

2.4.1 f) $\pi_{hd}(\sigma_{type='PC'}(hd) = \sigma_{type='PC'}(hd))$

2.4.1 g) $\pi_{speed,ram}((\sigma_{type='PC'}(speed) = \sigma_{type='PC'}(ram)) - (\sigma_{type='PC'}(ram \bowtie Speed)))$

2.4.1 h) $\pi_{maker} \bowtie (\pi_{model}(\sigma_{type='PC'}(speed) > 2.80) \text{ AND } \pi_{model}(\sigma_{type='Laptop'}(speed) > 2.80))$

2.4.1 i) $\pi_{maker} \bowtie (\pi_{model}(\sigma_{type='PC'}(speed) \text{ AND } \pi_{model}(\sigma_{type='Laptop'}(speed)))$

2.4.1 j) $\pi_{maker} \bowtie (\pi_{model}(\sigma_{type='PC'}(speed))$

2.4.1 k) $\pi_{maker} \bowtie (\pi_{model}(\sigma_{type='PC'}(speed))$

6.1.2 a)

SELECT address

FROM Studio

WHERE name = 'MGM'

6.1.2 c)

SELECT starName

FROM StarsIn

WHERE movieTitle LIKE '%Love%' OR movieYear = 1980;

6.1.3 a)

SELECT model, speed, hd

FROM PC

WHERE price < 1000;

6.1.3 b)

SELECT model, Speed AS gigahertz , hd AS gigabytes

FROM PC

WHERE price < 1000;

6.1.3 c)

SELECT maker

FROM Product

WHERE type = printer;

6.1.3 d)

SELECT model, ram, screen

FROM Laptop

WHERE price > 1500;

6.1.4 a)

SELECT class, country

FROM Classes

WHERE numGuns > 10;

6.1.4 b)

```
SELECT name AS shipname
FROM Ships
WHERE launched < 1918;
```

6.1.4 c)

```
SELECT battle, ship
FROM Outcomes
WHERE result = 'sunk';
```

6.1.4 d)

```
SELECT name
FROM Ships
WHERE name = class;
```

6.1.4 e)

```
SELECT name
FROM Ships
WHERE name LIKE 'R%';
```

6.2.1 a)

```
SELECT name
FROM StarsIn, MovieStar
WHERE StarsIn.StarName= MovieStar.name AND gander = 'male' AND MovieTitle = 'titanic';
```

6.2.1 b)

```
SELECT StarName
FROM StarsIn, Movies
WHERE Movies.title = StarsIn.movietitle AND name = 'MGM' AND year = 1995;
```

6.2.1 c)

```
SELECT MovieExec.name AS name
FROM MovieExec, Studio
WHERE MovieExec.cert# = Studio.PresC# AND name = 'MGM';
```

```
SELECT name
FROM MovieExec
WHERE cert# IN (SELECT PresC# FROM Studio WHERE name = 'MGM');
```

6.2.1 d)

```
SELECT title
FROM Movies
WHERE length > (SELECT length FROM Movies WHERE title = 'Gone With The Wind');
```

```
SELECT m1.title
FROM Movies m1, Movies m2
WHERE m1.length > m2.length AND m2.title = 'Gone With The Wind';
```

6.2.1 e)

```
SELECT name
FROM MovieExec
WHERE NetWorth > (SELECT networth FROM MovieExec WHERE name = 'Merv Griffin');
```

6.3.8

```
SELECT maker, model, price, type
FROM Product, PC
WHERE Product.model = PC.model
UNION
SELECT maker, model, price, type
FROM Product, Laptop
WHERE Product.model = Laptop.model
UNION
SELECT maker, model, price, type
FROM Product, Printer
WHERE Product.model = Printer.model
```

6.3.9

```
SELECT name, Ships.class, launched, type, country, numGuns, bore, displacement
FROM Classes, Ships
WHERE Classes.class = Ships.class;
```

6.3.10

```
SELECT*
FROM Classes.C,Ships.S
WHERE C.class = S.class;
```

```
SELECT name, Ships.class, launched, type, country, numGuns, bore, displacement
FROM Classes, Ships
WHERE Classes.class = Ships.class;
```

Table 1

```
Name, department
name1    dep1
Name2    dep2
```

Table 2

```
DepartmentID, Location
dep2, First Floor
```

dep3, second floor

```
SELECT Name, Department, DepartmentID, Location
FROM Table 1
FULL OUTER JOIN Table 2
ON table1.department = table2.DepartmentID
```

Result:

```
Name, Department, DepartmentID, Location
Name1, dep1, NULL, NULL
Name2, dep2, dep2, First Floor
NULL, NULL, dep3, second floor
```

6.3.11 a)

```
SELECT*
FROM R,S
WHERE R Intersect S;
```

6.3.11 b)

```
SELECT*
FROM R,S
WHERE (R Union S) - R Intersect S;
```

6.3.11 c)

```
SELECT C
FROM R,S
WHERE R Union S;
```

6.3.1 a)

```
SELECT maker
FROM Product
WHERE model = ANY(SELECT model FROM PC WHERE speed >= 3.0)
```

```
SELECT maker
FROM Product
WHERE model IN (SELECT model FROM PC WHERE speed >= 3.0);
```

```
SELECT maker
FROM Product
WHERE EXISTS (SELECT model FROM PC WHERE speed >= 3.0 AND Product.model =
PC.model);
```

6.3.1 c)

SELECT model

FROM Laptop

WHERE speed IN(SELECT speed FROM PC WHERE PC.speed > Laptop.seed);

SELECT model

FROM Laptop

WHERE Laptop.speed < ANY(SELECT speed FROM PC);

SELECT model

FROM Laptop

WHERE EXISTS(SELECT speed FROM PC WHERE PC.speed > Laptop.seed);