

Javaカリキュラム

データベース基礎 課題

Primary Key と Foreign Keyの宣言

MySQL使用コマンド記述

1. テーブル作成を行う **user department station** の3つのテーブルを作成
※同時に**Primary Key**（主キー）と**Foreign Key**（外部キー）を設定

Primary Key = プライマリーキー制約が設定されたカラムには重複する値は格納不可。
NULLも格納できない。

Foreign Key = テーブルの指定したカラムに格納できる値を他のテーブルに
格納されている値だけに限定する。

```
CREATE TABLE department(departmentID int Primary Key,departmentName varchar(255))  
ENGINE=InnoDB;
```

```
CREATE TABLE station(stationID int Primary Key,stationName varchar(255))  
ENGINE=InnoDB;
```

```
CREATE TABLE user(userID int,name varchar(255),tell varchar(255),age int,  
birthday date,departmentID int,stationID int,Foreign Key(departmentID)REFERENCES  
department(departmentID),Foreign Key(stationID)REFERENCES station(stationID))  
ENGINE=InnoDB;
```

2.INSERTでテーブル名の情報更新

2-1 departmentテーブル更新

```
INSERT INTO department VALUES(1,'開発部');  
INSERT INTO department VALUES(2,'営業部');  
INSERT INTO department VALUES(3,'総務部');
```

2-2 stationテーブル更新

```
INSERT INTO station VALUES(1,'九段下');  
INSERT INTO station VALUES(2,'永田町');  
INSERT INTO station VALUES(3,'渋谷');  
INSERT INTO station VALUES(4,'神保町');  
INSERT INTO station VALUES(5,'上井草');
```

2-3 userテーブル更新

```
INSERT INTO user VALUES(1,'田中 実','012-345-6789',30,19940201,3,1);  
INSERT INTO user VALUES(2,'鈴木 茂','090-1122-3344',37,19870812,3,4);  
INSERT INTO user VALUES(3,'鈴木 実','080-5566-7788',24,20001224,2,5);  
INSERT INTO user VALUES(4,'佐藤 清','012-0987-6543',19,20050801,1,5);  
INSERT INTO user VALUES(5,'高橋 清','090-9900-1234',24,20001224,3,5);
```

3 要素表示(user department stationテーブルを表示)

SELECT * FROM user;

SELECT * FROM department;

SELECT * FROM station;

```
mysql -u saito -p
MariaDB [Challenge_db]> INSERT INTO department VALUES(1,'開発部');
Query OK, 1 row affected (0.00 sec)

MariaDB [Challenge_db]> INSERT INTO department VALUES(2,'営業部');
Query OK, 1 row affected (0.01 sec)

MariaDB [Challenge_db]> INSERT INTO department VALUES(3,'総務部');
Query OK, 1 row affected (0.01 sec)

MariaDB [Challenge_db]> INSERT INTO department VALUES(3,'総務部');
ERROR 1062 (23000): Duplicate entry '3' for key 'PRIMARY'
MariaDB [Challenge_db]> INSERT INTO station VALUES(1,'九段下');
Query OK, 1 row affected (0.02 sec)

MariaDB [Challenge_db]> INSERT INTO station VALUES(2,'永田町');
Query OK, 1 row affected (0.00 sec)

MariaDB [Challenge_db]> INSERT INTO station VALUES(3,'渋谷');
Query OK, 1 row affected (0.00 sec)

MariaDB [Challenge_db]> INSERT INTO station VALUES(4,'神保町');
Query OK, 1 row affected (0.01 sec)

MariaDB [Challenge_db]> INSERT INTO station VALUES(5,'上井草');
Query OK, 1 row affected (0.01 sec)

MariaDB [Challenge_db]> INSERT INTO station VALUES(5,'上井草');
ERROR 1062 (23000): Duplicate entry '5' for key 'PRIMARY'
MariaDB [Challenge_db]> _
```

```
mysql -u saito -p
Setting environment for using XAMPP for Windows.
metar@DESKTOP-CODN52N c:\xampp
# mysql -u saito -p
Enter password: *****
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 4
Server version: 10.1.21-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2016, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> USE Challenge_db;
Database changed
MariaDB [Challenge_db]> CREATE TABLE department(departmentID int Primary Key,departmentName varchar(255))
-> ENGINE=InnoDB;
Query OK, 0 rows affected (0.03 sec)

MariaDB [Challenge_db]> CREATE TABLE station(stationID int Primary Key,stationName varchar(255))
-> ENGINE=InnoDB;
Query OK, 0 rows affected (0.01 sec)

MariaDB [Challenge_db]> CREATE TABLE user(userID int,name varchar(255),tell varchar(255),age int,
-> birthday date,departmentID int,stationID int,Foreign Key(departmentID) REFERENCES department(departmentID),Foreign Key(stationID) REFERENCES station(stationID))
-> ENGINE=InnoDB;
Query OK, 0 rows affected (0.03 sec)

MariaDB [Challenge_db]> _
```

```
mysql -u saito -p
MariaDB [Challenge_db]> INSERT INTO user VALUES(1, '田中 実', '012-345-6789', 30, 19940201, 3, 1);
Query OK, 1 row affected (0.02 sec)

MariaDB [Challenge_db]> INSERT INTO user VALUES(2, '鈴木 茂', '090-1122-3344', 37, 19870812, 3, 4);
Query OK, 1 row affected (0.00 sec)

MariaDB [Challenge_db]> INSERT INTO user VALUES(3, '鈴木 実', '080-5566-7788', 24, 20001224, 2, 5);
Query OK, 1 row affected (0.00 sec)

MariaDB [Challenge_db]> INSERT INTO user VALUES(4, '佐藤 清', '012-0987-6543', 19, 20050801, 1, 5);
Query OK, 1 row affected (0.00 sec)

MariaDB [Challenge_db]> INSERT INTO user VALUES(5, '高橋 清', '090-9900-1234', 24, 20001224, 3, 5);
Query OK, 1 row affected (0.00 sec)

MariaDB [Challenge_db]>
```

```
mysql -u saito -p
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 (0.00 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)

MariaDB [Challenge_db]>
```