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JAVA SPRINGBOOT

ASSIGNMENT 2 (WEEK 2)

MYSQL

CREATE DATABASE

```
mysql> create database javaspringboot;
Query OK, 1 row affected (0.01 sec)

mysql> use javaspringboot;
Database changed
mysql>
```

CREATE TABLE

```
mysql> create table department(
    -> dept_name varchar(20),
    -> building varchar(20),
    -> budget numeric(12,2) check(budget>0),
    -> primary key(dept_name)
    -> );
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> create table student(
    -> id varchar(5),
    -> name varchar(20) not null,
    -> dept_name varchar(20),
    -> tot_cred numeric(3,0) check(tot_cred>=0),
    -> primary key(id),
    -> foreign key (dept_name) references department(dept_name)
    -> );
Query OK, 0 rows affected (0.05 sec)
```

INSERT RECORDS

```
mysql> insert into department values('computer science','sjt',1234);
Query OK, 1 row affected (0.02 sec)

mysql> insert into department values('mechanical','main block',12000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into department values('eee','tt',15000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into department values('ece','tt',25000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into department values('chemical','smv',35000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into department values('architecture','mgb',35000);
Query OK, 1 row affected (0.01 sec)

mysql>
```

```
mysql> insert into student values('1','a','computer science',160);
Query OK, 1 row affected (0.03 sec)

mysql> insert into student values('2','b','computer science',165);
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values('3','c','mechanical',165);
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values('4','d','mechanical',180);
Query OK, 1 row affected (0.01 sec)

mysql> insert into student values('5','e','eee',200);
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values('6','f','eee',220);
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values('7','g','ece',250);
Query OK, 1 row affected (0.01 sec)

mysql> insert into student values('8','h','ece',255);
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values('9','i','chemical',300);
Query OK, 1 row affected (0.01 sec)

mysql> insert into student values('10','j','chemical',320);
Query OK, 1 row affected (0.01 sec)

mysql> insert into student values('11','k','architecture',350);
Query OK, 1 row affected (0.01 sec)

mysql> insert into student values('12','l','architecture',355);
Query OK, 1 row affected (0.01 sec)

mysql>
```

DISPLAY

```
MySQL 8.0 Command Line Cli    ×    +    ⌄

mysql> select * from student;
+------+--------+------------------+-----------+
| id   | name   | dept_name        | tot_cred  |
+------+--------+------------------+-----------+
| 1    | a      | computer science |       160 |
| 10   | j      | chemical         |       320 |
| 11   | k      | architecture     |       350 |
| 12   | l      | architecture     |       355 |
| 2    | b      | computer science |       165 |
| 3    | c      | mechanical       |       165 |
| 4    | d      | mechanical       |       180 |
| 5    | e      | eee              |       200 |
| 6    | f      | eee              |       220 |
| 7    | g      | ece              |       250 |
| 8    | h      | ece              |       255 |
| 9    | i      | chemical         |       300 |
+------+--------+------------------+-----------+
12 rows in set (0.01 sec)

mysql>
```

```
mysql> select * from department;
+------------------+------------+----------+
| dept_name        | building   | budget   |
+------------------+------------+----------+
| architecture     | mgb        | 35000.00 |
| chemical         | smv        | 35000.00 |
| computer science | sjt        |  1234.00 |
| ece              | tt         | 25000.00 |
| eee              | tt         | 15000.00 |
| mechanical       | main block | 12000.00 |
+------------------+------------+----------+
6 rows in set (0.00 sec)

mysql>
```

