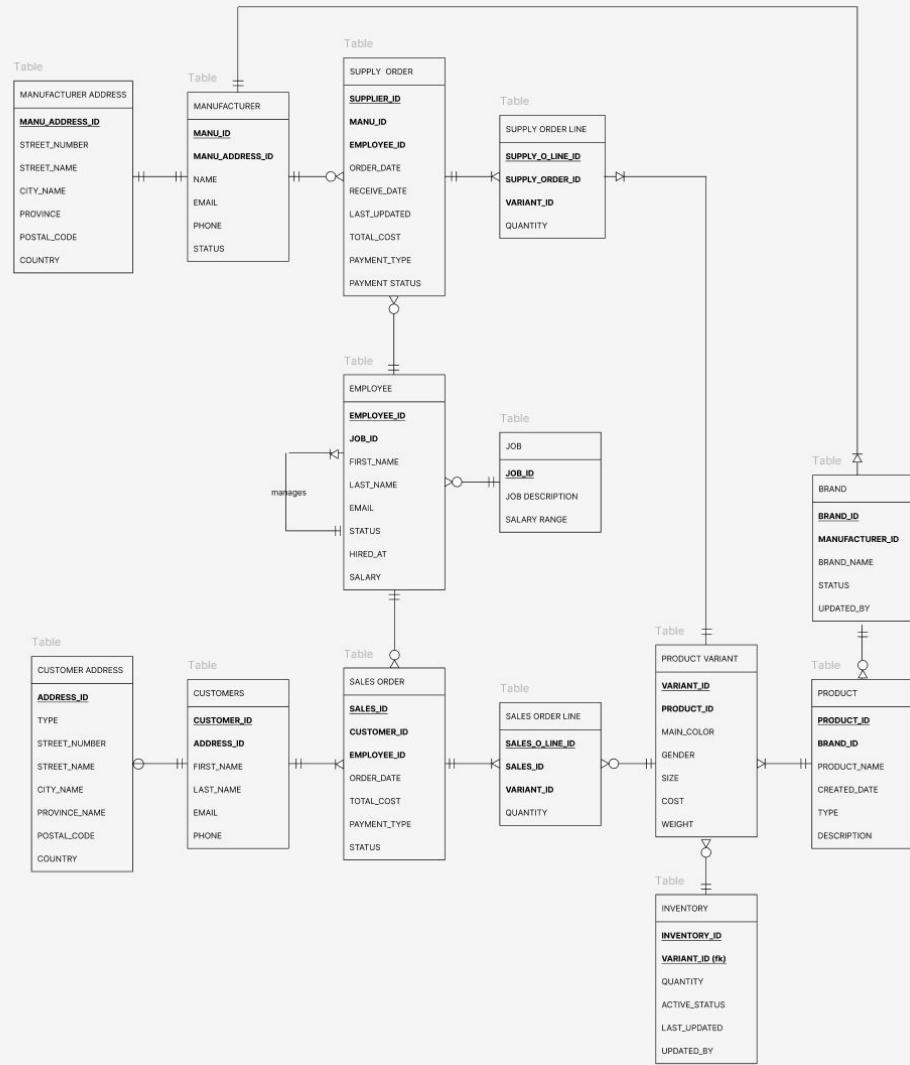
Ultimately, the database will allow the business to operate over a long period of time while accumulating large amounts of data

Entity Relationship Diagram (ERD)

