**1. Sales Report for Last Week**

**Scenario:**  
You are managing a retail store, and your manager wants a report of all sales made during the last week. Write a query to retrieve the order ID, customer name, product name, and order date for all orders placed within the last 7 days.

**Tables:**

* **Customers**
  + CustomerID (Primary Key)
  + Name
* **Orders**
  + OrderID (Primary Key)
  + CustomerID (Foreign Key to Customers)
  + Product
  + OrderDate

1. Sales Report for Last Week

SELECT

o.OrderID,

c.Name AS CustomerName,

o.Product,

o.OrderDate

FROM

Orders o

JOIN

Customers c ON o.CustomerID = c.CustomerID

WHERE

o.OrderDate >= DATEADD(day, -7, GETDATE())

AND o.OrderDate < GETDATE();

**2. Subscription Renewal Reminder**

**Scenario:**  
Your company provides monthly subscriptions to customers. You need to send renewal reminders 5 days before their subscription expires. Write a query to fetch the customer name, email, and subscription end date for all customers whose subscriptions expire in the next 5 days.

**Tables:**

* **Customers**
  + CustomerID (Primary Key)
  + Name
  + Email
* **Subscriptions**
  + SubscriptionID (Primary Key)
  + C SustomerID (Foreign Key to Customers)
  + SubscriptionEndDate

Subscription Renewal Reminder

SELECT

c.Name AS CustomerName,

c.Email,

s.SubscriptionEndDate

FROM

Subscriptions s

JOIN

Customers c ON s.CustomerID = c.CustomerID

WHERE

s.SubscriptionEndDate = DATEADD(day, 5, CAST(GETDATE() AS DATE));

**3. Employee Joining Anniversary**

**Scenario:**  
Your HR team wants to celebrate employees' work anniversaries. Write a query to find employees whose joining date matches today (but in any year).

**Tables:**

* **Employees**
  + EmployeeID (Primary Key)
  + Name
  + JoiningDate

Employee Joining Anniversary

SELECT

Name,

JoiningDate

FROM

Employees

WHERE

FORMAT(JoiningDate, 'MM-dd') = F ORMAT(GETDATE(), 'MM-dd');

**4. Calculate Project Deadlines**

**Scenario:**  
Your company tracks project deadlines. Write a query to list all projects that are overdue as of today, including the project name, deadline date, and the number of days overdue.

**Tables:**

* **Projects**
  + ProjectID (Primary Key)
  + ProjectName
  + DeadlineDate

Calculate Project Deadlines

SELECT

p.ProjectName,

p.DeadlineDate,

DATEDIFF(day, p.DeadlineDate, GETDATE()) AS DaysOverdue

FROM

Projects p

WHERE

p.DeadlineDate < GETDATE();

**5. Identify Inactive Customers**

**Scenario:**  
Your business wants to identify customers who have not placed an order in the last 90 days. Write a query to fetch the customer name, last order date, and the number of inactive days for these customers.

**Tables:**

* **Customers**
  + CustomerID (Primary Key)
  + Name
* **Orders**
  + OrderID (Primary Key)
  + CustomerID (Foreign Key to Customers)
  + LastOrderDate

Identify Inactive Customers

SELECT

c.Name AS CustomerName,

o.LastOrderDate,

DATEDIFF(day, o.LastOrderDate, GETDATE()) AS InactiveDays

FROM

Customers c

LEFT JOIN

Orders o ON c.CustomerID = o.CustomerID

WHERE

o.LastOrderDate IS NOT NULL

AND DATEDIFF(day, o.LastOrderDate, GETDATE()) > 90;

**6. Monthly Sales Summary**

**Scenario:**  
Your store tracks orders in the Orders table. Write a query to calculate the total sales amount for each month of the current year, grouped by month.

**Tables:**

* **Orders**
  + OrderID (Primary Key)
  + OrderDate
  + Amount

Monthly Sales Summary

SELECT

MONTH(OrderDate) AS OrderMonth,

SUM(Amount) AS TotalSales

FROM

Orders

WHERE

YEAR(OrderDate) = YEAR(GETDATE())

GROUP BY

MONTH(OrderDate);

**7. Customer Birthday Offers**

**Scenario:**  
You want to send special offers to customers on their birthdays. Write a query to fetch the customer name, email, and date of birth for customers whose birthdays fall today.

**Tables:**

* **Customers**
  + CustomerID (Primary Key)
  + Name
  + Email
  + BirthDate

Customer Birthday Offers

SELECT

c.Name AS CustomerName,

c.Email,

c.BirthDate

FROM

Customers c

WHERE

FORMAT(c.BirthDate, 'MM-dd') = FORMAT(GETDATE(), 'MM-dd');

**8. Predict Delivery Dates**

**Scenario:**  
Your store offers delivery within 10 days of the order date. Write a query to calculate the delivery due date for all orders, showing the order ID, order date, and the calculated delivery due date.

**Tables:**

* **Orders**
  + OrderID (Primary Key)
  + OrderDate

Predict Delivery Dates

SELECT

o.OrderID,

o.OrderDate,

DATEADD(day, 10, o.OrderDate) AS DeliveryDueDate

FROM

Orders o;

**9. Active Membership Duration**

**Scenario:**  
Your fitness club tracks the membership duration of its customers. Write a query to calculate the number of days each customer has been an active member, using their membership start date.

**Tables:**

* **Members**
  + MemberID (Primary Key)
  + Name
  + MembershipStartDate

**Active Membership Duration**

SELECT

m.Name AS MemberName,

m.MembershipStartDate,

DATEDIFF(day, m.MembershipStartDate, GETDATE()) AS ActiveDays

FROM

Members m;

**10. Products Launched in the Current Quarter**

**Scenario:**  
Your company tracks product launch dates. Write a query to fetch the product name and launch date for all products launched in the current quarter.

**Tables:**

* **Products**
  + ProductID (Primary Key)
  + ProductName
  + LaunchDate

Products Launched in the Current Quarter

SELECT

p.ProductName,

p.LaunchDate

FROM

Products p

WHERE

DATEPART(QUARTER, p.LaunchDate) = DATEPART(QUARTER, GETDATE())

AND YEAR(p.LaunchDate) = YEAR(GETDATE());

These questions assess practical applications of date and time functions such as GETDATE(), DATEADD(), DATEDIFF(), FORMAT(), YEAR(), MONTH(), and DAY() in real-world scenarios.