UPDATE

```
mysql> update student set tot_cred=500 where dept_name='mechanical';
Query OK, 2 rows affected (0.01 sec)
Rows matched: 2  Changed: 2  Warnings: 0

mysql> select * from student;
+----+------+------------------+-----------+
| id | name | dept_name        | tot_cred  |
+----+------+------------------+-----------+
| 1  | a    | computer science |       160 |
| 10 | j    | chemical         |       320 |
| 11 | k    | architecture     |       350 |
| 12 | l    | architecture     |       355 |
| 2  | b    | computer science |       165 |
| 3  | c    | mechanical       |       500 |
| 4  | d    | mechanical       |       500 |
| 5  | e    | eee              |       200 |
| 6  | f    | eee              |       220 |
| 7  | g    | ece              |       250 |
| 8  | h    | ece              |       255 |
| 9  | i    | chemical         |       300 |
+----+------+------------------+-----------+
12 rows in set (0.00 sec)

mysql>
```

```
mysql> update department set building='prp' where dept_name='mechanical';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from department;
+------------------+----------+----------+
| dept_name        | building | budget   |
+------------------+----------+----------+
| architecture     | mgb      | 35000.00 |
| chemical         | smv      | 35000.00 |
| computer science | sjt      |  1234.00 |
| ece              | tt       | 25000.00 |
| eee              | tt       | 15000.00 |
| mechanical       | prp      | 12000.00 |
+------------------+----------+----------+
6 rows in set (0.00 sec)

mysql>
```

DELETE

```
mysql> delete from student where id='5';
Query OK, 1 row affected (0.01 sec)

mysql> select * from student;
+----+------+------------------+----------+
| id | name | dept_name        | tot_cred |
+----+------+------------------+----------+
|  1 | a    | computer science |      160 |
| 10 | j    | chemical         |      320 |
| 11 | k    | architecture     |      350 |
| 12 | l    | architecture     |      355 |
|  2 | b    | computer science |      165 |
|  3 | c    | mechanical       |      500 |
|  4 | d    | mechanical       |      500 |
|  6 | f    | eee              |      220 |
|  7 | g    | ece              |      250 |
|  8 | h    | ece              |      255 |
|  9 | i    | chemical         |      300 |
+----+------+------------------+----------+
11 rows in set (0.00 sec)

mysql>
```

INNER JOIN

```
mysql> select * from student inner join department on student.dept_name=department.dept_name;
+----+------+------------------+----------+------------------+----------+----------+
| id | name | dept_name        | tot_cred | dept_name        | building | budget   |
+----+------+------------------+----------+------------------+----------+----------+
| 11 | k    | architecture     |      350 | architecture     | mgb      | 35000.00 |
| 12 | l    | architecture     |      355 | architecture     | mgb      | 35000.00 |
| 10 | j    | chemical         |      320 | chemical         | smv      | 35000.00 |
|  9 | i    | chemical         |      300 | chemical         | smv      | 35000.00 |
|  1 | a    | computer science |      160 | computer science | sjt      |  1234.00 |
|  2 | b    | computer science |      165 | computer science | sjt      |  1234.00 |
|  7 | g    | ece              |      250 | ece              | tt       | 25000.00 |
|  8 | h    | ece              |      255 | ece              | tt       | 25000.00 |
|  6 | f    | eee              |      220 | eee              | tt       | 15000.00 |
|  3 | c    | mechanical       |      500 | mechanical       | prp      | 12000.00 |
|  4 | d    | mechanical       |      500 | mechanical       | prp      | 12000.00 |
+----+------+------------------+----------+------------------+----------+----------+
11 rows in set (0.01 sec)

mysql>
```

