

1. SELECT \* FROM student INNER JOIN instructor ON student.department\_name = instructor.department\_name;

#### Database university

##### Table structure for table student

| Column          | Type        | Null | Default | Links to | Comments | Media type |
|-----------------|-------------|------|---------|----------|----------|------------|
| student_id      | int(11)     | No   |         |          |          |            |
| student_name    | varchar(25) | Yes  | NULL    |          |          |            |
| department_name | varchar(25) | Yes  | NULL    |          |          |            |
| total_credits   | int(11)     | Yes  | NULL    |          |          |            |
| birthdate       | date        | Yes  | NULL    |          |          |            |

##### Dumping data for table student

| student_id | student_name | department_name | total_credits | birthdate | instructor_id | instructor_name | department_name | salary |
|------------|--------------|-----------------|---------------|-----------|---------------|-----------------|-----------------|--------|
| 2001       | sam          | comp            | 8             | NULL      | 5001          | aaa             | comp            | 100000 |
| 2004       | Elis         | comp            | 4             | NULL      | 5001          | aaa             | comp            | 100000 |
| 2001       | sam          | comp            | 8             | NULL      | 5002          | bbb             | comp            | 50000  |
| 2004       | Elis         | comp            | 4             | NULL      | 5002          | bbb             | comp            | 50000  |
| 2002       | mary         | civil           | 7             | NULL      | 5003          | ccc             | civil           | 150000 |
| 2003       | judith       | electronics     | 4             | NULL      | 5004          | ddd             | electronics     | 75000  |

2. SELECT \* FROM student NATURAL JOIN instructor;

#### Database university

##### Table structure for table student

| Column          | Type        | Null | Default | Links to | Comments | Media type |
|-----------------|-------------|------|---------|----------|----------|------------|
| student_id      | int(11)     | No   |         |          |          |            |
| student_name    | varchar(25) | Yes  | NULL    |          |          |            |
| department_name | varchar(25) | Yes  | NULL    |          |          |            |
| total_credits   | int(11)     | Yes  | NULL    |          |          |            |
| birthdate       | date        | Yes  | NULL    |          |          |            |

##### Dumping data for table student

| department_name | student_id | student_name | total_credits | birthdate | instructor_id | instructor_name | salary |
|-----------------|------------|--------------|---------------|-----------|---------------|-----------------|--------|
| comp            | 2001       | sam          | 8             | NULL      | 5001          | aaa             | 100000 |
| comp            | 2004       | Elis         | 4             | NULL      | 5001          | aaa             | 100000 |
| comp            | 2001       | sam          | 8             | NULL      | 5002          | bbb             | 50000  |
| comp            | 2004       | Elis         | 4             | NULL      | 5002          | bbb             | 50000  |
| civil           | 2002       | mary         | 7             | NULL      | 5003          | ccc             | 150000 |
| electronics     | 2003       | judit        | 4             | NULL      | 5004          | ddd             | 75000  |

3. SELECT \* FROM student LEFT JOIN instructor ON student.department\_name = instructor.department\_name;

## Database university

### Table structure for table student

| Column          | Type        | Null | Default | Links to | Comments | Media type |
|-----------------|-------------|------|---------|----------|----------|------------|
| student_id      | int(11)     | No   |         |          |          |            |
| student_name    | varchar(25) | Yes  | NULL    |          |          |            |
| department_name | varchar(25) | Yes  | NULL    |          |          |            |
| total_credits   | int(11)     | Yes  | NULL    |          |          |            |
| birthdate       | date        | Yes  | NULL    |          |          |            |

### Dumping data for table student

| student_id | student_name | department_name | total_credits | birthdate | instructor_id | instructor_name | department_name | salary |
|------------|--------------|-----------------|---------------|-----------|---------------|-----------------|-----------------|--------|
| 2001       | sam          | comp            | 8             | NULL      | 5001          | aaa             | comp            | 100000 |
| 2004       | Elis         | comp            | 4             | NULL      | 5001          | aaa             | comp            | 100000 |
| 2001       | sam          | comp            | 8             | NULL      | 5002          | bbb             | comp            | 50000  |
| 2004       | Elis         | comp            | 4             | NULL      | 5002          | bbb             | comp            | 50000  |
| 2002       | mary         | civil           | 7             | NULL      | 5003          | ccc             | civil           | 150000 |
| 2003       | judit        | electronics     | 4             | NULL      | 5004          | ddd             | electronics     | 75000  |

