Left and Right Joins

Name:	Class:	Date:

Key Theory

LEFT and RIGHT JOIN work by taking all data from one table and finding matching data in the opposite table.

This may result in data that has NULL values showing in fields from the opposite table as there is not data to match.

The left table is the one immediately after the FROM clause, and the right after the JOIN.

SELECT *fields*
FROM *left_table*
LEFT JOIN *right_table*
ON *left_table.field* = *right_table.field*;

Example

A LEFT JOIN, notice that all records from students are selected and any matches from enrolments.

```
SELECT *
FROM students
LEFT JOIN enrolments
ON student_number = student_id;
```

student_number	student_age	passport	first_name	last_name	enrolment_id	subject_id	student_id
1	66	56536	Englebert	Le feaver	8	2	1
1	66	56536	Englebert	Le feaver	15	2	1
2	60	26231	Miranda	Aksell	NULL	NULL	NULL
3	78	14698	Pierson	Gibberd	NULL	NULL	NULL
4	18	83426	Antin	Le Sieur	NULL	NULL	NULL
5	66	46029	Tiffani	Truce	NULL	NULL	NULL
6	72	99111	Aurelea	Filer	NULL	NULL	NULL
7	93	83641	Torrie	Gianettini	9	3	7
7	93	83641	Torrie	Gianettini	16	3	7
8	66	66533	Klement	Moggach	NULL	NULL	NULL
9	21	97927	Shellie	Castiello	NULL	NULL	NULL
10	60	43898	Coreen	Lubeck	11	3	10

Left and Right Joins

Task 1

Task 1.1

Create a new table called enrolments. This will store all the enrolled students and which subject they have enrolled on.

```
CREATE TABLE enrolments (enrolment_id INT AUTO_INCREMENT PRIMARY KEY,
subject_id INT, student_id INT,
CONSTRAINT subject_id FOREIGN KEY(subject_id) REFERENCES subjects
(subject_id),
CONSTRAINT student_id FOREIGN KEY(student_id) REFERENCES students
(student_number));
```

Task 1.2

Add data to enrolments. Be aware you may need to alter the data below if you have deleted student or course records. If needed INSERT more students and subjects.

```
INSERT INTO enrolments (subject_id, student_id) VALUES (2, 1), (3, 7), (4, 5), (3,
10), (3, 15), (4, 18), (4, 19);
```

Task 1.3

Now you will create a LEFT JOIN between students and enrolment.

This may produce a lot of NULL values if you have a lot of students not enrolled.

```
SELECT *
FROM students
LEFT JOIN enrolments
ON student_number = student_id;
```

Left and Right Joins

Task 1.4

Now change the LEFT JOIN for a RIGHT JOIN.

Can you explain what difference this makes to the data returned?

Task 1.5

Perform a LEFT JOIN using subjects and enrolments.

This should be:

ON subjects.subject_id = enrolments.subject_id

Challenges

Challenge 1

Using a LEFT join DELETE all entries WHERE the trainer_id = 6.

To do this enrolments should be the left table and subjects the right.

Challenge 2

The hard part comes when you begin to combine multiple tables and join them to find information.

Query enrolments, students, and subjects for the following fields.

enrolments.enrolment_id, students.student_number, subjects.subject_name

You will need two LEFT JOINS—

enrolments LEFT JOIN students ON…

LEFT JOIN subject ON...