Answer on Question#43083 - Programming – Other

Consider the relations
EMPLOYEE(emp#, name)
ASSIGNED_TO(project#, emp#)
PROJECT(project#, project_name, chief)
Express the following queries in Relational Algebra

(i) Get details of employee working on both comp354 and comp345 project numbers.

Solution:
Set table EMPLOYEE to E, and set table ASSIGNED_TO to A.
Select employees working on projects comp354 and comp345 from table A:
$\sigma_{project\#=comp354 \wedge project\#=comp345}(A)$
Join obtained table with table E on the basis of emp#:
$E \bowtie_{(E.emp\#=A.emp\#)} \sigma_{project\#=comp354 \wedge project\#=comp345}(A)$
Finally, select employee details from obtained table:
$\pi_{emp\#,name}(E \bowtie_{(E.emp\#=A.emp\#)} \sigma_{project\#=comp354 \wedge project\#=comp345}(A))$

Answer:
$\pi_{emp\#,name}(E \bowtie_{(E.emp\#=A.emp\#)} \sigma_{project\#=comp354 \wedge project\#=comp345}(A))$
SQL query for this:
SELECT * FROM EMPLOIGNED_TO ON EMPLOYEE.EMPNO=ASSIGNED_TO.EMPNO WHERE ASSIGNED_TO.PNO='comp345' OR ASSIGNED_TO.PNO='comp354';

(ii)Find the employee number of employee who do not work on project comp678.

Solution:
Set table EMPLOYEE to E, and set table ASSIGNED_TO to A.
Select employees not working on project comp678:
$\sigma_{project\#\neg comp678}(A)$
Join obtained table with table E on the basis of emp#:
$E \bowtie_{(E.emp\#=A.emp\#)} \sigma_{project\#\neg comp678}(A)$
Finally, select employee number from obtained table:
$\pi_{emp\#}(E \bowtie_{(E.emp\#=A.emp\#)} \sigma_{project\#\neg comp678}(A))$

Answer:
$\pi_{emp\#}(E \bowtie_{(E.emp\#=A.emp\#)} \sigma_{project\#\neg comp678}(A))$

SQL query for this:
SELECT EMPLOYEE.EMPNO FROM EMPLOYEE JOIN ASSIGNED_TO ON EMPLOYEE.EMPNO=ASSIGNED_TO.EMPNO WHERE ASSIGNED_TO.PNO!='comp678';