

# Organization

# Course Goals

Primary goals:

- Learn how to write a scientific report
- Learn how to give a scientific talk
- Structure ideas from multiple research papers

Secondary goals:

- Practice to read scientific papers
- Understand modern cloud database system architectures
- Have interesting discussions with your peers

# Deliverables

During the course each of you will create:

- A report proposal that summarizes your reports topic and focus (<1 page)
- A research report **draft** (5-8 pages + references)
- 2 peer reviews for your fellow students (<1 page each)
- A research report (5-8 pages + references)
- A pre-session protocol that shows your preparation for the presentation. (<1 page)
- A presentation (13-15 minutes)
- Meaningful contribution to the panel discussion in your presentations session

# Grading

Rough estimate of grading contributions:

- $\approx 45\%$  Report
- $\approx 25\%$  Presentation
- $\approx 10\%$  Report Proposal
- $\approx 10\%$  Peer reviews
- $\approx 10\%$  Pre-session protocol and panel discussion

**This is subject to change!**

# Timeline

Preliminary timeline:

- Mo 28.04.2025 introduction lecture 01
- Mo 05.05.2025 introduction lecture 02 | **submit** topic preferences
- Mo 12.05.2025 introduction lecture 03
- Mo 19.05.2025 ∅ | **submit** report proposal
- Mo 26.05.2025 ∅
- Mo 02.06.2025 ∅
- ~~Mo 09.06.2025~~ Pfingstferien
- Mo 16.06.2025 ∅ | **submit** report draft
- Mo 23.06.2025 ∅
- Mo 30.06.2025 presentation session 01 | **submit** peer reviews
- Mo 07.07.2025 presentation session 02
- Mo 14.07.2025 presentation session 03 | **submit** final report
- Mo 21.07.2025 presentation session 04
- **Attendance to all sessions in presence is mandatory**

# Contact

- Website with slides: <http://db.in.tum.de/teaching/ss25/seminarModernDatabaseSystems>
- Gitlab with topics and schedule: <https://gitlab.db.in.tum.de/Rieger/mdbs25>
- Join our **Mattermost Team MDBS25**
- Please ask questions in the **Discussion Channel**
- Maximilian Rieger: **@rieger**

# Requirements for Deliverables

- The following slides cover our criteria for the individual deliverables.
- You may use them as a reference when starting to work on each piece.

# Report Requirements (1) Structure

You will get a session topic and a focus topic assigned. We expect you to follow this structure:

- **Abstract:** Summarize all contents and results of your report.
- **Introduction:** Show the relevance of the problem and where it occurs. List what your report addresses.
- **Background:** Explain required previous knowledge. (optional)
- **Main Part:** Describe core ideas, methods, and solutions of your topic. This might include more than one section.
- **Related Work:** Find relevant work on the same and similar topics. What has been done before? What has been built on top of this later? Describe how your presented method differs from these others.
- **Research Idea:** Describe an interesting path for further research on this topic. Maybe for your own thesis?
- **Conclusion:** Briefly recap the contents and value of your report. Show the impact of your presented method.

Try to add value to your work. There should be a reason to read your report instead of the original papers.



## Report Requirements (2) Further Points

Furthermore, the following points are important for your report:

- **Goal:** Choose one goal for the content of your report. All parts of your text should contribute to that goal. Possible goals might be:
  - Show that problem XY should be approached with solution AB.
  - Compare two or more approaches/systems and show the advantages, disadvantages, and use-cases.
  - Explain how system XY works in detail and highlight specific approaches and optimizations.
- **Content:** You should write about your session topic. The scope of your report should exceed the scope of your focus topic papers.
- **Language:** Use good scientific writing style. Write precise, concise, clear, and uncomplicated.
- **No Plagiarism:** Write the report on your own. If we notice that your report includes any text you did not understand or find long sections that just paraphrase sources you will not pass this course.

## Report Requirements (3) Further Points

Furthermore, the following points are important for your report:

- **References:** Show your work on literature review by citing relevant sources. Adhere to **citation guidelines**.
- **Figures:** Your report needs to include at least one figure that actually enriches the report. Good are visualizations explaining algorithms, examples, architecture overviews. You may re-use external figures (although, creating your own can be very useful). Caption text of all figures has to be your own.
- **Length:** Stay within a page count of 5-8 pages. References do not count.
- **Format:** Your report needs to use **our template**. If there is *any* visual difference to this template, we will deduct points. You have to submit as PDF.

# Report Draft Requirements

Submit an earlier version of your final report for the peer review process.

- **Content:** This should be as close to your final submission as possible. It should be possible for your peers to give you meaningful feedback in their reviews.
- **Length:** The same as the final report.
- **Format:** The same as the final report.

# Peer Review Requirements

You will read two of your peers reports and write reviews for them. We will follow a single-blind review process: Reviewers stay anonymous.