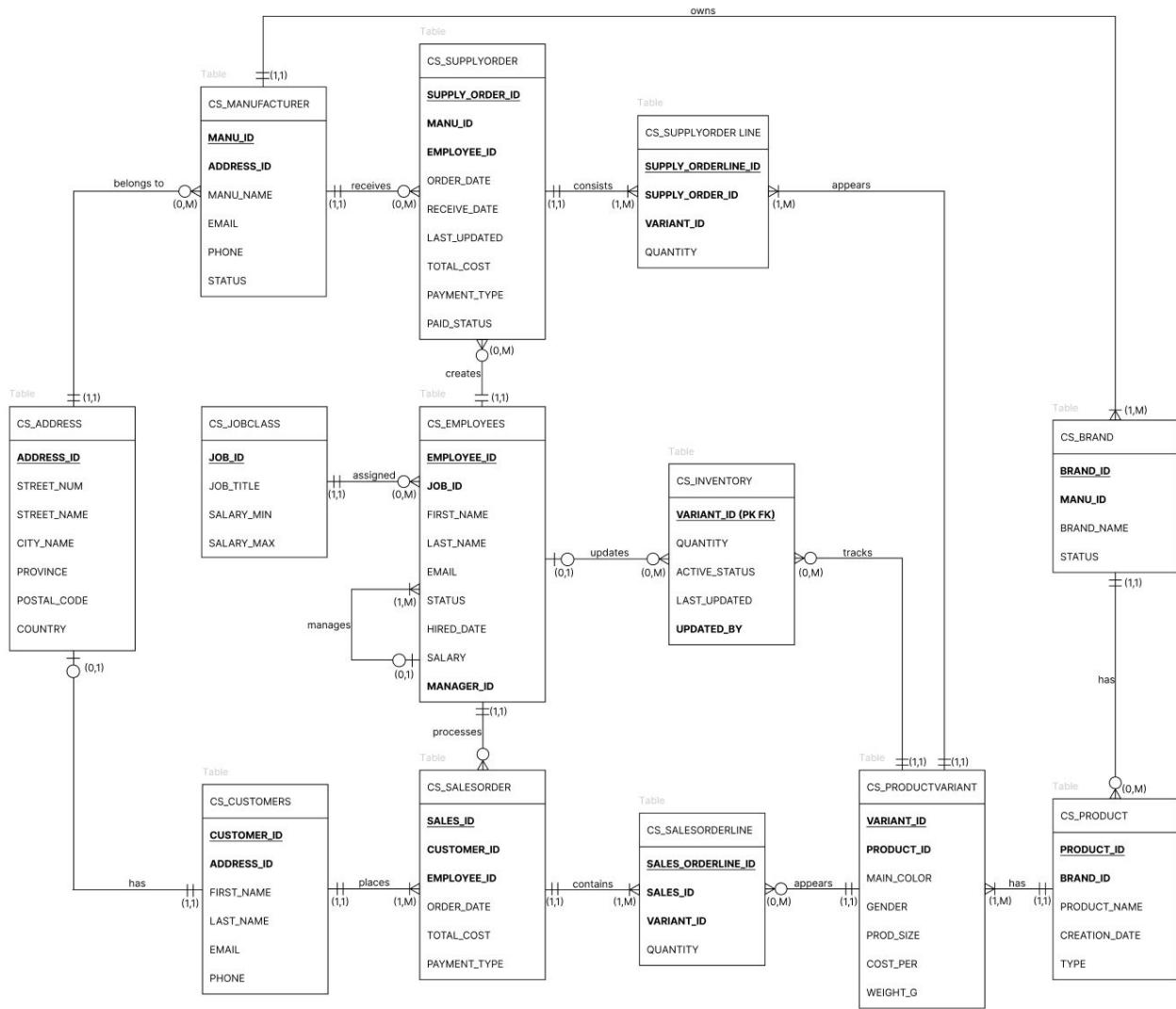


ERD

First Iteration



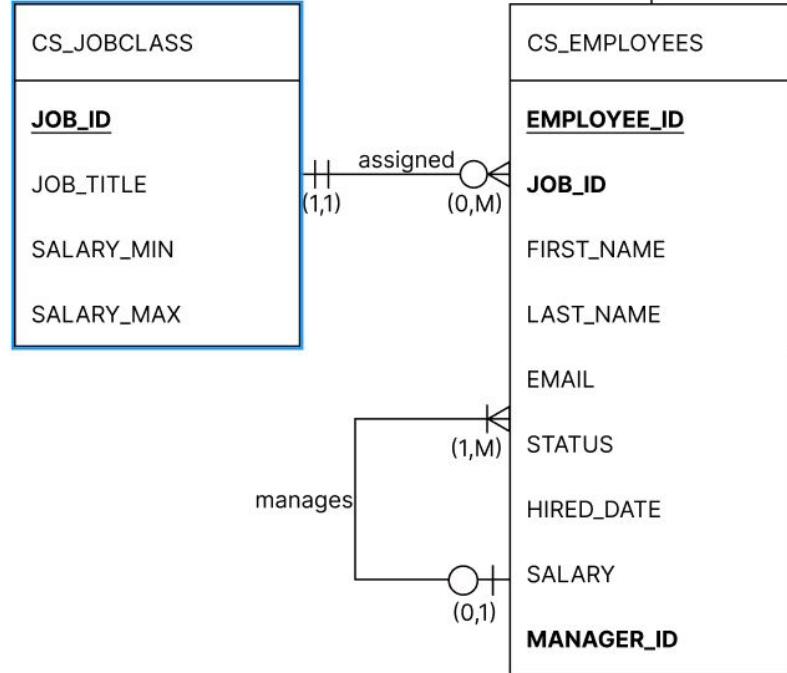
Final ERD



Business Rules

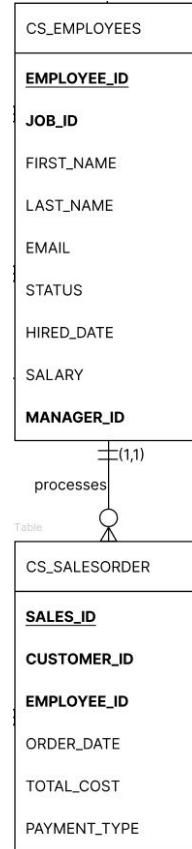
Organization and Staff

- Each employee is assigned exactly one job class; each job class can have zero or many employees.
- Each employee is managed by a manager; a manager will manage at least themselves, and can manage many more employees.

