

## ◆ Assignment 1: Employee Management

### Dataset: Employees

EmpID	Name	Department	Salary	HireDate
1	Rajesh	IT	60000	2019-01-15
2	Sneha	HR	45000	2020-03-22
3	Aarav	Finance	55000	2021-07-11
4	Kavita	IT	75000	2018-09-30
5	Meera	Finance	50000	2022-05-10

### Tasks

1. Find employees who joined **before 2020**.

*Select \* from Employees where Year<'2020-03-22'*

2. Get **average salary per department**.

*Select avg(Salary) as Avg\_salary from Employees group by department*

3. Find the **highest-paid employee** in IT.

*Select max(Salary) as high\_salary from Employees where Department='IT'*

*Select Name, Department, Salary from Employees where Department='IT' order by salary desc limit 1*

4. Display employees sorted by **HireDate (earliest first)**.

*Select \* from employees order by HireDate asc*

5. Add a column Experience (in years).

*Alter table Employees add Experience integer*

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## ◆ Assignment 2: Sales Database

### Dataset: Sales

SaleID	Customer	Product	Quantity	Price	SaleDate
1	Ramesh	Laptop	2	50000	2024-01-05
2	Priya	Mouse	5	800	2024-01-06
3	Arjun	Laptop	1	50000	2024-01-08
4	Sneha	Keyboard	3	2000	2024-01-10
5	Rajesh	Monitor	2	12000	2024-01-12

### Tasks

1. Find **total sales value per customer**.

*Select Customer, sum(Quantity\*Price) as Total\_sales from Sales group by Customer*

2. Get the **most sold product**.

*Select Customer, Product, sum(Quantity) as most\_sold from Sales group by Product order by most\_sold desc limit 1*

3. Show sales where **quantity > 2**.

*Select \* from Sales where Quantity>2*

4. Find customers who purchased **Laptops**.

*Select \* from Sales where Product='Laptop'*

5. Calculate **total revenue**.

*Select sum(Quantity\*Price) as Total\_revenue from Sales*

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### ◆ Assignment 3: Library System

#### Dataset: Books

BookID	Title	Author	Genre	Price	PublishedYear
1	SQL Fundamentals	John Smith	Education	500	2019

BookID	Title	Author	Genre	Price	PublishedYear
2	Python Basics	Jane Doe	Education	600	2020
3	The Great Escape	R. Sharma	Fiction	300	2021
4	Data Science Guide	A. Kapoor	Education	700	2022
5	Mystery House	Sneha Verma	Mystery	350	2021

### Tasks

1. List all books published after **2020**.

*Select \* from Books where PublishedYear>2020*

2. Find the **most expensive book**.

*Select Title, Price from Books order by desc limit 1*

3. Count the number of books by **genre**.

*Select Genre, Count(Genre) as Book\_Count from Books group by Genre*

4. Get authors who have written **Education books**.

*Select Author from Books where Genre='Education'*

*Select DISTINCT Author From Books where Genre = 'Education'*

5. Find books priced between **300 and 600**.

*Select \* from Books where Price between 300 and 600*

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### ◆ Assignment 4: Online Orders

#### Dataset: Orders

OrderID	Customer	OrderDate	Status	Amount
1	Anil	2024-03-01	Delivered	2500

OrderID	Customer	OrderDate	Status	Amount
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2	Meera	2024-03-02	Cancelled	1800
3	Ramesh	2024-03-04	Pending	3500
4	Sneha	2024-03-05	Delivered	1200
5	Rajesh	2024-03-07	Delivered	5000

### Tasks

1. Find all **Delivered orders**.

*Select Customer from Orders where Status='Delivered'*

*Select DISTINCT Customer From Orders where Status= 'Delivered'*

2. Get **total revenue from delivered orders**.

*Select sum(Amount) as Total\_revenue from Orders where Status='Delivered'*

3. Find customers with orders **above 3000**.

Select \* from Orders where Amount>3000

4. Count orders by **status**.

*Select Status, count(Status) from Orders group by Status*

5. Display **top 2 highest order amounts**.

*Select \* from Orders order by Amount desc limit 2*

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### ◆ Assignment 5: Advanced (String + Window Functions)

#### Dataset: Customers

CustID	Name	Email	City	Spend
1	Rahul Sharma	<a href="mailto:rahul.sharma@gmail.com">rahul.sharma@gmail.com</a>	Delhi	12000

CustID	Name	Email	City	Spend
2	Sneha Kapoor	<a href="mailto:sneha@outlook.com">sneha@outlook.com</a>	Mumbai	18000
3	Aarav Mehta	<a href="mailto:aarav@@gmail.com">aarav@@gmail.com</a>	Pune	8000
4	Priya Nair	<a href="mailto:priya.nair@yahoo.com">priya.nair@yahoo.com</a>	Bangalore	15000
5	Vivek Patel	<a href="mailto:vivek@company.org">vivek@company.org</a>	Delhi	22000

## Tasks

- Find customers with **invalid emails** (@@ or missing .).

*Select \* from Customers where Email Like '%@@%' or Email Not Like '%. %'*

- Get **top 2 spenders in each city** (use ROW\_NUMBER()).

*Select Name, Email, City, Spend from (Select Name, Email, City, Spend, Row\_number() over (partition by City order by Spend desc) as tp from Customers)t where tp<=2*

- Show customers whose name **starts with 'A'**.

*Select \* from Customers where Name Like 'A%'*

- Find **average spend per city**.

*Select City, avg(Spend) as avg\_spend from Customers group by city*

- Create a column Tier → **Gold if Spend > 15000, Silver if 10000–15000, Bronze otherwise.**

*Alter table Customers add Tier varchar(max)*

*Update Customers set Tier= Case*

*When Spend>15000 then 'Gold'*

*When Spend between 10000 and 15000 then 'Silver'*

*Else 'Bronze'*

*End*

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