- **Content:** Pay attention to the following points:
  - **Goal:** Is the goal of the text clear?
  - **Sections:** Does every section serve its purpose?
  - **Structure:** Is there a coherent narrative?
  - **Argumentation:** Can you follow the points of the report?
  - **Language:** How can the writing quality be improved?
  - **Research Idea:** Comment on what you think about the idea.
  - **Simple Mistakes:** Point out simple improvements such as typos.
  - **Strong Points:** Name at least two good things about the report.
- **Tone:** Be constructive and friendly. Your job is to help your peer to improve their report.
- **Length:** Stay within 150-300 words. Be concise!
- **Format:** Submit as PDF.
- **Effort:** Should take you no longer than two hours per review.

# Report Proposal Requirements

Two weeks after you receive your topic you have to submit a report proposal.

- **Content:** Show your plan for the final report:
  - **Topic:** Summarize the topic concisely. What method / system / solution do you present?
  - **Motivation:** Show the relevance of the problem and where it occurs.
  - **Main Part:** What will you focus on in your report?
  - **Goal:** What will the goal of your final report be?
  - **Related Work:** Cite relevant related literature.
- **Length:** Stay within 150-400 words. References do not count.
- **Format:** The same as the final report.

Show that you understood your topic and know how to work on your report.

# Presentation Requirements

You should present key points of your topic:

- **Content:** Key points of your focus topic papers. Teach us what we can learn from this paper. You may limit the presentation scope to your focus topic.
- **Audience:** Optimize your presentation for your peers.
- **Scope:** It might be necessary to limit the content of your presentation. Make sure the audience can learn something new. It is not necessary to include everything.
- **Non-Goal:** Do not try to impress the audience by showing how smart you are or how much you know.
- **Format:** Submit as PDF. You will present using our laptop.
- **Time:** Stay within 13-15 minutes. We will cut you off after 16 min!

# Panel Discussion Requirements

At the end of each session we will have a panel discussion where all presenters will come to the front. You will discuss together *and* with the audience.

- **Content:** You are free to discuss what you want. Some ideas:
  - How do different topics relate to each other?
  - Which solution would you choose for which use-cases?
  - Ideas for further improvements?
  - Ideas for further research?
  - Connection to previous weeks.
  - Crazy ideas for new systems.
- **Moderation:** The presenters are responsible for the moderation.
- **Group:** We will consider the discussion as a group work of all presenters.
- **Form:** Discuss as natural as possible. Do not read prepared text. Interact.
- **Time:** About 25 minutes.

# Pre-Session Protocol Requirements

Find all peers that present in your session. Meet once before your session and practice your presentations together. Prepare talking points for the panel discussion.

- **Content:**
  - **Topics:** For each topic, how does it relate to your topic? (1-2 bullet points each)
  - **Panel Discussion Points:** Possible points to discuss in the sessions. (3-5 bullet points)
  - **Presentation Practice:** What will you change after presenting in front of your peers? (1-2 bullet points)
  - **Presentation Feedback:** What will you change after hearing feedback of your peers? (1-2 bullet points)
  - **Other Presentations:** What did you observe that can be improved? Do not mention names. (1-2 bullet points)
- **Length:** 7-17 bullet points.
- **Format:** Submit as PDF.



# Deadlines

Deadlines for everyone:

- Topic Preferences: 05.05.2025
- Report Proposal: 19.05.2025
- Report Draft: 16.06.2025
- Peer Reviews: 30.06.2025
- Final Report: 14.07.2025

Deadlines based on your presentation date:

- Pre-Session Protocol: 2 days before your presentation.
- Presentation Slides: 1 day before your presentation.

**All deadlines are at 23:59.**

# Supervision

- Ask organizational questions in the **discussion channel** on mattermost.
- Ask short questions about your topic and work as direct message on mattermost.
- Meet your supervisor in person and discuss:
  - Once before the submission of your draft.
  - Once before your presentation.
- Usually personal meetings will improve your final grade by 1.0 (e.g. 2.0 -> 1.0).

# Session Schedule

The structure of a presentation session:

- 3 Presentations per session for 60 min.
  - Present for 13-15 min. (I will stand up after 15, cut you off after 16 min)
  - Discussion for questions regarding the presentation or topic for 2-4 min.
- Short break for 5 min.
- Panel discussion for 25 min.
  - Everybody is welcome to participate in the discussion.
  - Questions regarding individual presentations are allowed.
  - Presenters are responsible to maintain an interesting discussion.

# Next Steps

- Make sure you are in the mattermost team **Mattermost Team MDBS25**
- Find your preferred session topics and focus papers on gitlab:  
<https://gitlab.db.in.tum.de/Rieger/mdbs25>
- Rank your top three favorite session topics and focus topics and send them to **@rieger**  
Your message should look like this:  
    My topic preferences:  
    1: Systems: Neojoin  
    2: Systems: Anyblob  
    3: Optimizers: MemSQL
- Spend enough time to find a topic you really want to work on!
- Deadline is next week!