Real-Time Applications of SQL Joins

SQL Joins are critical in almost every industry for combining data from multiple related tables. Below are **real-world scenarios**, **companies using SQL Joins**, and **examples of tables and results**.

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1. **Banking Sector (HDFC, ICICI, Wells Fargo)**

Use Case: Fetch customer transactions along with account details for fraud detection or reporting.

Tables:

Customers Table

CustomerID	Name	Email	Phone
1	Alice	alice@mail.com	1234567890
2	Bob	bob@mail.com	9876543210

Accounts Table

AccountID	CustomerID	AccountType	Balance
A101	1	Savings	5000
A102	2	Current	12000

Transactions Table

TransactionID	AccountID	Date	Amount
T201	A101	2023-01-15	200
T202	A102	2023-01-18	500

SQL Query

Retrieve customer details, account balances, and transaction amounts.

```sql
SELECT Customers.Name AS CustomerName, Accounts.AccountType, Accounts.Balance,
Transactions.Amount AS TransactionAmount, Transactions.Date AS TransactionDate FROM
Customers INNER JOIN Accounts ON Customers.CustomerID = Accounts.CustomerID INNER JOIN
Transactions ON Accounts.AccountID = Transactions.AccountID;
```

Result

CustomerName	AccountType	Balance	TransactionAmount	TransactionDate
Alice	Savings	5000	200	2023-01-15
Bob	Current	12000	500	2023-01-18

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2. **Healthcare Sector (Apollo, Fortis, Mayo Clinic)**

Use Case: Link patient records with doctor consultations and prescriptions.

Tables:

Patients Table

PatientID	Name	Age	Gender
101	Alice	35	Female
102	Bob	42	Male

Consultations Table

ConsultationID	PatientID	DoctorID	Date
C201	101	D301	2023-01-10
C202	102	D302	2023-01-12

Doctors Table

DoctorID	Name	Specialization
D301	Dr. Smith	Cardiology
D302	Dr. Johnson	Neurology

SQL Query

List patient names, consultation dates, and their doctors' details.

sql Copy code

```
SELECT Patients.Name AS PatientName, Consultations.Date AS ConsultationDate,
Doctors.Name AS DoctorName, Doctors.Specialization FROM Patients INNER JOIN
```

```
Consultations ON Patients.PatientID = Consultations.PatientID INNER JOIN Doctors ON
Consultations.DoctorID = Doctors.DoctorID;
```

Result

PatientName	ConsultationDate	DoctorName	Specialization
Alice	2023-01-10	Dr. Smith	Cardiology
Bob	2023-01-12	Dr. Johnson	Neurology

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3. **Ride-Sharing Companies (Uber, Lyft, Ola)**

Use Case: Fetch driver details and their completed ride information.

Tables:

Drivers Table

DriverID	Name	CarModel	Rating
D101	Alice	Toyota Corolla	4.9
D102	Bob	Honda Civic	4.8

Rides Table

RideID	DriverID	Distance	Fare	Date
R201	D101	10	200	2023-01-15
R202	D102	20	400	2023-01-16

SQL Query

Fetch driver names, car models, and ride details (distance, fare, date).

sql Copy code

```
SELECT Drivers.Name AS DriverName, Drivers.CarModel, Rides.Distance, Rides.Fare,
Rides.Date AS RideDate FROM Drivers INNER JOIN Rides ON Drivers.DriverID =
```

```
Rides.DriverID;
```

Result

DriverName	CarModel	Distance	Fare	RideDate
Alice	Toyota Corolla	10	200	2023-01-15
Bob	Honda Civic	20	400	2023-01-16

Companies Using SQL Joins

1. **E-Commerce:** Amazon, Flipkart, Walmart.
2. **Banking/Finance:** HDFC, ICICI, Wells Fargo.
3. **Healthcare:** Apollo, Fortis, Mayo Clinic.
4. **Ride-Sharing:** Uber, Lyft, Ola.
5. **Social Media:** Facebook, Instagram (for friend suggestions and mutual connections).
6. **Telecom:** AT&T, Vodafone (for customer details and service usage).