

# SE2222 – Assignment3

## Exercise

**Example:** Given the relation  $r$  and  $Person$ , find

$$\pi_{A, C}(r)$$

A	B	C
$\alpha$	10	2
$\alpha$	20	2
$\beta$	30	2
$\beta$	40	4

Relation  $r$

$$\pi_{Age, Weight}(Person)$$

Name	Age	Weight
Harry	34	180
Sally	28	164
George	28	170
Helena	54	154
Peter	34	180

Relation  $Person$

1.

## Exercise

**Example:** Given the relation  $r$ , find

A	B	C	D
$\alpha$	$\alpha$	1	7
$\alpha$	$\beta$	5	7
$\beta$	$\beta$	12	3
$\beta$	$\beta$	23	10

Relation  $r$

$$\sigma_{(A=B) \wedge (D>5)}(r)$$

2.

## Exercise

**Example:** Given the relations  $r$  and  $s$ , find  $r \times s$

A	B
$\alpha$	1
$\beta$	2

Relation  $r$

C	D	E
$\alpha$	10	+
$\beta$	20	+
$\beta$	20	-
$\gamma$	10	-

Relation  $s$

3.

# Combining Operations to Form Queries

title	year	length	genre	studioName	producerC#
Star Wars	1977	124	sciFi	Fox	12345
Galaxy Quest	1999	104	comedy	DreamWorks	67890
Wayne's World	1992	95	comedy	Paramount	99999

**Exercise:** “What are the titles and years of movies made by Fox that are at least 100 minutes long?”

4.

## Exercise

The example database schema consists of four relations:

- **Product**(maker, model, type)
- **PC**(model, speed, ram, hd, price)
- **Laptop**(model, speed, ram, hd, screen, price)
- **Printer**(model, color, type, price)

Write expressions of relational algebra to answer the following queries.

- What PC models have a speed of at least 3.00?
- Find those manufacturers (i.e., makers) who make Laptops but not PC's.
- Find the model and price of all products made by manufacturer B (i.e., maker='B').

5.