Aalto University
School of Science

CS-E4640 Course Management
Spring 2026

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Course Git:
https://github.com/rdsea/bigdataplatforms

Aalto Mycourses:
https://mycourses.aalto.fi/course/section.php?id=272443

MS Teams:
CS-E4640 Big Data Platforms | General | Microsoft Teams
Using the code: 6stkb9j for joining

Lectures, tutorials and meetups

- Lectures
  - Key concepts about principles, models, methods, and technologies
- Tutorials
  - Practical, concrete tools and hands-on discussions
- Meetups
  - Adhoc, not mandatory contents but useful tips/experiences
- Nr. of lectures + hands-on/tutorials **!=** Nr. of slots in the course agenda
  - Backup dates (e.g., in case of sickness) & on-demand face-to-face discussions

All dates in the agenda must be booked!

Schedule

Remember the schedule:
https://github.com/rdsea/bigdataplatforms/blob/master/schedule.md

Wed: 12:15-14:00 (lecture)
Thu: 10:15-12:00 (hands-on/meetup)

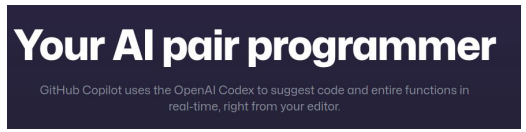
Try to also use Thu slots for concept/assignments discussions and networking!

Communications

- Course discussion (no moderation!)
  - Microsoft Teams (pls. register, see the link in MyCourses)
  - Some students said Teams is not conventional but it is the official one from Aalto
- Find the ideas/answers from the Internet – no problem
  - Everyone knows
    - also GenAI/LLM services
- Everyone should help sharing the knowledge w.r.t course topics
- We try to react as soon as possible but don't expect real-time responses
  - people have different speeds and workloads!