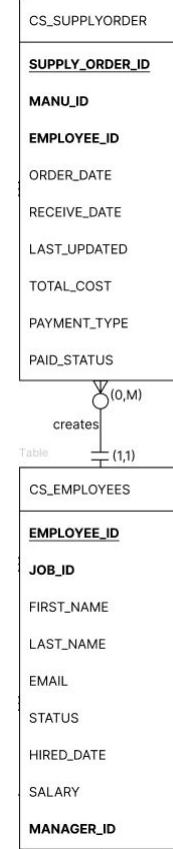


Organization and Staff

- Each sales order is processed by exactly one employee; an employee can process zero or many sales orders.

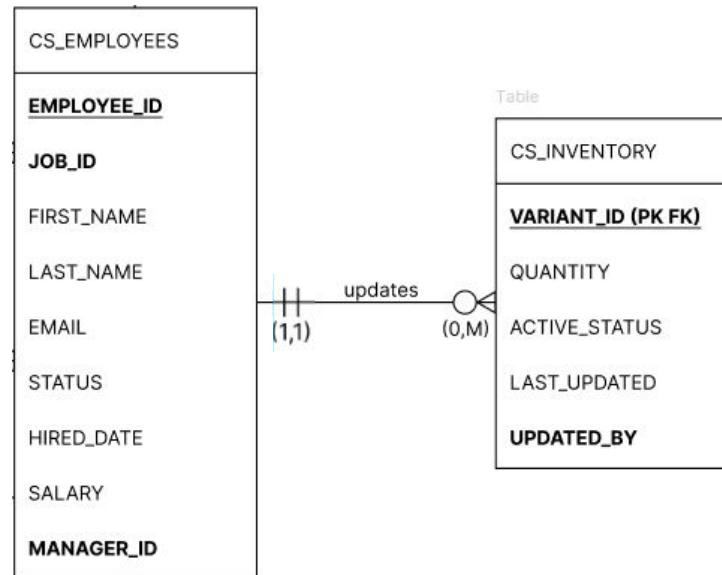


- Each supply order is created/updated by exactly one employee; an employee can create/update zero or many supply orders



