

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);