## Reference

**The Relational-Algebra Operators.**

$\sigma$ : selection
$\pi$ : projection
$\bowtie$ : join
$\times$ : cross product
$\cup$ : union
$\cap$ : intersection
$-$ : difference
$\rho$ : rename

## Schema for the Retail Database

| Supplier | |
|---|---|
| Id | PK |
| name | |
| City | |
| Country | |
| Phone | |
| Fax | |

| Product | |
|---|---|
| productId | PK |
| name | |
| supllierId | FK to Supplier |
| unitPrice | |

| OrderItem | |
|---|---|
| orderId | PK, FK to Order |
| productId | PK, FK to Product |
| qnty | |

| Order | |
|---|---|
| order# | PK |
| date | |
| cust# | FK to Customer |

| Customer | |
|---|---|
| cust# | PK |
| fistName | |
| lastName | |
| email | |
| city | |
| country | |
| phone | |

Figure 1

## Schema for the Retail Database

**Actor**(act_id, *act_fname*, *act_lname*)

**Director**(dir_id, *dir_fname*, *dir_lname*)

**Movie**(mov_id, *mov_title*, *mov_year*, mov_length, mov_lang)

**Genre**(gen_id, *title*)

**Reviewer**(rev_id, *rev_name*)

**Movie_Cast**(act_id, mov_id, role)

FK act_id refs **Actor**

FK mov_id refs **Movie**

**Movie_Direction**(dir_id, mov_id)

FK dir_id refs **Director**

FK mov_id refs **Movie**

**Movie_Genre**(mov_id, gen_id)

FK mov_id refs **Movie**

FK gen_id refs **Genre**

**Rating**(mov_id, rev_id, *rev_stars*, comment)

FK mov_id refs **Movie**

FK rev_id refs **Reviewer**

Figure 2