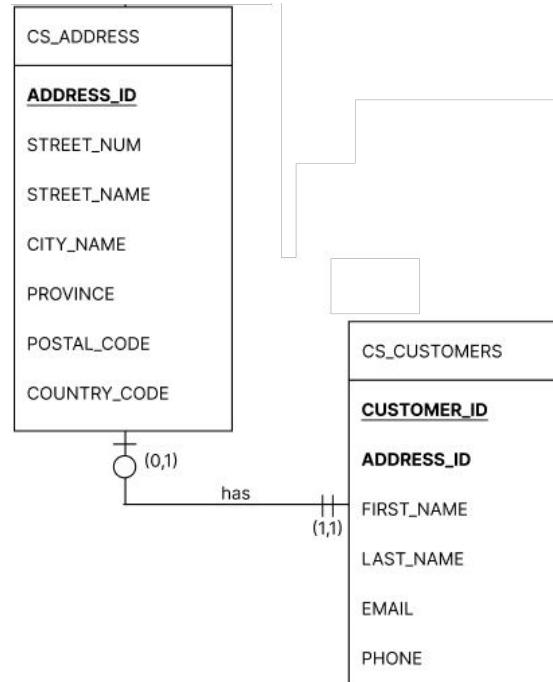
Organization and Staff

- Each inventory record is updated by exactly one employee; an employee can update zero or many inventory records.



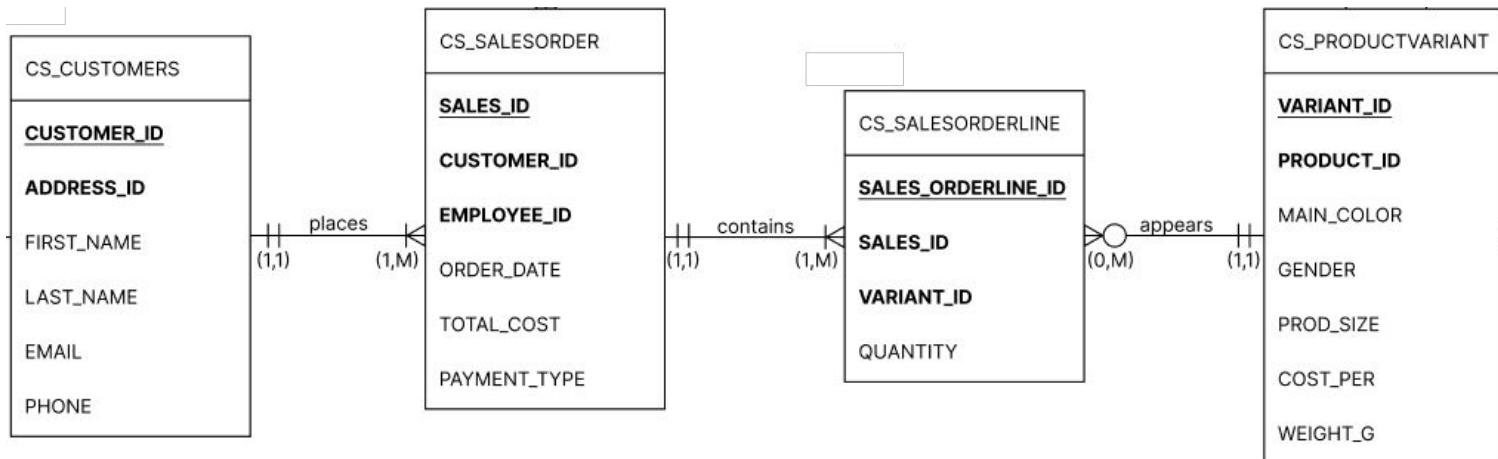
Customers and Orders

- A customer can have one or no address; each address belongs to exactly one customer



