Lab 2

Tuesday, October 6, 2020 12:05 PM

1. Relational Algebra

a) $\pi_{sid, sname}(\sigma_{Reserves.bid = 103}(Sailors \bowtie Reserves))$

b) $\pi_{sid, sname}(\sigma_{Boats.color = 'red'}(Sailors \bowtie Reserves \bowtie Boats))$

c) $\pi_{sid, sname}(\sigma_{Boats.color = 'red' \vee Boats.color = 'green'}(Sailors \bowtie Reserves \bowtie Boats))$

d) $\pi_{sid, sname}(\sigma_{color='red'}(Sailors \bowtie Reserves \bowtie Boats)) \cap \pi_{sid, sname}(\sigma_{color='green'}(Sailors \bowtie Reserves \bowtie Boats))$

2. Relational Algebra

a) $\pi_{student.id, student.name}(\sigma_{course.dept\_name = "Comp. Sci"}(student \bowtie takes \bowtie course))$

b) $\pi_{student.id, student.name}(student \bowtie takes) - \pi_{student.id, student.name}(\sigma_{takes.year < 2019}(student \bowtie takes))$

3. Relational Algebra

a) $\pi_{employee.eid, employee.ename, employee.street, employee.city}(\sigma_{company.cname = "FirstBankCorporation" \wedge works.salary > 10000}(employees \bowtie works \bowtie (\pi_{cid, cname}(company))))$

b) $\pi_{employee.eid, employee.ename}(employee \bowtie works \bowtie company)$

c) $\pi_{e1.eid, e1.ename, e2.eid, e2.ename}(\sigma_{e1.street = e2.street \wedge e1.city = e2.city \wedge e1.eid \neq e2.eid}(\rho_{e1}(employee) \times \rho_{e2}(employee)))$

d) $\pi_{ename}(\sigma_{eid = manager\_id}(\pi_{manager\_id}(\pi_{eid}(\sigma_{ename='peter\ Parker'}(employee)) \bowtie manages) \times \rho_{e2}(employee)))$