LEFT JOIN

```
mysql> select * from student left join department on student.dept_name=department.dept_name;
+----+------+------------------+----------+------------------+----------+----------+
| id | name | dept_name        | tot_cred | dept_name        | building | budget   |
+----+------+------------------+----------+------------------+----------+----------+
| 1  | a    | computer science |      160 | computer science | sjt      |  1234.00 |
| 10 | j    | chemical         |      320 | chemical         | smv      | 35000.00 |
| 11 | k    | architecture     |      350 | architecture     | mgb      | 35000.00 |
| 12 | l    | architecture     |      355 | architecture     | mgb      | 35000.00 |
| 2  | b    | computer science |      165 | computer science | sjt      |  1234.00 |
| 3  | c    | mechanical       |      500 | mechanical       | prp      | 12000.00 |
| 4  | d    | mechanical       |      500 | mechanical       | prp      | 12000.00 |
| 6  | f    | eee              |      220 | eee              | tt       | 15000.00 |
| 7  | g    | ece              |      250 | ece              | tt       | 25000.00 |
| 8  | h    | ece              |      255 | ece              | tt       | 25000.00 |
| 9  | i    | chemical         |      300 | chemical         | smv      | 35000.00 |
+----+------+------------------+----------+------------------+----------+----------+
11 rows in set (0.01 sec)
```

RIGHT JOIN
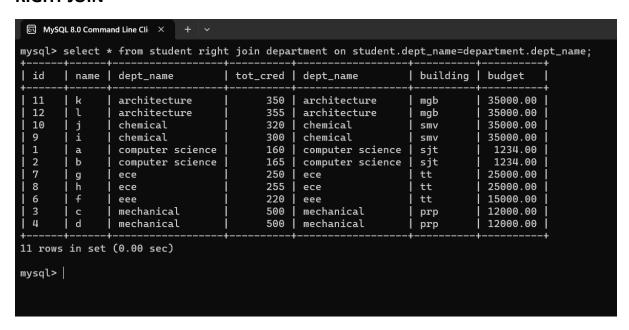
```
  MySQL 8.0 Command Line Cli   X    +   v

mysql> select * from student right join department on student.dept_name=department.dept_name;
+------+------+------------------+----------+------------------+----------+----------+
| id   | name | dept_name        | tot_cred | dept_name        | building | budget   |
+------+------+------------------+----------+------------------+----------+----------+
| 11   | k    | architecture     |      350 | architecture     | mgb      | 35000.00 |
| 12   | l    | architecture     |      355 | architecture     | mgb      | 35000.00 |
| 10   | j    | chemical         |      320 | chemical         | smv      | 35000.00 |
| 9    | i    | chemical         |      300 | chemical         | smv      | 35000.00 |
| 1    | a    | computer science |      160 | computer science | sjt      |  1234.00 |
| 2    | b    | computer science |      165 | computer science | sjt      |  1234.00 |
| 7    | g    | ece              |      250 | ece              | tt       | 25000.00 |
| 8    | h    | ece              |      255 | ece              | tt       | 25000.00 |
| 6    | f    | eee              |      220 | eee              | tt       | 15000.00 |
| 3    | c    | mechanical       |      500 | mechanical       | prp      | 12000.00 |
| 4    | d    | mechanical       |      500 | mechanical       | prp      | 12000.00 |
+------+------+------------------+----------+------------------+----------+----------+
11 rows in set (0.00 sec)

mysql>
```

