SIT 103 Data and Information Management

Assignment 1

Student IDs:
Kale 5011376
David 5009841
Eugene 5010985
All students contributed 1/3 of the assignment equally

Entities and Attributes

Product { SKU, category{:tbl_product_category}, supplier, cost_price, list_price, rating, reviews }
Tyre { *SKU*, *rim_size_data*, brand, name, width, diameter, aspect_ratio, load, speed }
Rim { *SKU*, *rim_size_data*, brand, name, PCD, offset, load_rating, centre_bore }
Rim_Size { rim_size_data, width, diameter }
Car { registration_plate, *customer_ID, rim_size_data*, make, model, year }
Customer { customer_ID, name, address, email, contact_number, security_question, password, registration_date, account_close_date }
Sales Order { invoice_ID, *SKU, customer_ID, employee_ID, store_ID, dispatch_ID*, date, price, payment_status{:tbl_payment_status}
Store { store_ID, address, type{:tbl_store_type} }
Roster { Roster_ID, *store_ID, employee_ID*, schedule }
Employee { employee_ID, *store_ID*, name, age, email, phone_number, job_title{:tbl_title}, hire_date, salary}
Dispatch { dispatch_ID, *invoice_ID, employee_ID,* date, status{:tbl_dispatch_status} }
Services { service_ID, *employee_ID, customer_ID, SKU,* type{:tbl_service_type}, price }
Record { record_ID, *invoice_ID, customer_ID, employee_ID, store_ID*, type{:tbl_record_type}, date }

Business Rules

2.1

Product:Store(M:1)

A product can be found in one store
A store can have many products

Product:Tyre(1:1)

A product can be 0 or 1 tyre
A tyre is one product (has one SKU)

Product:Rim(1:1)

A product can be 0 or 1 rim
A rim is one product (has one SKU)

Rim_Size:Tyre (1:M)

A rim size can hold many tyres
A tyre can have one rim size

Rim_Size:Rim(1:M)

A rim size can hold many rims
A rim can have one rim size

Rim_Size:Car (1:M)

A rim size can be on many cars
A car can have one rim size

Customer:Car(1:M)

A customer can have many cars
A car can be owned by one customer

Sales_Order:Product(1:M)

A sales order can hold many products
A product can have 0 or 1 sales orders

Sales_Order:Employee(M:1)

A sales order can be done by one employee
An employee can do many sales orders

Sales_Order:Customer (M:1)

A sales order can have only one customer
A customer can have many sales orders

Sales_Order:Store(M:1)

A sales order can be held at one store
A store can have many sales orders

Sales_Order:Dispatch(1:1)

A sales order can have one dispatch info
A dispatch ID can be associated with one sales order

Employee:Store(M:M)

An employee can work at many stores
A store can hire many employees
{

Employee:Roster(M:1)
An employee can have one roster schedule
A stores roster can hold many employees
Store:Roster(1:1)
A store can have one roster schedule
A roster can be associated with one store

}

Employee:Dispatch(1:M)

An employee can handle many dispatches
A dispatch can be handled by one employee

3.1

Service:Employee(M:1)

A service can be conducted by one employee
An employee can conduct many services

Service:Customer(M:1)

A service can be for 0 or 1 customers
A customer can have many services

3.2

Record:Sales_Order(1:1)

A record can be of one sales order
A sales order can be recorded on one record

3.3

Record:Customer(1:1)

A record can be of one customer registration
A customer can have only one registration

Record:Store(M:1)

A record can be about one stores details
A store can have many records

Record:Employee(M:1)

A record can be about one employee
An employee can perform many services to be recorded

Record:Dispatch(1:1)

A record can be made about one dispatch
A dispatch creates one record

Business Constraints

tbl_product_category	
Type	Description
Tyre	A type of tyre
Rim	A type of rim

tbl_title	
Title	Description
Online Frontend	Support the logistics of customer care, processing and dispatching their mobile tyre specialists-based customer emergencies, orders, and updating the product inventory.
Online Backend	Provide technical support
In store Manager	Manage retail assistants and inventory.
In store retail assistant	Service physical customers and place sales orders.

