

What is a database

Databases are like large buckets that store data in an organized manner. A few examples of when we would like to create a database:

- A database for a university to save data about students, courses, and lecturers.
- A database for a car agency to track sales, car storage, and workers.
- A database for a hospital to save information about patient's history to provide good health care
- And many more

Inside a database there are tables, and each table has a name, column names, and rows. For example, this is a `workers` table:

| | firstname | lastname | age | exp_years | gender |
|---|-----------|----------|-----|-----------|--------|
| 1 | Ghully | Thuas | 29 | 2.3 | Female |
| 2 | Bostal | Shkolky | 32 | 0.2 | Male |
| 3 | Qaostu | Malop | 21 | 4 | Female |

The `workers` table has 5 columns and 3 rows. We don't need any tool to know that we have 3 workers and it is easy to calculate the average age of all of them $(29 + 32 + 21) / 3$ but what happens when we have a thousand rows or even a million rows?

For that, we have databases and the SQL language. database stores all of the tables and SQL extracts the data.

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