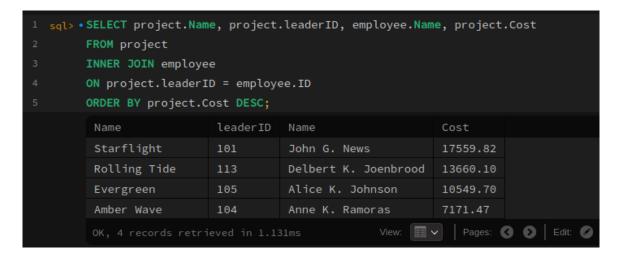# Database Systems Homework 5

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1. List all projects with full name of the project leaders and cost sorted from highest to lowest

```
1  sql> • SELECT project.Name, project.leaderID, employee.Name, project.Cost
2         FROM project
3         INNER JOIN employee
4         ON project.leaderID = employee.ID
5         ORDER BY project.Cost DESC;
```

Name	leaderID	Name	Cost
Starflight	101	John G. News	17559.82
Rolling Tide	113	Delbert K. Joenbrood	13660.10
Evergreen	105	Alice K. Johnson	10549.70
Amber Wave	104	Anne K. Ramoras	7171.47

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2. List all projects and their the average working hours per employee

```
• SELECT p.Name, AVG(a.Hours) AS AverageHours
  FROM assignment AS a
  INNER JOIN project AS p ON a.PID = p.ID
  GROUP BY p.Name;
```

Name	AverageHours
Evergreen	23.060000
Amber Wave	36.575000
Rolling Tide	34.300000
Starflight	36.471429

3. List all employees and their total working hours (over all projects they are assigned to)

```sql
SELECT e.Name, SUM(a.Hours) AS TotalHours
FROM assignment AS a
INNER JOIN employee AS e ON a.EID = e.ID
GROUP BY e.Name;
```

Name	TotalHours
John G. News	75.70
David H. Senior	23.80
June E. Arbough	23.80
Alice K. Johnson	100.40
William Smithfield	25.40
Anne K. Ramoras	80.80
Darlene M. Smithson	85.40
Annelise Jones	57.70
James F. Frommer	75.80
Geoff B. Wabash	22.00
Delbert K. Joenbrood	23.60
Maria D. Alonzo	24.60
Ralph B. Washington	23.60
Travis B. Biwangi	45.80

4. List all employees and their total charges (over all projects they are assigned to)

```sql
SELECT e.Name, SUM(Charge) as TotalCharge
FROM assignment AS a
INNER JOIN employee as e
on a.EID = e.ID
GROUP BY e.Name;
```

Name	TotalCharge
John G. News	3235.20
David H. Senior	2302.65
June E. Arbough	2011.10
Alice K. Johnson	10542.00
William Smithfield	908.05
Anne K. Ramoras	7818.40
Darlene M. Smithson	3912.10
Annelise Jones	3220.26
James F. Frommer	1519.79
Geoff B. Wabash	591.14
Delbert K. Joenbrood	1135.16
Maria D. Alonzo	876.57
Ralph B. Washington	3196.56
Travis B. Biwangi	4311.15

5. List every job title and the number of employees having that job

```sql
SELECT j.Title, COUNT(e.Name) as numEmployee
FROM job AS j
INNER JOIN employee as e
on j.ID = e.jobID
GROUP BY j.Title;
```

Title	numEmployee
Database Designer	2
Systems Analyst	4
Elec. Engineer	1
Programmer	2
Clerical Support	1
DSS Analyst	1
Applications Designer	2
General Support	1

6. List all employees working for at least 2 projects

```sql
SELECT e.Name, COUNT(e.Name) as numProjects
FROM assignment AS a
INNER JOIN employee as e
on a.EID = e.ID
GROUP BY e.Name
HAVING numProjects > 1;
```

Name	numProjects
John G. News	2
Alice K. Johnson	2
William Smithfield	2
Anne K. Ramoras	2
Darlene M. Smithson	2
Annelise Jones	2
James F. Frommer	2

7. List every job and its average payment per employee

```sql
SELECT Title, AVG(Charge) as averagePayment
FROM job AS j
INNER JOIN employee as e
INNER JOIN assignment as a
on a.EID = e.ID
on j.ID = e.jobID
GROUP BY Title;
```

Title	averagePayment
Database Designer	3444.300000
Systems Analyst	3525.752000
Elec. Engineer	2011.100000
Programmer	594.873333
DSS Analyst	1956.050000
Applications Designer	1451.806667
General Support	759.895000
Clerical Support	591.140000

8. List the job having the highest average payment per employee

```sql
SELECT Title, AVG(Charge) as averagePayment
FROM job AS j
INNER JOIN employee as e
INNER JOIN assignment as a
on a.EID = e.ID
on j.ID = e.jobID
GROUP BY Title
ORDER BY averagePayment DESC
LIMIT 1;
```

Title	averagePayment
Systems Analyst	3525.752000

9. List 2 employees with the highest total working hours

```sql
SELECT Name, SUM(Hours) as totalHours
FROM employee AS e
INNER JOIN assignment AS a
on a.EID = e.ID
GROUP BY Name
ORDER BY totalHours DESC
LIMIT 2;
```

Name	totalHours
Alice K. Johnson	100.40
Darlene M. Smithson	85.40