

SQL skills

Description

Training site where answers are not available before you solve the task.

Data base description:

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

The Product table contains data on the maker, model number, and type of product ('PC', 'Laptop', or 'Printer'). It is assumed that model numbers in the Product table are unique for all makers and product types. Each personal computer in the PC table is unambiguously identified by a unique code, and is additionally characterized by its model (foreign key referring to the Product table), processor speed (in MHz) – speed field, RAM capacity (in Mb) – ram, hard disk drive capacity (in Gb) – hd, CD-ROM speed (e.g, '4x') – cd, and its price. The Laptop table is similar to the PC table, except that instead of the CD-ROM speed, it contains the screen size (in inches) – screen. For each printer model in the Printer table, its output type ('y' for color and 'n' for monochrome) – color field, printing technology ('Laser', 'Jet', or 'Matrix') – type, and price are specified.

Tasks & Solutions Examples

Find the makers producing PCs but not laptops.

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

Find the printer models having the highest price.

Result set: model, price.

```
SELECT model, price
FROM printer
WHERE price =
(
    SELECT MAX(price)
    FROM printer
)
```

Find out the average speed of the PCs produced by maker A.

```
SELECT AVG (pc.speed)
FROM pc
LEFT JOIN product ON product.model = pc.model
WHERE maker = 'A'
```

Get hard drive capacities that are identical for two or more PCs. Result set: hd.

```
SELECT hd
FROM pc
GROUP BY hd
HAVING COUNT (hd) >= 2
```

Get pairs of PC models with identical speeds and the same RAM capacity. Each resulting pair should be displayed only once, i.e. (i, j) but not (j, i).

Result set: model with the bigger number, model with the smaller number, speed, and RAM.

```
SELECT DISTINCT pc.model, subq.model, pc.speed, pc.ram
FROM pc,
(
    SELECT model, speed, ram
    FROM pc
) AS subq
WHERE pc.ram = subq.ram AND pc.speed = subq.speed
AND subq.model < pc.model
ORDER BY pc.model DESC
```

Find the makers of the cheapest color printers. Result set: maker, price.

```
SELECT DISTINCT maker, price
FROM product a
INNER JOIN printer b ON a.model = b.model
WHERE color = 'y' AND price =
(
    SELECT MIN (price)
    FROM printer
    WHERE color = 'y'
)
```