1. Translate the following SQL query to relational algebra expression

   > **SELECT** Lname, Fname
   > **FROM** EMPLOYEE
   > **WHERE** Salary > (**SELECT MAX** (Salary)
   > **FROM** EMPLOYEE **WHERE** Dno=5);

2. Discuss the reasons for converting SQL queries into relational algebra queries before optimization is done.
3. Discuss semi-join and anti-join as operations to which nested queries may be mapped, provide an example of each.
4. How are large tables that do not fit in memory sorted? Give the overall procedure.
5. Draw the initial query tree for each of these queries?
   a. **SELECT** Lname, Fname **FROM** EMPLOYEE **WHERE** Salary > (**SELECT MAX** (Salary) **FROM** EMPLOYEE **WHERE** Dno=5);

   b. **SELECT** Ssn, Dname
      FROM EMPLOYEE, DEPARTMENT;