FULL JOIN

```
mysql> select * from student full join department;
+----+------+------------------+----------+------------------+----------+----------+
| id | name | dept_name        | tot_cred | dept_name        | building | budget   |
+----+------+------------------+----------+------------------+----------+----------+
| 1  | a    | computer science |      160 | mechanical       | prp      | 12000.00 |
| 1  | a    | computer science |      160 | eee              | tt       | 15000.00 |
| 1  | a    | computer science |      160 | ece              | tt       | 25000.00 |
| 1  | a    | computer science |      160 | computer science | sjt      |  1234.00 |
| 1  | a    | computer science |      160 | chemical         | smv      | 35000.00 |
| 1  | a    | computer science |      160 | architecture     | mgb      | 35000.00 |
| 10 | j    | chemical         |      320 | mechanical       | prp      | 12000.00 |
| 10 | j    | chemical         |      320 | eee              | tt       | 15000.00 |
| 10 | j    | chemical         |      320 | ece              | tt       | 25000.00 |
| 10 | j    | chemical         |      320 | computer science | sjt      |  1234.00 |
| 10 | j    | chemical         |      320 | chemical         | smv      | 35000.00 |
| 10 | j    | chemical         |      320 | architecture     | mgb      | 35000.00 |
| 11 | k    | architecture     |      350 | mechanical       | prp      | 12000.00 |
| 11 | k    | architecture     |      350 | eee              | tt       | 15000.00 |
| 11 | k    | architecture     |      350 | ece              | tt       | 25000.00 |
| 11 | k    | architecture     |      350 | computer science | sjt      |  1234.00 |
| 11 | k    | architecture     |      350 | chemical         | smv      | 35000.00 |
| 11 | k    | architecture     |      350 | architecture     | mgb      | 35000.00 |
| 12 | l    | architecture     |      355 | mechanical       | prp      | 12000.00 |
| 12 | l    | architecture     |      355 | eee              | tt       | 15000.00 |
| 12 | l    | architecture     |      355 | ece              | tt       | 25000.00 |
| 12 | l    | architecture     |      355 | computer science | sjt      |  1234.00 |
| 12 | l    | architecture     |      355 | chemical         | smv      | 35000.00 |
| 12 | l    | architecture     |      355 | architecture     | mgb      | 35000.00 |
| 2  | b    | computer science |      165 | mechanical       | prp      | 12000.00 |
| 2  | b    | computer science |      165 | eee              | tt       | 15000.00 |
| 2  | b    | computer science |      165 | ece              | tt       | 25000.00 |
| 2  | b    | computer science |      165 | computer science | sjt      |  1234.00 |
| 2  | b    | computer science |      165 | chemical         | smv      | 35000.00 |
| 2  | b    | computer science |      165 | architecture     | mgb      | 35000.00 |
| 3  | c    | mechanical       |      500 | mechanical       | prp      | 12000.00 |
| 3  | c    | mechanical       |      500 | eee              | tt       | 15000.00 |
| 3  | c    | mechanical       |      500 | ece              | tt       | 25000.00 |
| 3  | c    | mechanical       |      500 | computer science | sjt      |  1234.00 |
| 3  | c    | mechanical       |      500 | chemical         | smv      | 35000.00 |
| 3  | c    | mechanical       |      500 | architecture     | mgb      | 35000.00 |
```

```
| 4 | d | mechanical | 500 | mechanical       | prp | 12000.00 |
| 4 | d | mechanical | 500 | eee              | tt  | 15000.00 |
| 4 | d | mechanical | 500 | ece              | tt  | 25000.00 |
| 4 | d | mechanical | 500 | computer science | sjt |  1234.00 |
| 4 | d | mechanical | 500 | chemical         | smv | 35000.00 |
| 4 | d | mechanical | 500 | architecture     | mgb | 35000.00 |
| 6 | f | eee        | 220 | mechanical       | prp | 12000.00 |
| 6 | f | eee        | 220 | eee              | tt  | 15000.00 |
| 6 | f | eee        | 220 | ece              | tt  | 25000.00 |
| 6 | f | eee        | 220 | computer science | sjt |  1234.00 |
| 6 | f | eee        | 220 | chemical         | smv | 35000.00 |
| 6 | f | eee        | 220 | architecture     | mgb | 35000.00 |
| 7 | g | ece        | 250 | mechanical       | prp | 12000.00 |
| 7 | g | ece        | 250 | eee              | tt  | 15000.00 |
| 7 | g | ece        | 250 | ece              | tt  | 25000.00 |
| 7 | g | ece        | 250 | computer science | sjt |  1234.00 |
| 7 | g | ece        | 250 | chemical         | smv | 35000.00 |
| 7 | g | ece        | 250 | architecture     | mgb | 35000.00 |
| 8 | h | ece        | 255 | mechanical       | prp | 12000.00 |
| 8 | h | ece        | 255 | eee              | tt  | 15000.00 |
| 8 | h | ece        | 255 | ece              | tt  | 25000.00 |
| 8 | h | ece        | 255 | computer science | sjt |  1234.00 |
| 8 | h | ece        | 255 | chemical         | smv | 35000.00 |
| 8 | h | ece        | 255 | architecture     | mgb | 35000.00 |
| 9 | i | chemical   | 300 | mechanical       | prp | 12000.00 |
| 9 | i | chemical   | 300 | eee              | tt  | 15000.00 |
| 9 | i | chemical   | 300 | ece              | tt  | 25000.00 |
| 9 | i | chemical   | 300 | computer science | sjt |  1234.00 |
| 9 | i | chemical   | 300 | chemical         | smv | 35000.00 |
| 9 | i | chemical   | 300 | architecture     | mgb | 35000.00 |
+----+-------+-----------------+----------+--------------------+----------+----------+
66 rows in set (0.00 sec)
```

