

SQL QUERIES

```
1)
SELECT Registered.e-mail,Resume.salary
FROM Registered R1,Resume R2
WHERE R1.Registered_PREFERRED_Disciplines="Computer Engineering"
      AND R1.Authorised_Country="Germany"
      AND R1.e-mail=R2.e-mail;

2)
SELECT R.Name
FROM Recruiter R
WHERE R.RegNo IN (SELECT U.RegNo
                  FROM University U
                  WHERE U.RegNo IN (SELECT A.RegNo
                                    FROM Activity A
                                    WHERE A.Category="A"
                                    AND A.RegNo IN (SELECT C.RegNo
                                                    FROM Conference C)));

3)
SELECT J.RecruiterName
FROM JobAd J
WHERE NOT EXISTS (SELECT JA.Visit
                  FROM JobAd JA);

6)
SELECT AVG(R.Salary)
FROM Resume R
WHERE EXISTS (SELECT PRD.MainCategory
              FROM Registered_PREFERRED_Disciplines PRD
              PRD.e-mail=R.e-mail)
      AND R.e-mail=PRD.e-mail
ORDER BY Salary ASC

7)
SELECT T.trainer,T.title,Count(T.Program)
FROM Training T
WHERE EXISTS (SELECT E.RegNo
              FROM Enrol E
              HAVING Count(*)>30)
      AND T.RegNo=E.RegNo

8)
SELECT R.Name,R.Surname
FROM Registered R
WHERE NOT EXISTS (SELECT RE.e-mail
                  FROM Resume RE)
      AND R.e-mail=RE.e-mail

9)
SELECT R.Name,R.Surname
FROM Registered R
WHERE EXISTS (SELECT A.e-mail
              FROM Authorised_Country A
              WHERE R.Nation!=A.Country)
      AND R.e-mail=A.e-mail
```

ANSWERS BY RELATIONAL ALGEBRA

$$4) \pi_{Name} \left(\sigma_{RegNo} \text{ Research Institute} \bowtie \sigma_{RegNo} \text{ Workshop} \right)$$

$$5) \pi_{Name} \left(\pi_{e-mail} \left(\left[\sigma_{JobId} \text{ Apply-For} \right] \bowtie \pi_{JobId} \left[\sigma_q \text{ JobAd} \right] \right) \right)$$

$q : (\text{Subcategory} = \text{"Biology"}) \wedge (\text{Recruiter Name} = \text{"Meta"})$

$$6) O \left(salary A \left[\sigma_{e-mail} \text{ Resume} \bowtie \pi_{e-mail} \left(\sigma_{mainCat} \text{ Reg.Ar. Discip} \right) \right] \right)$$

O: Order by ascending, salary A: Take average by salary attribute.
(After ordering, second row is the answer in solution table)

$$7) \pi_{name, title, C(\text{program})} \left(\sigma_{RegNo} \text{ Training} \bowtie \sigma_{C(users) > 30} \text{ Enrol} \right)$$

C: count (aggregate function), \bowtie : Left Outer join

$$8) \pi_{Name, Surname} \left(\sigma_{C(q)=0} \text{ Registered} \right), q = \sigma_{e-mail} \text{ Resume}$$

C: count

$$9) \pi_{Name, Surname} \left(\sigma_{e-mail} \text{ Registered} \bowtie \pi_{e-mail} \left(\sigma_q \text{ Authorized-Country} \right) \right)$$

$q : \text{Registered.Notion} \neq \text{Authorized-Country.Country}$