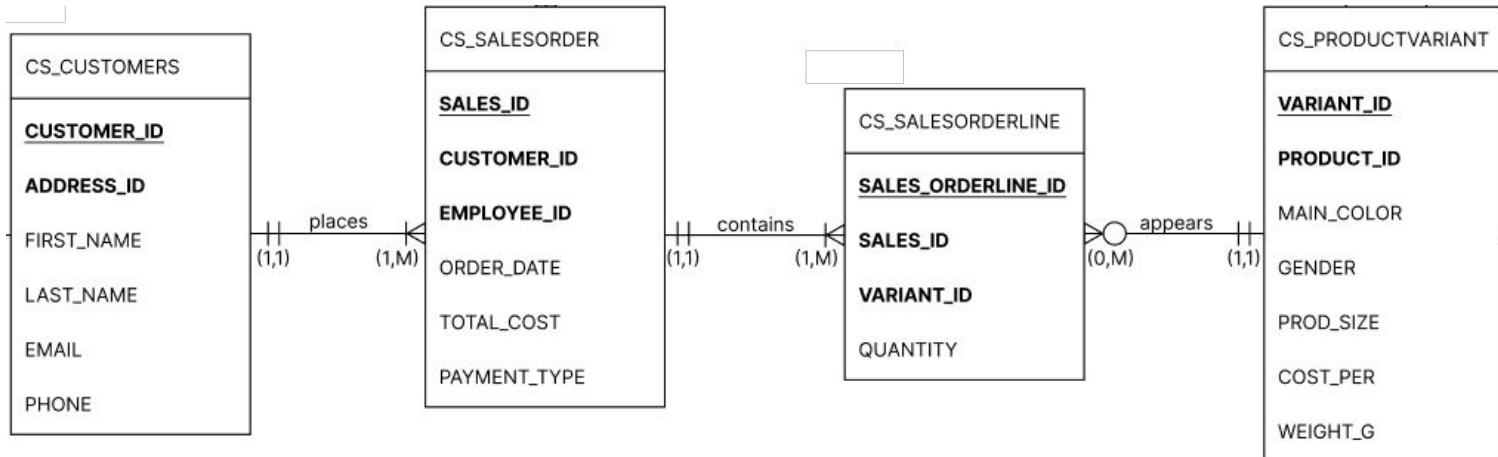
Customers and Orders

- A customer must place at least one sales order; each sales order must be associated with exactly one customer.
- Each sales order contains one or many sales order lines; each sales order line belongs to exactly one sales order.



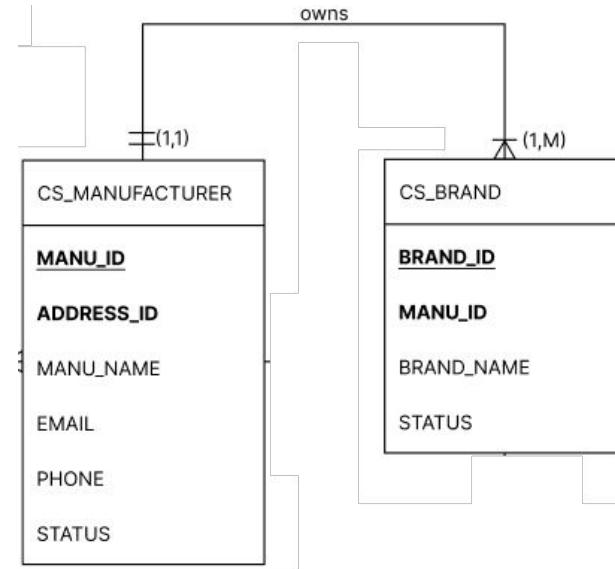
Customers and Orders

- Each sales order line refers to exactly one product variant; a product variant can appear on zero or many sales order lines



