SQL Queries for Company Database

Here are the SQL queries for the given scenarios:

1. List project numbers for projects involving an employee's last project:

SQL

```sql
SELECT PNo
FROM WORKS_ON w1
INNER JOIN (
  SELECT SSN, MAX(PNo) AS LastPNo
  FROM WORKS_ON
  GROUP BY SSN
) w2 ON w1.SSN = w2.SSN
WHERE w1.PNo = w2.LastPNo;
```

This query uses a subquery to find the highest project number (LastPNo) for each employee (SSN) in the WORKS_ON table. Then, it joins the main WORKS_ON table (w1) with the subquery result to find projects where the project number (PNo) matches the employee's last project number (LastPNo).

2. Show resulting salaries with a percentage raise for all employees:

SQL

```sql
SELECT SSN, Name, Address, Sex, Salary * (1 + RaisePct/100) AS
NewSalary
FROM EMPLOYEE,
(SELECT VALUE RaisePct FROM SomeTable) AS Raise;  -- Replace SomeTable
with actual raise percentage table
```

This query assumes you have a separate table (SomeTable) containing the raise percentage (RaisePct) value. It multiplies the current salary with (1 + RaisePct/100) to calculate the new salary after the raise.

3. Salaries, min, max, and average for 'Accounts' department:

SQL

```sql
SELECT e.Salary,
       MIN(e.Salary) AS MinSalary,
       MAX(e.Salary) AS MaxSalary,
       AVG(e.Salary) AS AvgSalary
FROM EMPLOYEE e
INNER JOIN DEPARTMENT d ON e.DNo = d.DNo
WHERE d.DName = 'Accounts';
```

This query joins the EMPLOYEE and DEPARTMENT tables to identify employees in the 'Accounts' department. It then calculates the minimum, maximum, and average salaries for those employees.

4. Employees working on all projects of department number 5:

SQL

```sql
SELECT e.Name
FROM EMPLOYEE e
WHERE NOT EXISTS (
  SELECT 1
  FROM PROJECT p
  WHERE p.DNo = 5 AND NOT EXISTS (
    SELECT 1
    FROM WORKS_ON w
    WHERE w.SSN = e.SSN AND w.PNo = p.PNo
  )
);
```

This query uses the NOT EXISTS operator to find employees who **do not have** a record in the WORKS_ON table for **any** project (PNo) belonging to department number 5 (DNo). This effectively identifies employees who work on all projects controlled by department number 5.

5. Departments with more than 5 employees making over Rs. 6,00,000:

SQL

```sql
SELECT d.DNo, COUNT(e.SSN) AS NumEmployees
FROM DEPARTMENT d
INNER JOIN EMPLOYEE e ON e.DNo = d.DNo
WHERE e.Salary > 600000
GROUP BY d.DNo
```

```
HAVING COUNT(e.SSN) > 5;
```

This query joins the DEPARTMENT and EMPLOYEE tables. It then filters for employees making more than Rs. 6,00,000 and groups them by department number (DNo). Finally, it uses the HAVING clause to select departments with more than 5 employees (NumEmployees) who meet the salary criteria.