4. SELECT \* FROM student RIGHT JOIN instructor ON student.department\_name = instructor.department\_name;

## Database university

### Table structure for table student

| Column          | Type        | Null | Default | Links to | Comments | Media type |
|-----------------|-------------|------|---------|----------|----------|------------|
| student_id      | int(11)     | No   |         |          |          |            |
| student_name    | varchar(25) | Yes  | NULL    |          |          |            |
| department_name | varchar(25) | Yes  | NULL    |          |          |            |
| total_credits   | int(11)     | Yes  | NULL    |          |          |            |
| birthdate       | date        | Yes  | NULL    |          |          |            |

### Dumping data for table student

|            |              |                 |               |           |               |                 |                 |        |
|------------|--------------|-----------------|---------------|-----------|---------------|-----------------|-----------------|--------|
| student_id | student_name | department_name | total_credits | birthdate | instructor_id | instructor_name | department_name | salary |
| 2001       | sam          | comp            | 8             | NULL      | 5001          | aaa             | comp            | 100000 |
| 2001       | sam          | comp            | 8             | NULL      | 5002          | bbb             | comp            | 50000  |
| 2002       | mary         | civil           | 7             | NULL      | 5003          | ccc             | civil           | 150000 |
| 2003       | judit        | electronics     | 4             | NULL      | 5004          | ddd             | electronics     | 75000  |
| 2004       | Elis         | comp            | 4             | NULL      | 5001          | aaa             | comp            | 100000 |
| 2004       | Elis         | comp            | 4             | NULL      | 5002          | bbb             | comp            | 50000  |

```
5. SELECT * FROM student LEFT JOIN instructor ON student.department_name =
    instructor.department_name
    UNION
    SELECT *
    FROM student
    RIGHT JOIN instructor ON student.department_name = instructor.department_name;
```

## Database university

### Table structure for table student

| Column          | Type        | Null | Default | Links to | Comments | Media type |
|-----------------|-------------|------|---------|----------|----------|------------|
| student_id      | int(11)     | No   |         |          |          |            |
| student_name    | varchar(25) | Yes  | NULL    |          |          |            |
| department_name | varchar(25) | Yes  | NULL    |          |          |            |
| total_credits   | int(11)     | Yes  | NULL    |          |          |            |
| birthdate       | date        | Yes  | NULL    |          |          |            |

### Dumping data for table student

| student_id | student_name | department_name | total_credits | birthdate | instructor_id | instructor_name | department_name | salary |
|------------|--------------|-----------------|---------------|-----------|---------------|-----------------|-----------------|--------|
| 2001       | sam          | comp            | 8             | NULL      | 5001          | aaa             | comp            | 10000  |
| 2004       | Elis         | comp            | 4             | NULL      | 5001          | aaa             | comp            | 10000  |
| 2001       | sam          | comp            | 8             | NULL      | 5002          | bbb             | comp            | 50000  |
| 2004       | Elis         | comp            | 4             | NULL      | 5002          | bbb             | comp            | 50000  |
| 2002       | mary         | civil           | 7             | NULL      | 5003          | ccc             | civil           | 15000  |
| 2003       | judit        | electronics     | 4             | NULL      | 5004          | ddd             | electronics     | 75000  |

```
6. select student.student_name from student join takes on student.student_id =
   takes.student_id WHERE takes.course_id = 101;
```

Database university

Table structure for table student

| Column            | Type        | Null | Default |
|-------------------|-------------|------|---------|
| <i>student_id</i> | int         | No   |         |
| student_name      | varchar(25) | Yes  | NULL    |
| department_name   | varchar(25) | Yes  | NULL    |
| total_credits     | int         | Yes  | NULL    |
| birthdate         | date        | Yes  | NULL    |

Dumping data for table student

Sam  
Elis

```
7. SELECT student.student_name, instructor.instructor_name FROM student JOIN takes
on student.student_id = takes.student_id JOIN teaches
on takes.course_id = teaches.course_id JOIN instructor
on teaches.instructor_id = instructor.instructor_id where teaches.course_id = 101;
```

Database university

Dumping data for table student

Elis aaa

|      |     |
|------|-----|
| sam  | aaa |
| Elis | bbb |
| sam  | bbb |

8. SELECT student.student\_name from student JOIN takes on student.student\_id = takes.student\_id  
where takes.date\_registered = '2023-01-01';

Database university

Table structure for table student

| Column            | Type        | Null | Default |
|-------------------|-------------|------|---------|
| <i>student_id</i> | int         | No   |         |
| student_name      | varchar(25) | Yes  | NULL    |
| department_name   | varchar(25) | Yes  | NULL    |
| total_credits     | int         | Yes  | NULL    |
| birthdate         | date        | Yes  | NULL    |

Dumping data for table student

sam  
Elis

9. select COUNT(\*) from student JOIN takes  
on student.student\_id = takes.student\_id WHERE takes.course\_id = 102;

