SQL Assignment 3

1. List all columns for all employees in the 'Engineering' department (DepartmentID = 1).

```
select * from Employees
where DepartmentID in(select DepartmentID from Departments where DeptName
="Engineering")
```

Output

EmployeeID	FirstName	LastName	DepartmentID	HireDate	Salary
101	Alice	Johnson	1	2022-01-15	75000
103	Charlie	Davis	1	2023-03-10	58000

2. Find the names of all departments located in 'Chicago'.

```
select DeptName from Departments
where Location ="Chicago"
```

Output

DeptName
Marketing

3. Show the total number of projects currently marked as 'Active'.

```
select count(Status) as total_number_of_projects_currently_Active from Projects
where Status ="Active";
```

Output

total_number_of_projects_currently_Active
2

4. List the unique last names of all employees, sorted alphabetically.

```
select LastName from Employees
order by LastName ASC
```

Output

LastName
Davis
Hunt
Johnson
Prince
Smith

5. Retrieve the FirstName and LastName of employees who earn more than $65,000 and were hired after January 1st, 2021.

```
select FirstName, LastName from Employees
where Salary > 65000 and HireDate >"2021-01-01"
```

Output

FirstName	LastName
Alice	Johnson

6. Calculate the average salary for each department; display the DepartmentID and the average salary.

```
select d.DepartmentID, avg(e.Salary) as average_salary from Employees e
join Departments d
on e.DepartmentID=d.DepartmentID
group by d.DepartmentID
```

Output

DepartmentID	average_salary
1	66500
2	63000
3	90000

7. List the ProjectName and the lead employee's FirstName by joining the Projects and Employees tables.

```
select FirstName,ProjectName from Employees e
join Projects p
on e.EmployeeID=p.LeadEmployeeID
```

Output

FirstName	ProjectName
Alice	Alpha Tech
Diana	Beta Cloud
Bob	Gamma SEO
Alice	Delta Mobile

8. Find all employees who are not currently leading any project.

```
select FirstName from Employees
where EmployeeID not in (select LeadEmployeeID from Projects)
```

Output

FirstName
Charlie
Ethan

9. Show the names of departments that have no employees assigned to them.

```sql
select d.DeptName from Departments d
left join Employees e
on d.DepartmentID=e.DepartmentID
where e.DepartmentID is null
```

Output

DeptName
Sales

10. Find the employee(s) with the highest salary and display their full name and salary amount.

```sql
select  FirstName, LastName, max(Salary) as Salary from Employees
```

Output

FirstName	LastName	Salary
Diana	Prince	90000

11. Calculate the total budget for all projects led by employees in the 'Engineering' department.

```
select sum(p.Budget)as total_budget, d.DeptName from Employees e
join Departments d
on e.DepartmentID=d.DepartmentID
join Projects p
on e.EmployeeID=p.LeadEmployeeID
where d.DeptName ="Engineering"
```

Output

total_budget	DeptName
230000	Engineering

12. List all departments that have more than one employee, along with the count of employees in each.

```
select d.DeptName, count(e.EmployeeID) from Employees e
join Departments d
on e.DepartmentID=d.DepartmentID
group by d.DeptName
having count(e.EmployeeID)>1
```

Output

DeptName	count(e.EmployeeID)
Engineering	2
Marketing	2