MONGO DB

```
>_MONGOSH

> use javaspringboot

< switched to db javaspringboot

javaspringboot >
```

CREATE COLLECTION

```
> db.createCollection("student")

< { ok: 1 }

javaspringboot >
```

INSERT RECORDS

```
> db.student.insertOne({name:"abc", email:"abc@gmail.com", age:30})
< {
    acknowledged: true,
    insertedId: ObjectId("6473390cbe7ab5eb2ef21ae7")
  }
> db.student.insertOne({name:"def", email:"def@gmail.com", age:40})
< {
    acknowledged: true,
    insertedId: ObjectId("64733933be7ab5eb2ef21ae8")
  }
> db.student.insertOne({name:"xyz", email:"xyz@gmail.com", age:45})
< {
    acknowledged: true,
    insertedId: ObjectId("64733957be7ab5eb2ef21ae9")
  }
javaspringboot >
```

DISPLAY

```
>_MONGOSH
> db.student.find()
< {
    _id: ObjectId("6473390cbe7ab5eb2ef21ae7"),
    name: 'abc',
    email: 'abc@gmail.com',
    age: 30
  }
  {
    _id: ObjectId("64733933be7ab5eb2ef21ae8"),
    name: 'def',
    email: 'def@gmail.com',
    age: 40
  }
  {
    _id: ObjectId("64733957be7ab5eb2ef21ae9"),
    name: 'xyz',
    email: 'xyz@gmail.com',
    age: 45
  }
javaspringboot >
```

```
> db.student.find({age:{$gte:40}})
< {
    _id: ObjectId("64733933be7ab5eb2ef21ae8"),
    name: 'def',
    email: 'def@gmail.com',
    age: 40
  }
  {
    _id: ObjectId("64733957be7ab5eb2ef21ae9"),
    name: 'xyz',
    email: 'xyz@gmail.com',
    age: 45
  }
javaspringboot >
```

UPDATE

```
>_MONGOSH
> db.student.updateOne({name:"abc"},{$set:{age:25}})
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
> db.student.find()
< {
    _id: ObjectId("6473390cbe7ab5eb2ef21ae7"),
    name: 'abc',
    email: 'abc@gmail.com',
    age: 25
  }
  {
    _id: ObjectId("64733933be7ab5eb2ef21ae8"),
    name: 'def',
    email: 'def@gmail.com',
    age: 40
  }
  {
    _id: ObjectId("64733957be7ab5eb2ef21ae9"),
    name: 'xyz',
    email: 'xyz@gmail.com',
    age: 45
  }
```

DELETE

```
> db.student.deleteOne({name:"def"})
< {
    acknowledged: true,
    deletedCount: 1
  }
> db.student.find()
< {
    _id: ObjectId("6473390cbe7ab5eb2ef21ae7"),
    name: 'abc',
    email: 'abc@gmail.com',
    age: 25
  }
  {
    _id: ObjectId("64733957be7ab5eb2ef21ae9"),
    name: 'xyz',
    email: 'xyz@gmail.com',
    age: 45
  }
javaspringboot > |
```