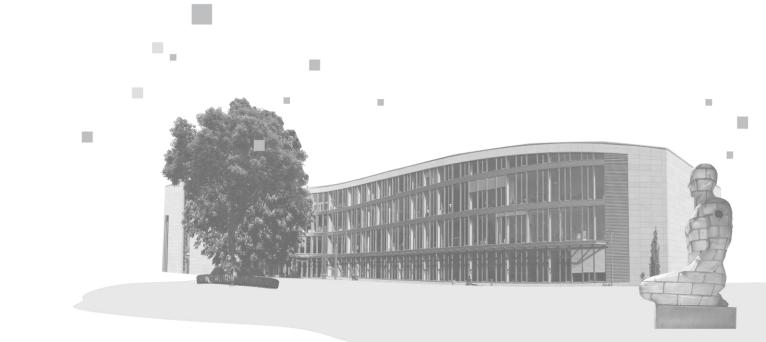# Mini Project 1

Automation for Query Development and Execution File

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Design IT.
Create Knowledge.

Starting Point

Limited SQL experience
(only DBS 1, years ago)

Regular use of tools for (partially) automating development
GitHub Copilot
ChatGPT

Task 1

	Without ChatGPT	With ChatGPT
General experience	A lot of **trial and error**	**Fast and easy** using natural language **description + schema**
Development time	Rather **time consuming** (multiple hours)	A few **minutes**
Quality	Easily **human readable** but **slow runtime**	**Harder to comprehend** but **fast runtime**
Most helpful	**Forums** like StackOverflow & **Documentation**	**Conversational** approach
Most challenging	**Translating the idea into** syntactically and semantically **correct code**	**Understanding & checking correctness** („skipping" the implementation step)
Level of Automation	**Auto-completion** & **search engines** → rather low	**Automatic** query **generation** & providing of background information → higher

Prompting Experience

1 initial prompt & 4 follow-up prompts

Small or many of the **same mistakes** we made
(e.g. not considering likes by the creator of their own posts as foreign likes)

Reduce the **correction prompts** by inserting into the first prompt

- DB **schema**

- **Known misunderstandings**

- **Additional instructions** like "think step by step"

Task 2 - Reflection

- **ChatGPT effective** on both queries (1-shot or few additional prompts)
  - Significantly better runtime
  - Harder to comprehend
- **Adapting ChatGPTs query** by hand most **difficult** → high **maintenance cost**
  - Existing Mental model for hand-written code + better readability → easier to alter

Task 3 - Reflection

- ChatGPTs **query plan** did **not** seem **very plausible**
  - Short, hallucinated numbers, …
  - Difficult to assess with limited knowledge
- **Why even do this with ChatGPT?** → task already (correctly) automated?

Additional Reflection:

How to copy ChatGPT conversations for hand-in with format?

1-shot Generate Browser Extension adding a "Copy" button to ChatGPT
(How? 1. Put requested features & raw HTML from chatgpt.com into ChatGPT o1. 2. Wait. 3. Profit.)

Features:

- <u>Native button</u> integrated in website
- Copies chat in <u>.md format</u>

- Correct <u>code formatting</u>
- <u>Dark mode</u> enabled

Screenshot of chatgpt.com with generated Add-on enabled – Ask if you would like to use the extension as well :)