

Updating and Deleting Data

Name:

Class:

Date:

This worksheet follows on from Inserting Data

Now we have data in the database we need to maintain it for the purpose of maintaining data integrity.

This can take the form of updating records due to changes and deleting records we no longer need.

Updates can make use of a wide range of different statements that allow us to update specific records or perform updates across the whole table.

A simple UPDATE will look like this:

UPDATE *table*

SET *field_one* = *value_one*, *field_two* = *value_two*, ...

WHERE *field* **operator** *value* -- Operators: < less than, > greater the, = equals...

Task 1

Task 1.1

Let's give the teachers a pay rise.

UPDATE teachers

SET salary = 30000.1

WHERE salary < 25000.0;

Task 1.2

Richard may be slightly overpaid with his 100900.3 salary.

Reduce this to 80000.

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Task 1.3

It's every student's birthday today and they need to get one year older.

For this you don't need to use a WHERE clause but you do need to use this maths in either the UPDATE or the SET:

```
student_age = student_age + 1
```

UPDATE Challenges

Challenge 1

It has been decided that Waqas (trainer_id = 5) will take all Web Development courses from now on.

Update the subjects table accordingly.

Challenge 2

Everything's been going great over the last few months and teachers are getting a massive pay rise of 2%.

Update the teachers table accordingly.

Challenge 3

The start date for Databases with subject_id 3 is incorrect and should start on 10th July 2023.

Update the subjects table accordingly.

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Now you can UPDATE it is now time to DELETE data you don't need.

You can delete data using the DELETE statement:

```
DELETE FROM table
```

```
WHERE field operator value -- Operator may be < less than, > greater than ...
```

Task 2

Task 2.1

After a long career teaching Tim has decided to tour the world.

```
DELETE FROM teachers
```

```
WHERE trainer_name = 'Tim';
```

Task 2.2

There has been a duplicate entry for Web Development and one of the courses needs to be deleted.

We want to keep the record that has the highest record number.

To do this we have to make use of aliases (s1 and s2) which means we are comparing the same table against itself.

When it views and compares the two aliases (INNER JOIN) if it comes across two duplicate entries in the table it will find the entry with the lowest subject_id and delete it.

```
DELETE s1 FROM subjects s1
```

```
INNER JOIN subjects s2
```

```
WHERE s1.subject_name = s2.subject_name AND s1.subject_id < s2.subject_id;
```

We will learn more about JOIN in future worksheets.

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DELETE Challenges

Challenge 1

We want to delete Waqas from the teachers table but when we do so it causes an error due to foreign key constraints.

Using UPDATE and DELETE statements make it possible to DELETE Waqas from teachers.

Challenge 2

Zak will no longer be teaching courses and needs to be removed from the teachers table.

This cannot be done as Zak is referenced in the subjects table.

This would not have happened if we had used ON DELETE CASCADE when creating the subjects table.

This can be fixed but takes a few steps to achieve.

1. DROP trainer_id as the foreign key from students.
2. ADD trainer_id as a foreign key to subjects, but this time include ON DELETE CASCADE before the semicolon.
3. DELETE 'Zak' from teachers to see the result.