Primary Key と Foreign Key の宣言

//default-storage-engine = InnoBD

//department station テーブルの作成、Primary Key の付与(departmentID stationID)

[challenge_db]> create table department

    -> (departmentID int not null primary key, departmentName varchar(255));

[challenge_db]> create table station

    -> (stationID int not null primary key, stationName varchar(255));

```
MariaDB [(none)]> use challenge_db;
Database changed
MariaDB [challenge_db]> create table department
    -> (departmentID int not null primary key, departmentName varchar(255));
Query OK, 0 rows affected (0.03 sec)

MariaDB [challenge_db]> create table station
    -> (stationID int not null primary key, stationName varchar(255));
Query OK, 0 rows affected (0.05 sec)
```

//department station テーブルにレコードの挿入

[challenge_db]> insert into department value(1, '開発部');

//以下同様にして挿入

```
MariaDB [challenge_db]> insert into department value(1, '開発部');
Query OK, 1 row affected (0.02 sec)

MariaDB [challenge_db]> insert into department value(2, '営業部');
Query OK, 1 row affected (0.01 sec)

MariaDB [challenge_db]> insert into department value(3, '総務部');
Query OK, 1 row affected (0.01 sec)

MariaDB [challenge_db]> insert into station value(1, '九段下');
Query OK, 1 row affected (0.02 sec)

MariaDB [challenge_db]> insert into station value(2, '永田町');
Query OK, 1 row affected (0.01 sec)

MariaDB [challenge_db]> insert into station value(3, '渋谷');
Query OK, 1 row affected (0.01 sec)

MariaDB [challenge_db]> insert into station value(4, '神保町');
Query OK, 1 row affected (0.01 sec)

MariaDB [challenge_db]> insert into station value(5, '上井草');
Query OK, 1 row affected (0.01 sec)
```

//user テーブルの作成、Primary Key の付与(userID)

[challenge_db]> create table user(

    -> userID int not null primary key,

    -> name varchar(255), tell varchar(255), age int, birthday date,

    -> departmentID int, stationID int

    ->);

```
MariaDB [challenge_db]> create table user(
    -> userID int not null primary key,
    -> name varchar(255), tell varchar(255), age int, birthday date,
    -> departmentID int, stationID int
    -> );
Query OK, 0 rows affected (0.06 sec)
```

//user テーブルの departmentID stationID に Foreign Key を付与

[challenge_db]> alter table user add

    -> foreign key(departmentID) references department(departmentID);

//以下同様にして stationID にも付与

```
MariaDB [challenge_db]> alter table user add
    -> foreign key(departmentID) references department(departmentID);
Query OK, 0 rows affected (0.08 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [challenge_db]> alter table user add
    -> foreign key(stationID) references station(stationID);
Query OK, 0 rows affected (0.13 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

//user テーブルにレコードを挿入

[challenge_db]> insert into user value(

    -> 1, '田中 実', '012-345-6789', 30, '1994-02-01', 3, 1);

//以下同様にしてレコードを挿入

```
MariaDB [challenge_db]> insert into user value(
    -> 1, '田中 実', '012-345-6789', 30, '1994-02-01', 3, 1);
Query OK, 1 row affected (0.00 sec)

MariaDB [challenge_db]> insert into user value(
    -> 2, '鈴木 茂', '090-1122-3344', 37, '1987-08-12', 3, 4);
Query OK, 1 row affected (0.01 sec)

MariaDB [challenge_db]> insert into user value(
    -> 3, '鈴木 実', '080-5566-7788', 24, '2000-12-24', 2, 5);
Query OK, 1 row affected (0.01 sec)

MariaDB [challenge_db]> insert into user value(
    -> 4, '佐藤 清', '012-0987-6543', 19, '2005-08-01', 1, 5);
Query OK, 1 row affected (0.01 sec)

MariaDB [challenge_db]> insert into user value(
    -> 5, '高橋 清', '090-9900-1234', 24, '2000-12-24', 3, 5);
Query OK, 1 row affected (0.01 sec)
```

//全件検索、確認

[challenge_db]> select * from user;

//以下同様に検索

```
MariaDB [challenge_db]> select * from user;
+--------+-----------+----------------+------+------------+--------------+-----------+
| userID | name      | tell           | age  | birthday   | departmentID | stationID |
+--------+-----------+----------------+------+------------+--------------+-----------+
|      1 | 田中 実   | 012-345-6789   |   30 | 1994-02-01 |            3 |         1 |
|      2 | 鈴木 茂   | 090-1122-3344  |   37 | 1987-08-12 |            3 |         4 |
|      3 | 鈴木 実   | 080-5566-7788  |   24 | 2000-12-24 |            2 |         5 |
|      4 | 佐藤 清   | 012-0987-6543  |   19 | 2005-08-01 |            1 |         5 |
|      5 | 高橋 清   | 090-9900-1234  |   24 | 2000-12-24 |            3 |         5 |
+--------+-----------+----------------+------+------------+--------------+-----------+
5 rows in set (0.00 sec)

MariaDB [challenge_db]> select * from department;
+--------------+----------------+
| departmentID | departmentName |
+--------------+----------------+
|            1 | 開発部         |
|            2 | 営業部         |
|            3 | 総務部         |
+--------------+----------------+
3 rows in set (0.02 sec)

MariaDB [challenge_db]> select * from station;
+-----------+-------------+
| stationID | stationName |
+-----------+-------------+
|         1 | 九段下      |
|         2 | 永田町      |
|         3 | 渋谷        |
|         4 | 神保町      |
|         5 | 上井草      |
+-----------+-------------+
5 rows in set (0.00 sec)
```

[追記]

//カラムの Null 及び Key を見ると付与されているのが確認できる。

[challenge_db]> show columns from user;

```
MariaDB [challenge_db]> show columns from user;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| userID       | int(11)      | NO   | PRI | NULL    |       |
| name         | varchar(255) | YES  |     | NULL    |       |
| tell         | varchar(255) | YES  |     | NULL    |       |
| age          | int(11)      | YES  |     | NULL    |       |
| birthday     | date         | YES  |     | NULL    |       |
| departmentID | int(11)      | YES  | MUL | NULL    |       |
| stationID    | int(11)      | YES  | MUL | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
7 rows in set (0.02 sec)
```