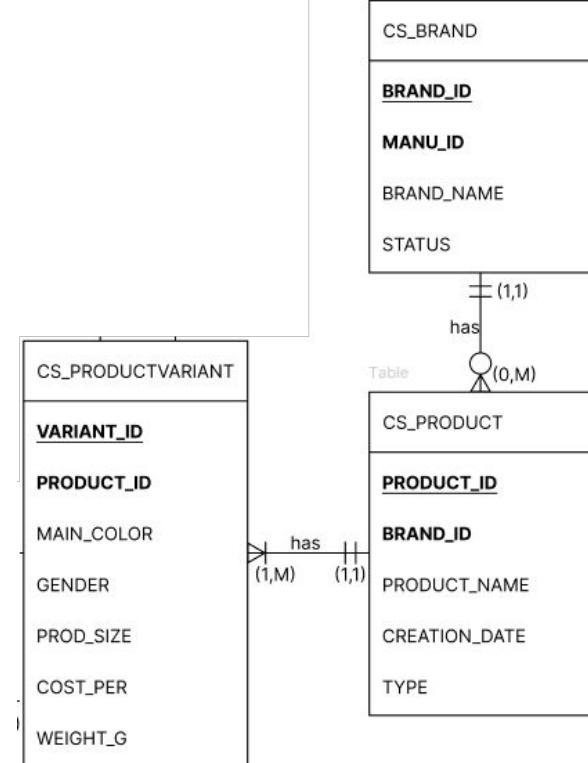
Products and Inventory

- Each manufacturer owns at least one brand; each brand is owned by exactly one manufacturer



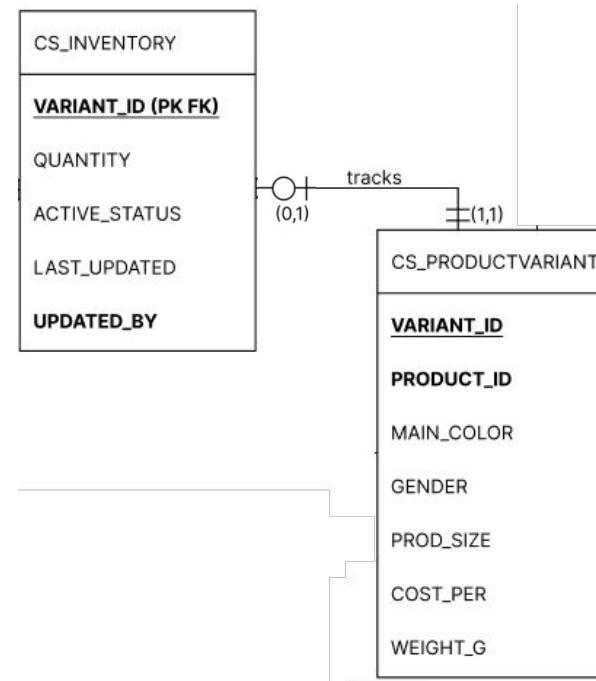
Products and Inventory

- Each brand has zero or many products; each product is a part of exactly one brand.
- Each product has at least one product variant (size, colour, gender); each variant is a part of exactly one product.



Products and Inventory

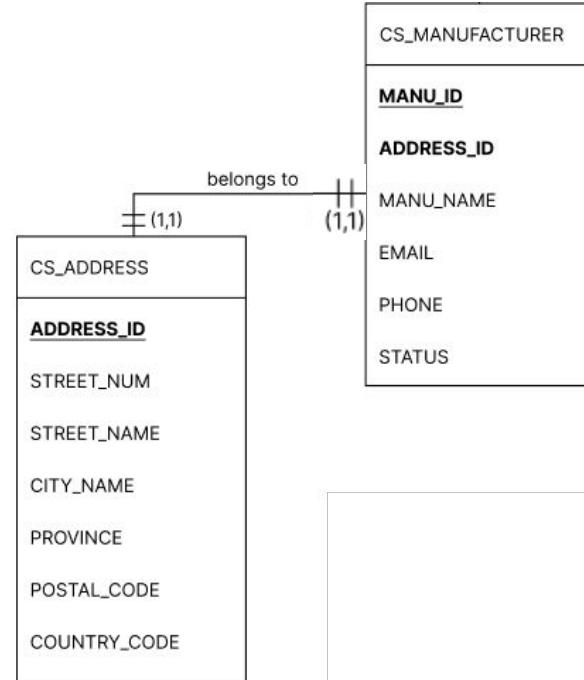
- Each product variant appears in zero or one inventory record and each inventory record tracks exactly one product variant