Database university

Table structure for table student

| Column            | Type        | Null | Default |
|-------------------|-------------|------|---------|
| <i>student_id</i> | int         | No   |         |
| student_name      | varchar(25) | Yes  | NULL    |
| department_name   | varchar(25) | Yes  | NULL    |
| total_credits     | int         | Yes  | NULL    |
| birthdate         | date        | Yes  | NULL    |

Dumping data for table student

```
10. SELECT COUNT(DISTINCT student.student_id) AS student_count, student.student_name
FROM student JOIN takes ON student.student_id = takes.student_id WHERE
takes.course_id = 102 GROUP BY student.student_id, student.student_name;
```

Database university

Table structure for table student

| Column            | Type        | Null | Default |
|-------------------|-------------|------|---------|
| <b>student_id</b> | int         | No   |         |
| student_name      | varchar(25) | Yes  | NULL    |
| department_name   | varchar(25) | Yes  | NULL    |
| total_credits     | int         | Yes  | NULL    |
| birthdate         | date        | Yes  | NULL    |

Dumping data for table student

```
1          sam
1          Elis
```

```
11.
SELECT COUNT(DISTINCT instructor.instructor_id) AS number_of_instructors
FROM student
JOIN takes ON student.student_id = takes.student_id
JOIN teaches ON takes.course_id = teaches.course_id
JOIN instructor ON teaches.instructor_id = instructor.instructor_id
WHERE student.student_name = 'sam';
```

Database university

Table structure for table student

| Column            | Type        | Null | Default |
|-------------------|-------------|------|---------|
| <b>student_id</b> | int         | No   |         |
| student_name      | varchar(25) | Yes  | NULL    |
| department_name   | varchar(25) | Yes  | NULL    |
| total_credits     | int         | Yes  | NULL    |
| birthdate         | date        | Yes  | NULL    |

Dumping data for table student

```
2
```

12.

```
SELECT COUNT(student.student_id) from student JOIN takes ON student.student_id =
takes.student_id WHERE year(CURRENT_TIME) - year(takes.date_registered) > 1;
```

Database university

Table structure for table student

| Column            | Type        | Null | Default |
|-------------------|-------------|------|---------|
| <i>student_id</i> | int         | No   |         |
| student_name      | varchar(25) | Yes  | NULL    |
| department_name   | varchar(25) | Yes  | NULL    |
| total_credits     | int         | Yes  | NULL    |
| birthdate         | date        | Yes  | NULL    |

Dumping data for table student

0

13. SELECT credits

FROM course

WHERE course\_id = 201;

Database university

Table structure for table course

| Column           | Type        | Null | Default |
|------------------|-------------|------|---------|
| <i>course_id</i> | int         | No   |         |
| title            | varchar(25) | Yes  | NULL    |
| department_name  | varchar(25) | Yes  | NULL    |
| credits          | int         | Yes  | NULL    |

Dumping data for table course

3

14. SELECT student.student\_id, student.student\_name, course.title AS course\_name,  
instructor.instructor\_name

FROM student

JOIN takes ON student.student\_id = takes.student\_id

JOIN course ON takes.course\_id = course.course\_id

JOIN teaches ON takes.course\_id = teaches.course\_id

```
JOIN instructor ON teaches.instructor_id = instructor.instructor_id;
```

Database university

Dumping data for table course

|      |       |                        |     |
|------|-------|------------------------|-----|
| 2004 | Elis  | dbms                   | aaa |
| 2001 | sam   | dbms                   | aaa |
| 2004 | Elis  | os                     | aaa |
| 2001 | sam   | os                     | aaa |
| 2004 | Elis  | dbms                   | bbb |
| 2001 | sam   | dbms                   | bbb |
| 2004 | Elis  | os                     | bbb |
| 2001 | sam   | os                     | bbb |
| 2002 | mary  | mechanics              | ccc |
| 2002 | mary  | foundation Engineering | ccc |
| 2003 | judit | signals and system     | ddd |

```
15. SELECT course.title FROM course INNER JOIN teaches ON course.course_id = teaches.course_id;
```

Database university

Table structure for table course

| Column          | Type        | Null | Default | Links to | Comments | Media type |
|-----------------|-------------|------|---------|----------|----------|------------|
| course_id       | int(11)     | No   |         |          |          |            |
| title           | varchar(25) | Yes  | NULL    |          |          |            |
| department_name | varchar(25) | Yes  | NULL    |          |          |            |
| credits         | int(11)     | Yes  | NULL    |          |          |            |

Dumping data for table course

|                        |
|------------------------|
| title                  |
| dbms                   |
| os                     |
| dbms                   |
| os                     |
| mechanics              |
| foundation Engineering |
| signals and system     |