Project Report

Databse Management System

Group_7

April 21, 2015

Queries and their Relational Algebric Expression

Qu-1- List name,guest-id of families and company check_in on 12-01-2015 ?

Ans- Relational Algebra-

$r1 \leftarrow \sigma_{check\_in\_date=12-01-2015}(family \bowtie_{family.guest\_id=Allot.guest\_id} Allot)$

$r2 \leftarrow \sigma_{check\_in\_date=12-01-2015}(company \bowtie_{company.guest\_id=Allot.guest\_id} Allot)$

$r3 \leftarrow (r1 \cup r2)$

$r4 \leftarrow \pi_{Headssn,Cname}(r3)$

Qu-2- List out No. of rooms that are vacant?

Ans- Relational Algebra-

$r1 \leftarrow \sigma_{status.occupied='False'}(Allot)$

$r2 \leftarrow \pi_{room-no.}(r1)$

Qu-3- List out No. of rooms that are Full?

Ans- Relational Algebra-

$r1 \leftarrow \sigma_{status.occupied='True'}(Allot)$

$r2 \leftarrow \pi_{room-no.}(r1)$

Qu-4- List out guest_id with their room-no. that are of family type ?

Ans- Relational Algebra-

$r1 \leftarrow (family \bowtie Allot)$

$r2 \leftarrow \pi_{room-no.}(r1)$

Qu-5- List out the facility_id used by guest that lives in room-no = A101 ?

Ans- Relational Algebra-

$r1 \leftarrow \sigma_{room-no.=A101}(Allot)$

$r2 \leftarrow \pi_{guest\_id}(r1)$

$r3 \leftarrow (r2 \bowtie_{r2.guest\_id=Uses.guest\_id} Uses)$

$r4 \leftarrow \pi_{facility\_id}(r3)$

Qu-6- List out most frequent facility type used by guests ?

Ans- Relational Algebra-

$r1(max - count) \leftarrow F_{count(facility\_id)}(uses \bowtie facility)$

$r2 \leftarrow F_{max(max-count)}(r1)$

Qy-7- Count the occurence of family ?

Ans- Relational Algebra -

$r1 \leftarrow F_{count(Head\_ssn)}(family)$

Qu-8- List out the guest_id who have room type = $'superior'$?

Ans- Relational Algebra-

$r1 \leftarrow \sigma_{type='superior-suite'}(Room)$

$r2 \leftarrow \pi_{guest\_id}(Allot \bowtie_{Allot.room-no.=r1.room-no,} r1)$

Qu-9- Total amount paid by company type guest ?

Ans- Relational Algebra-

$r1 \leftarrow F_{sum(amount)}(company \bowtie bill)$

Qu-10- Total amount paid by family type guest ?

Ans- Relational Algebra-

$r1 \leftarrow F_{sum(amount)}(family \bowtie bill)$

Qu-11- Total amount from both company and families ?

Ans- Relational Algebra-

$r1 \leftarrow F_{sum(amount)}(bill)$

Qu-12- List out Name of company with most number of guest ?

Ans- Relational Algebra-

$r1 \leftarrow (company \bowtie_{company.name=company\_members.cname} company\_members)$

$r2(guest\_id, count) \leftarrow_{guest\_id} F_{guest\_id,count(cname)}(r1)$

$r3 \leftarrow F_{max(count)}(r2)$

Qu-13- List out all the guest_id who have not acquired any room?

Ans- Relational Algebra -

$r1 \leftarrow \pi_{guest\_id}(guest)$

$r1 \leftarrow \pi_{guest\_id}(Allot)$

$r3 \leftarrow (r1 - r2)$

$r1 \leftarrow \pi_{guest\_id}(r3)$

Qu-14- Most profitable customer, guest_id of family type ?

Ans- Relational Algebra-

$r1 \leftarrow Bill \bowtie family$

$r2(max) \leftarrow F_{max(count)}(r1)$

$r3 \leftarrow \pi_{guest\_id}(r2 \bowtie Bill)$

Qu-15- Most profitable customer, guest_id of company type ?

Ans- Relational Algebra-

$r1 \leftarrow Bill \bowtie company$

$r2(max) \leftarrow F_{max(count)}(r1)$

$r3 \leftarrow \pi_{guest\_id}(r2 \bowtie Bill)$