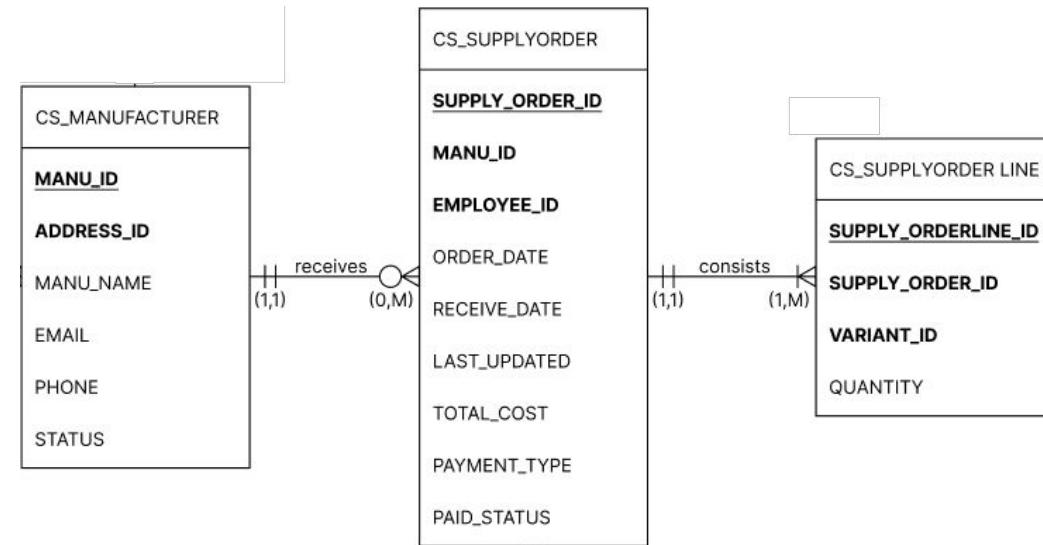
Manufacturers and Supply

- A manufacturer can have exactly one address; each address belongs to exactly one manufacturer.



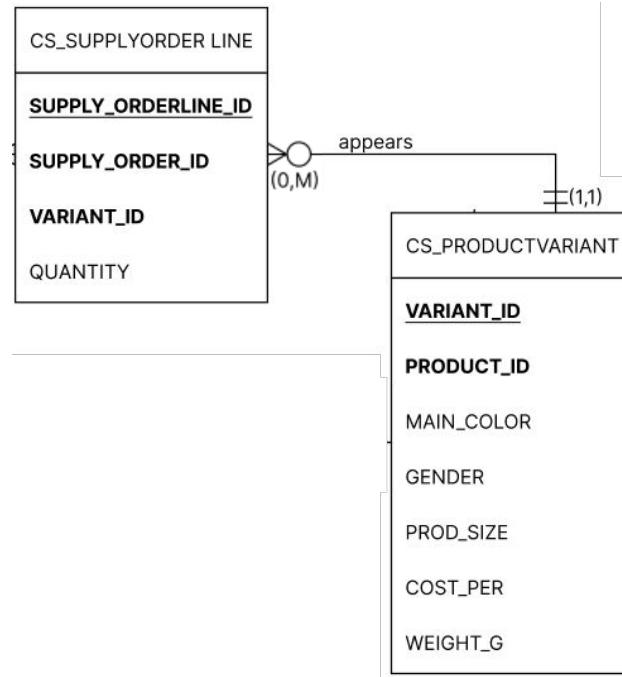
Manufacturers and Supply

- A supply order is placed with exactly one manufacturer; a manufacturer can receive zero or many supply orders.
- Each supply order contains one or many supply order lines; each supply order line belongs to exactly one supply order.



