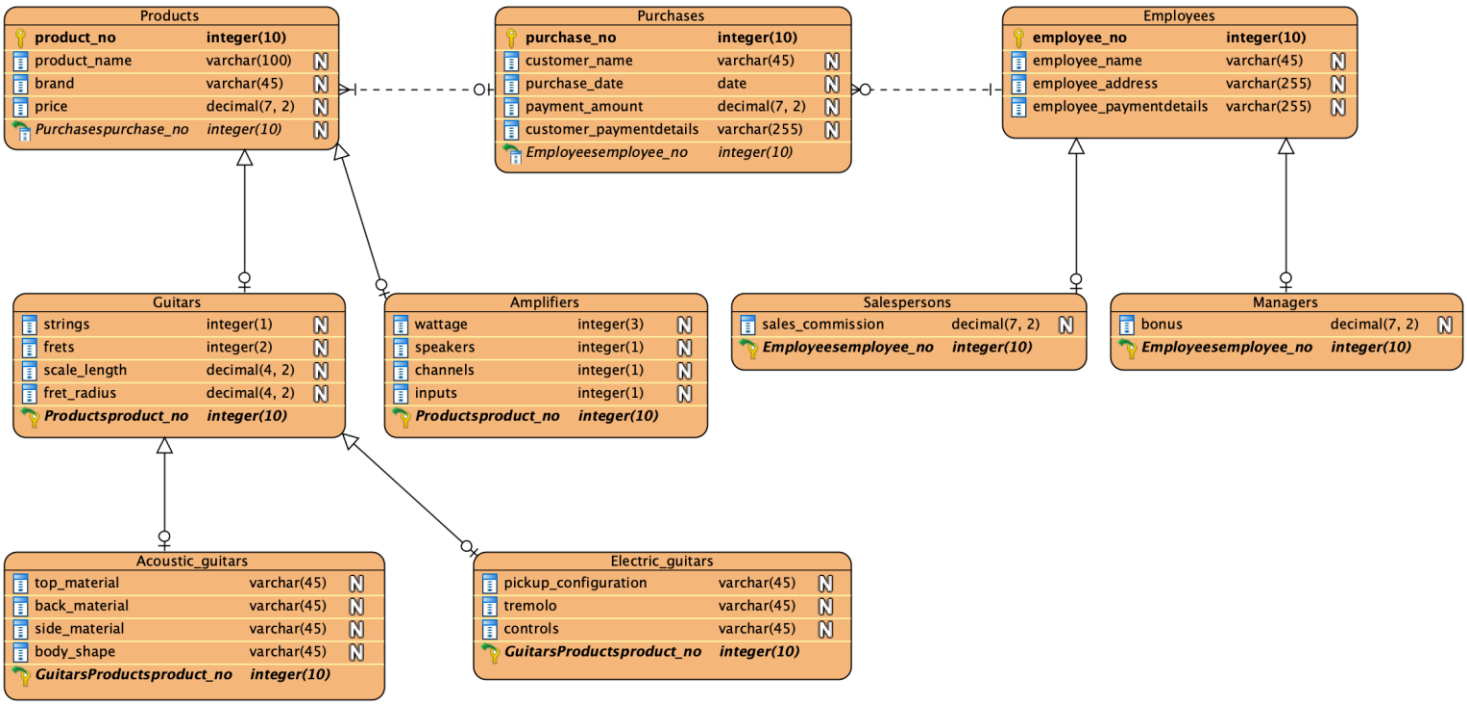
Database Design Coursework Template

Scenario Topic Name: Guitar Store

Scenario:
The database is for a newly opened brick-and-mortar guitar store in London that sells guitars, guitar amplifiers and guitar pedals. The database stores information that allows purchases to be made and recorded. The database also enables employee details to be recorded, meaning that employees can be paid their salaries. Employees are divided into managers and salespersons - managers can receive bonuses and salespersons can receive sales commissions. Finally, the database allows the products that the store stocks to be catalogued. Products are divided into guitars and amplifiers - each with their own unique characteristics.

Example queries:
1) What was the most recent purchase?
2) Which salesperson earns the highest sales commission?
3) What is the most expensive product that the store stocks?
4) Which electric guitars have a scale length of 25.5"?
5) Which amplifiers have two speakers?

Entity Relationship Model



Relational Model Tables

Relational table specification
Table name: Products
Attributes
product_no
product_name
brand
price
Purchasespurchase_no
PRIMARY KEY (product_no)
FOREIGN KEY (Purchasespurchase_no) REFERENCES Purchases (purchase_no)

Relational table specification
Table name: Guitars
Attributes
Productsproduct_no
strings
frets
scale_length
fret_radius
PRIMARY KEY (Productsproduct_no)

Relational table specification
Table name: Acoustic_guitars
Attributes
GuitarsProductsproduct_no
top_material
back_material
side_material
body_shape
PRIMARY KEY (GuitarsProductsproduct_no)

Relational table specification
Table name: Electric_guitars
Attributes
GuitarsProductsproduct_no
pickup_configuration
tremolo
controls
PRIMARY KEY (GuitarsProductsproduct_no)

Relational table specification
Table name: Amplifiers
Attributes
Productsproduct_no
wattage
speakers
channels
inputs
PRIMARY KEY (Productsproduct_no)

Relational table specification
Table name: Purchases
Attributes
purchase_no
customer_name
purchase_date
payment_amount
customer_paymentdetails
Employeesemployee_no
PRIMARY KEY (purchase_no)
FOREIGN KEY (Employeesemployee_no) REFERENCES Employees (employee_no)

Relational table specification
Table name: Employees
Attributes
employee_no
employee_name
employee_address
employee_paymentdetails
PRIMARY KEY (employee_no)

Relational table specification
Table name: Salespersons
Attributes
Employeesemployee_no
sales_commission
PRIMARY KEY (Employeesemployee_no)

Relational table specification
Table name: Managers
Attributes
Employeesemployee_no
bonus
PRIMARY KEY (Employeesemployee_no)