

Rename

1

Unary Relational Operations: RENAME

The RENAME operator is denoted
by ρ (rho)



In some cases, we may want to *rename* the attributes of a relation or the relation name or both

- Useful when a query requires multiple operations
- Necessary in some cases (see JOIN operation later)

2

Unary Relational Operations: RENAME (continued)

- The general RENAME operation ρ can be expressed by any of the following forms:
 - $\rho_S(B_1, B_2, \dots, B_n)(R)$ changes both:
 - the relation name to S , *and*
 - the column (attribute) names to B_1, B_2, \dots, B_n
 - $\rho_S(R)$ changes:
 - the *relation name* only to S
 - $\rho_{(B_1, B_2, \dots, B_n)}(R)$ changes:
 - the *column (attribute) names* only to B_1, B_2, \dots, B_n

3

Ambiguous Attribute Names

- Same name can be used for two (or more) attributes in different relations
 - As long as the attributes are in different relations
 - Must **qualify** the attribute name with the relation name to prevent ambiguity

Q1A: **SELECT** Fname, EMPLOYEE.Name, Address
 FROM EMPLOYEE, DEPARTMENT
 WHERE DEPARTMENT.Name='Research' **AND**
 DEPARTMENT.Dnumber=EMPLOYEE.Dnumber;

4

Aliasing, and Renaming

- **Aliases or tuple variables**

- Declare alternative relation names E and S to refer to the EMPLOYEE relation twice in a query:

Query 8. For each employee, retrieve the employee's first and last name and the first and last name of his or her immediate supervisor.

```
SELECT E.Fname, E.Lname, S.Fname, S.Lname
FROM EMPLOYEE AS E, EMPLOYEE AS S
WHERE E.Super_ssn=S.Ssn;
```

- Recommended practice to abbreviate names and to prefix same or similar attribute from multiple tables.

5

Aliasing, Renaming and Tuple Variables (contd.)

- The attribute names can also be renamed

```
EMPLOYEE AS E (Fn, Mi, Ln,
Ssn, Bd, Addr, Sex, Sal,
Sssn, Dno)
```

- Note that the relation EMPLOYEE now has a variable name E which corresponds to a tuple variable
- The "AS" may be dropped in most SQL implementations

6

Figure 8.2 Results of a sequence of operations. (a) $\pi_{\text{Fname, Lname, Salary}}(\sigma_{\text{Dno}=5}(\text{EMPLOYEE}))$.
 (b) Using intermediate relations and renaming of attributes.

(a)

Fname	Lname	Salary
John	Smith	30000
Franklin	Wong	40000
Ramesh	Narayan	38000
Joyce	English	25000

(b)

TEMP

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
John	B	Smith	123456789	1965-01-09	731 Fondren, Houston, TX	M	30000	333445555	5
Franklin	T	Wong	333445555	1955-12-08	638 Voss, Houston, TX	M	40000	888665555	5
Ramesh	K	Narayan	666884444	1962-09-15	975 Fire Oak, Humble, TX	M	38000	333445555	5
Joyce	A	English	453453453	1972-07-31	5631 Rice, Houston, TX	F	25000	333445555	5

R

First_name	Last_name	Salary
John	Smith	30000
Franklin	Wong	40000
Ramesh	Narayan	38000
Joyce	English	25000