



BIRMINGHAM CITY
University

CMP6207 - Assignment 1

Untitled CMP6207 Report

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CMP6207 - Modern Data Stores

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Introduction

The report will be based on the design and implementation of a MongoDB NoSQL database system for the company "IoThings Home Automation Solutions", and its detailed brief containing the deadline will become available during Week 2. There are two assignments in this module, where this report is worth **60%**, and a presentation (relating to code?) is the remaining **40%**. This module will also incorporate elements of web design, with HTML and CSS also playing a role alongside the primary use of JavaScript.

Work on this report is expected to fully begin in Week 4, or potentially even earlier within Week 2. A draft of this report may be due in Week 7.

Module plan

- As minor occurrences happen, such as the installation of MongoDB, log them here.
- The timetabling of this module means that there's not much point trying to get ahead.
 - This is partially a benefit, as it means you have time for CMP6228 and CMP6200.
- Kostas cares more for the functionality over aesthetics. While you should put effort into the HTML and CSS parts, they're a lesser concern than the overall usability of the system.
- A literature review is expected in this report.
- 4,000 word count, so 4,400 hard limit.
- The presentation is about this report. It must cover the design, implementation and data management.
 - You would show him your database cluster as part of it.
- IT WILL BE THIRTY MINUTES. If the report contains all the screenshots (which it will) you might not need to make slides, though consider it anyway. You can still show the report alongside the slides where needed.

Coding conventions

There are expected coding conventions within this module, though they are how you would code anyway. camelCase, spaces when assigning variables and between array contents ["Space", "Expected before me"]. Code must be indented to the relevant level which is likely handled by VSCode. Your lines should not exceed 80 characters, and you may need to get a JS linter to enforce this. Your code should be commented.

Expected function format

```
function toCelsius(fahrenheit) {  
    return (5 / 9) * (fahrenheit - 32);  
}
```

Database comparisons

- Compare types of NoSQL databases here.
- This section "shouldn't be too long, but enough to convince them."

Structured Query Language, or SQL, was developed by IBM following Codd (1970)'s groundbreaking publication in the ACM journal, with the first commercial SQL implementation being published by Oracle in 1979 (Oracle, 2025). SQL powers many relational database systems even today, though the problems associated with its age, most notably in the speed of its operations, are beginning to show in modern systems. Therefore, NoSQL ("Not Only SQL") was developed as a new form of database that stores data in a non-tabular, non-relational format which work to efficiently store semi-structured and unstructured data in a flexible, functional and scalable model for faster operations than standard relational databases in most scenarios (Google Cloud, 2025; AWS, 2025).

MongoDB, an acronym from "**h**um**o**ngous DB", aims to address some of SQL's key issues through its

Conclusion

Overall, something was done. . .

Bibliography

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