Manufacturers and Supply

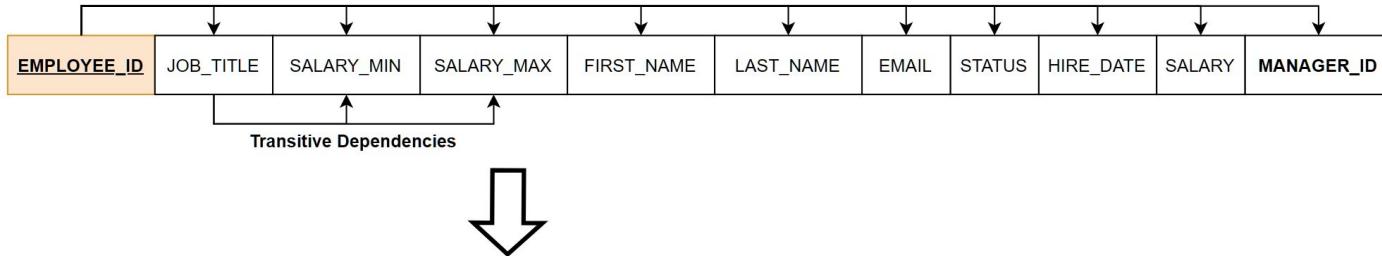
- Each supply order line refers to exactly one product variant; a product variant can appear in zero or many supply order lines.



Normalization Strategies

Employee and Job

EMPLOYEE



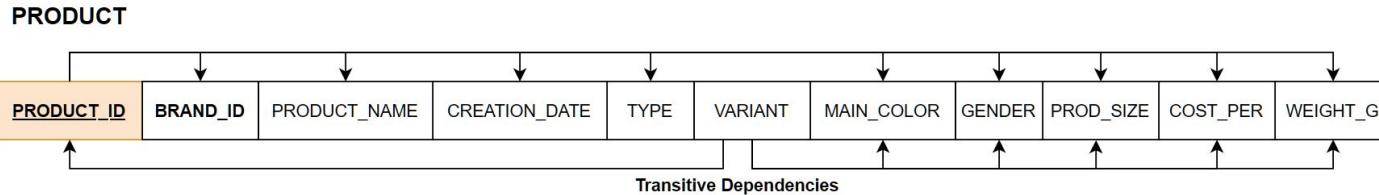
EMPLOYEE

<u>EMPLOYEE_ID</u>	JOB_ID	FIRST_NAME	LAST_NAME	EMAIL	STATUS	HIRE_DATE	SALARY	MANAGER_ID
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JOB

<u>JOB_ID</u>	JOB_TITLE	SALARY_MIN	SALARY_MAX
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Product and Product Variant



PRODUCT

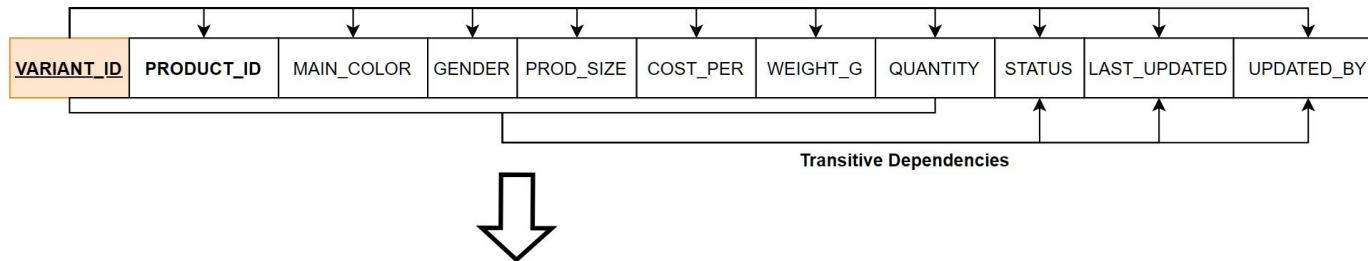
<u>PRODUCT_ID</u>	BRAND_ID	VARIANT_ID	PRODUCT_NAME	CREATION_DATE	TYPE
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PRODUCT VARIANT

<u>VARIANT_ID</u>	PRODUCT_ID	MAIN_COLOR	GENDER	PROD_SIZE	COST_PER	WEIGHT_G
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Product Variant and Inventory

PRODUCT VARIANT



PRODUCT VARIANT

VARIANT_ID	PRODUCT_ID	MAIN_COLOR	GENDER	PROD_SIZE	COST_PER	WEIGHT_G
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INVENTORY

VARIANT_ID (PK FK)	QUANTITY	STATUS	LAST_UPDATED	UPDATED_BY
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Table Creation, Table Insertions, and Table Query Scenarios

Final Thoughts

Thanks!

Any questions?