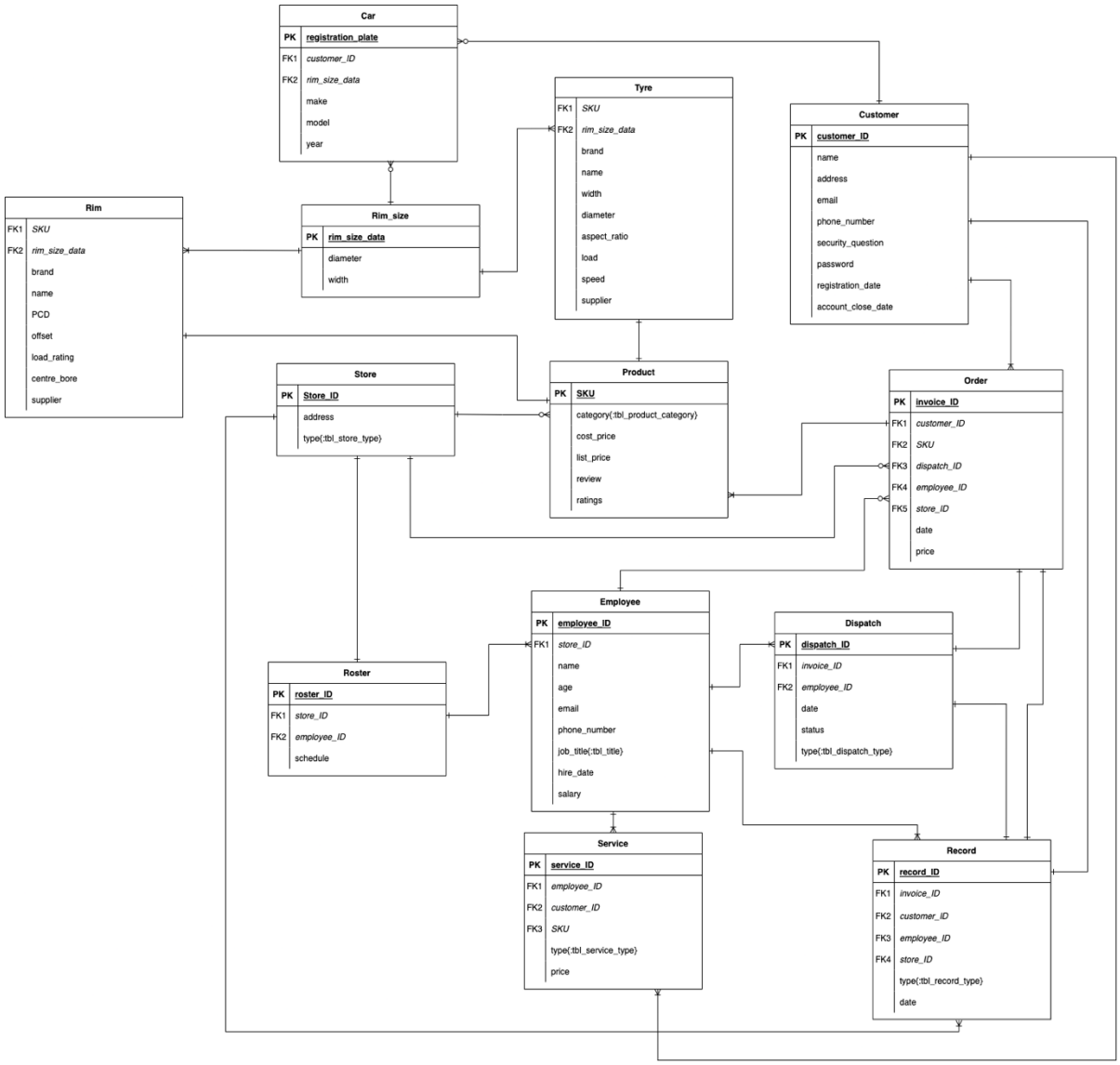
tbl_service_type	
Service	Description
Customer Call	Helping a customer if they have called MobileTyre.
Customer Emergencies	Dispatching their MobileTyre specialists-based customer emergencies
Installation of Tyre/Rim	Employee fitting a tyre/rim in person

tbl_record_type	
Record	Description
Sales Order	Storing a record of each sales order.
Customer Registration	Storing a record of each customer registration
Payment Information	Storing a customer's payment information
Bank Details	The bank details of a specific store

tbl_payment_status	
Status	Description
Paid	Sales order has been paid
Pending	Sales order is waiting on payment
AfterPay	Sales order is being paid in multiple payments
Part payment	Sales order has a deposit

tbl_store_type	
Store	Description
Physical	A physical store to walk into to buy products, fit tyres etc.
Online	The website to buy products online

ER Diagram



5.1

We sourced some of our information through:
TyreSize (https://tiresize.com/chart/)
Beaurepaires https://www.beaurepaires.com.au/tips-advice/tyre-size-guide
The Wheel Deal https://www.thewheeldeal.com.au/

Index of comments

1.1 space out your answers a little bit more so that it's easier to read

1.2 too generic, not that useful

1.3 schedule is a multivalue field - you need to break this down further before this can be useful

1.4 what about startTime, endTime?
Can this be combined with roster?

1.5 ?dispatch is a status of a service

1.6 use singular term for entity where possible

1.7 ? is this necessary

2.1 remove

3.1 choose one

3.2 you need at least to have requested on service to become a customer

3.3 relationship needs some rework here

5.1 your ERD is too small
Should be shown as a full page