

T5a Joukko-operaatioita – Set operations

T5a_Q1

1 p

Hae perunalajikkeiden eri värit (colour). Kukin eri väri esiintyy tulostaulussa vain kerran. Lajittele tulosrivit nousevaan järjestykseen värin perusteella.

Retrieve the different colours of the potato varieties. Each different colour should appear only once in the result table.

Sort the result rows in ascending order by the colour.

Tulossarakkeet – Result columns:

colour

```
SELECT DISTINCT colour
FROM potato
ORDER BY colour;
```

```
color
-----
blue
cream
white
yellow
```

T5a_Q2

1 p

Hae saksalaisten ja suomalaisten perunankasvattajien nimet. Käytä kyselyssäsi IN-operaattoria.

Lajittele tulosrivit kasvattajan nimen mukaan nousevaan järjestykseen.

Retrieve the names of German and Finnish potato breeders. Use the IN operator in your query. Sort the result rows in ascending order by the breeder name.

Tulossarakkeet – Result columns:

breeder_name

```
SELECT breeder_name
FROM breeder
WHERE country IN ('Germany', 'Finland')
ORDER BY breeder_name;
```

```
breeder_name
-----
Kartoffelmeister
Penan pottu
Sipsix
```

T5a_Q3

2 p

Hae tunnukset ja nimet niille perunankasvattajille, jotka kasvattavat sekä Dunbar Rover että Duke of York -nimistä perunalajiketta.
Lajittele tulossrivit kasvattajan tunnuksen perusteella nousevaan järjestykseen.

Retrieve IDs and names for those potato breeders who breed both potato varieties named Dunbar Rover and Duke of York.
Sort the result rows in ascending order by breeder ID.

Tulossarakkeet – Result columns:
breeder_id | breeder_name

```
SELECT br.breeder_id breeder_id, breeder_name
FROM breeder br, breeds brs, potato p
WHERE br.breeder_id = brs.breeder_id AND
      brs.potato_id = p.potato_id AND
      p.potato_name = 'Dunbar Rover'
INTERSECT
SELECT br.breeder_id breeder_id, breeder_name
FROM breeder br, breeds brs, potato p
WHERE br.breeder_id = brs.breeder_id AND
      brs.potato_id = p.potato_id AND
      p.potato_name = 'Duke of York'
ORDER BY breeder_id;
```

```
SELECT br.breeder_id, breeder_name
FROM breeder br, breeds brs, potato p
WHERE br.breeder_id = brs.breeder_id AND
      brs.potato_id = p.potato_id AND
      p.potato_name = 'Dunbar Rover'
INTERSECT
SELECT br.breeder_id, breeder_name
FROM breeder br, breeds brs, potato p
WHERE br.breeder_id = brs.breeder_id AND
      brs.potato_id = p.potato_id AND
      p.potato_name = 'Duke of York'
ORDER BY 1;
```

breeder_id	breeder_name
1	Chips

T5a_Q4

1 p

Hae tunnukset ja nimet niille kasvattajille, jotka kasvattavat Dunbar Rover -nimistä perunalajiketta mutta eivät kasvat Duke of York -nimistä perunalajiketta.
Lajittele tulossrivit kasvattajan tunnuksen perusteella nousevaan järjestykseen.

Retrieve IDs and names for those breeders who breed the potato variety named Dunbar Rover but do not breed the potato variety named Duke of York.
Sort the result rows in ascending order by breeder ID.

Tulossarakkeet – Result columns:
breeder_id | breeder_name

```

SELECT br.breeder_id breeder_id, breeder_name
FROM breeder br, breeds brs, potato p
WHERE br.breeder_id = brs.breeder_id AND
      brs.potato_id = p.potato_id AND
      p.potato_name = 'Dunbar Rover'
EXCEPT
SELECT br.breeder_id, breeder_name
FROM breeder br, breeds brs, potato p
WHERE br.breeder_id = brs.breeder_id AND
      brs.potato_id = p.potato_id AND
      p.potato_name = 'Duke of York'
ORDER BY breeder_id;

```

```

SELECT br.breeder_id, breeder_name
FROM breeder br, breeds brs, potato p
WHERE br.breeder_id = brs.breeder_id AND
      brs.potato_id = p.potato_id AND
      p.potato_name = 'Dunbar Rover'
EXCEPT
SELECT br.breeder_id, breeder_name
FROM breeder br, breeds brs, potato p
WHERE br.breeder_id = brs.breeder_id AND
      brs.potato_id = p.potato_id AND
      p.potato_name = 'Duke of York'
ORDER BY 1;

```

breeder_id	breeder_name
4	Penan pottu