4.2.3. Advanced Relational Algebra

$(\bowtie, \bowtie)$

3. List descriptions of products that haven't been sold

$$\text{SOLD\_PRODUCT} = \pi_{\text{PROD\_NO}}\text{SALE}$$

$$\text{ALL} = \pi_{\text{PROD\_NO}}\text{PRODUCT}$$

$$\text{ANSWER} = \pi_{\text{PROD\_DESC}}((\text{ALL} - \text{SOLD\_PRODUCT}) \bowtie \text{PRODUCT})$$

4. List names of clerks who don't have any sales yet

$$\text{CUST\_NAME} = \pi_{\text{CUST\_ID}}\text{CUSTOMER}$$

$$\text{CUST\_SALE} = \pi_{\text{CUST\_ID}}\text{SALE}$$

$$\text{ANSWER} = \pi_{\text{CUST\_NAME}} (\text{CUST\_NAME} - \text{CUST\_SALE}) \bowtie \text{CUSTOMER}$$

5. List categories (positions) of staff who have made sales

$$\text{STAFF} = \pi_{\text{STAFF\_NAME}}\text{STAFF}$$
$$\text{STAFF\_SALES} = \pi_{\text{SOLD\_BY}}\text{SALE}$$
$$\text{ANSWER} = \pi_{\text{STAFF\_POSITION}}((\text{STAFF} \cap \text{STAFF\_SALES}) \bowtie \text{STAFF})$$