

Exercise 6.1.3

- a) Find the model number, speed and hard-disk size for all PCs whose price is under \$1000

model	speed	hd
1002	2.10	250
1003	1.42	80
1004	2.8	250
1005	3.2	250
1007	2.2	200
1008	2.2	250
1009	2.00	250
1010	2.8	300
1011	1.86	160
1012	2.80	160
1013	3.06	80

```
SELECT model, speed, hd
FROM pc
WHERE price < 1000;
```

```
SELECT DISTINCT maker
FROM product
WHERE type = 'printer';
```

- c) Find the manufacturers of printers

```
SELECT DISTINCT maker
FROM product
WHERE type = 'printer'
ORDER BY maker;
```

maker
E
D
H

d) Find the model number, memory size and screen size for laptops costing more than \$1500

model	ram	Screen
2001	2048	20.1
2005	1024	17
2006	2048	15.4
2010	2048	15.4

```
SELECT model, ram, screen
FROM laptop
WHERE price > 1500;
```

6.2.2: b, c, e

b) Find the model number and price of all products (of any type) made by manufacturer B

```
(SELECT pr.model, p.price
FROM product pr, pc p
WHERE pr.maker = 'B' AND pr.model = p.model)
UNION
(SELECT pr.model, l.price
FROM product pr, laptop l
WHERE pr.maker = 'B' AND pr.model = l.model)
UNION
(SELECT pr.model, pt.price
FROM product pr, printer pt
WHERE pr.maker = 'B' AND pr.model = pt.model);
```

model	price
1004	649
1005	630
1006	1049
2007	1429

```
SELECT model, price
FROM pc
WHERE model IN (SELECT model FROM product WHERE maker='B')
UNION
SELECT model, price
FROM laptop
WHERE model IN (SELECT model FROM product WHERE maker='B')
UNION
SELECT model, price
FROM printer
WHERE model IN (SELECT model FROM product WHERE maker='B');
```

6.2.2

c) Find those manufacturers that sell laptops, but not PCs

```
(SELECT      pr.maker
FROM        laptop l, product pr
WHERE       l.model = pr.model )
EXCEPT
(SELECT      pr.maker
FROM        pc p, product pr
WHERE       p.model = pr.model);
```

maker
F
G

```
SELECT DISTINCT maker
FROM product
WHERE type='laptop' AND maker NOT IN (SELECT maker FROM product WHERE type='pc');
```

e) Find those pairs of PC models that have both the same Speed and RAM, listed once.

```
SELECT pc1.model, pc2.model
FROM pc pc1, pc pc2
WHERE (pc1.speed = pc2.speed AND
      pc1.ram = pc2.ram AND
      pc1.model < pc2.model);
```

```
SELECT pc1.model, pc2.model
FROM pc pc1, pc pc2
WHERE pc1.speed=pc2.speed AND pc1.ram=pc2.ram AND pc1.model<pc2.model;
```

pc1.model	pc2.model
1004	1012

6.3.1: a, b, c, e page 279

a) Find the makers of PC: with a speed of at least 3.0

```
SELECT DISTINCT maker
FROM product
WHERE model IN (SELECT model
                  FROM pc
                  WHERE speed >= 3.0);
```

maker
B
E

```
SELECT DISTINCT maker
FROM product
WHERE model IN (SELECT model FROM pc WHERE speed >= 3.0);
```

b) Find the printer's with the highest price

```
SELECT model
FROM printer
WHERE price >= ALL (SELECT price FROM printer);
```

model
3003

```
SELECT model
FROM printer
WHERE price >= ALL (SELECT price FROM printer);
```

c) Find the laptops whose speed is slower than that any PC

```
SELECT model
FROM laptop
WHERE speed <= ANY (SELECT speed FROM pc);
```

model
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010

```
SELECT model
FROM laptop
WHERE speed < ANY (SELECT speed FROM pc);
```

e) Find the maker of the color printer with the lowest price

```
SELECT DISTINCT maker
FROM product
WHERE model IN (SELECT model
                 FROM printer
                 WHERE color = true AND
                 price <= ALL (SELECT price
                              FROM printer))
);
```

maker
E

```
SELECT DISTINCT maker
FROM product
WHERE model IN (SELECT model FROM printer WHERE color=1 AND price<=ALL
                (SELECT price FROM printer));
```