Claude Code

stackoverflow

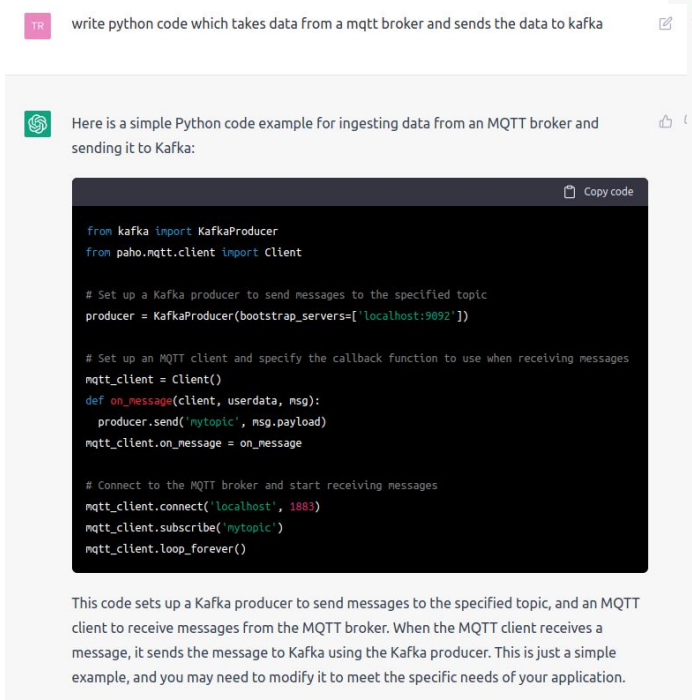


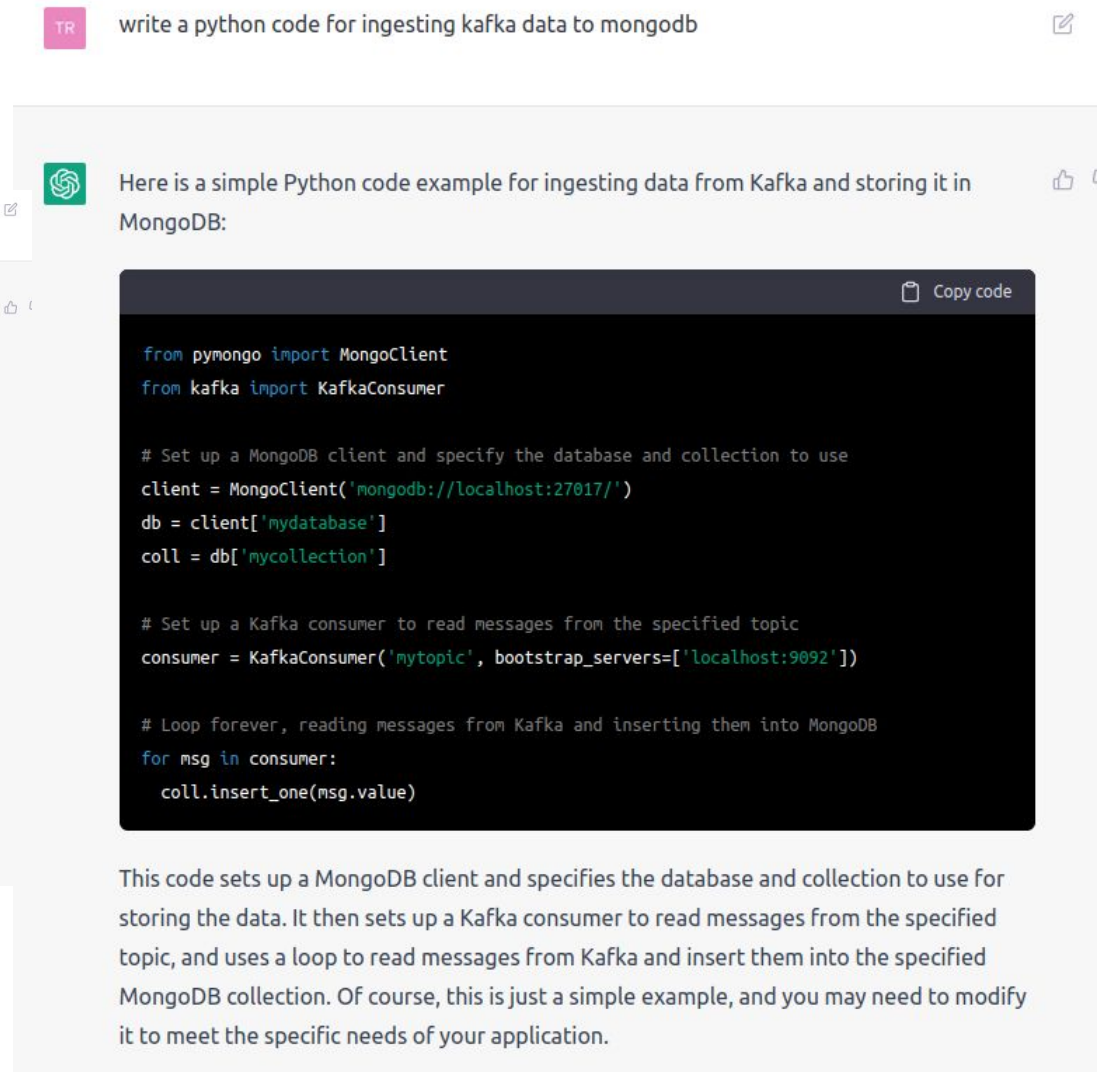
ChatGPT

Gemini

AI assistance: Good or bad hints?

Our code detection might flag it and if you cannot explain or make the information clear, it is a problem





See also:
https://github.com/rdsea/bigdataplatforms/tree/master/tutorials/llmbdp

The Teaching Assistant team

Hong-Tri Nguyen

Postdoc researcher
https://hong3nguyen.github.io/

Korawit Rupanya

Doctoral researcher
https://smart-portfolio.netlify.app/

Debayan Bhattacharya

Doctoral researcher
https://www.linkedin.com/in/debayanbhattacharyavit/

Reaching us via Teams to the team can support you!
Avoid sending emails!

Personal discussion

- Arrange face-to-face meetings
- Using Microsoft Teams to chat and get meeting slots for one-to-one calls
- Discuss your problems with the professor in charge
  - after the lecture/tutorial time and in the office
- Try to have personal discussion with our Teaching Assistants as well!
- Share your problems in the Teams so that we don’t need to repeat the similar questions
- We cannot help if you are silent!

Assignments

- 3 assignments, designed as independent assignments but enable reusability
  - Each divided into 3 parts (design, implementation, and extension)
  - Within a part: an objective is evaluated in the 0-5 scale, then multiplied by a pre-defined weighted factor (based on the part)
  - No final exam!
- Assignment evaluation
  - Real world design, development, reporting, and demonstration
  - But not a “production” outcome
  - **No automatic grading**: we will check your code and do reproducible test
  - **Face-to-face explanation for all assignments ⇒ code generated automatically must be fully understood, otherwise, grades cannot be given**

Assessment for each assignment

- Software artefacts
  - e.g., code and configuration
- Data
- Written reports in Markdown (https://en.wikipedia.org/wiki/Markdown)
  - For explaining your design, evaluation and installation
- Records of running results: logs/screenshots
- Each part might have a weighted factor of 2 or 3 (e.g., 5*3 = 15 points, with the weighted factor=3)
- An assignment should be managed as a git project

Assignments

- Academic honesty
  - Follow the university rule, peer discussion is OK but *creating your own solution*
  - Check the serious consequence of academic violations here https://github.com/rdsea/bigdataplatforms/blob/master/violations.md
  - Pay attention to the use of chat.openai or GitHub Copilot (reuse and attribution principles)
  - **So far the number of violation cases is low in this course but when happens → the penalty is high!**
- All deadlines are hard → not possible to correct if a submission is wrong
- Flexible face-to-face to discuss your assignment submission
  - you demonstrate your understanding of your solution!

Final grading mapping

Highest	Lowest	Letter
100.00 %	90.00 %	Excellent (5)
89.99 %	80.00 %	Very Good (4)
79.99 %	70.00 %	Good (3)
69.99 %	60.00 %	Satisfactory (2)
59.99 %	50.00 %	Pass (1)
49.99 %	0.00 %	Fail (0)

Some incomplete statistics of previous years can be found in the course Git space!

Flexibility versus limitation

- Can use Java, JavaScript/TypeScript, Python and shell scripts only
  - We are flexible but we cannot handle all possibilities
- Use the recommended dataset and technologies
  - But you can propose your own dataset
- Deadlines are hard (don’t be surprised!)
  - We cannot be flexible in order to guarantee the grading on-time
  - Special exception handling is case-by-case (e.g., sickness, family issue)
- **Students must check their submission: wrong files, missing files, etc ⇒ no grading**

Resources

- Check hints from the course Git/Mycourses
  - Main Git https://github.com/rdsea/bigdataplatforms
  - Assignment template: gitlab
    - https://version.aalto.fi/gitlab/bigdataplatforms/assignment-nr-studentid
- Computing infrastructures and data
  - Google Cloud Platform
  - Many tests can be run in your own computers with virtualization technologies enabled
  - Try to use Cloud free services (see course materials)
  - CSC if you can get the resource: https://rahti.csc.fi/

Big data processing in our story: we are not just “data scientist” or BA

User (scientists, engineers) **Provider** **User (business analyst)**

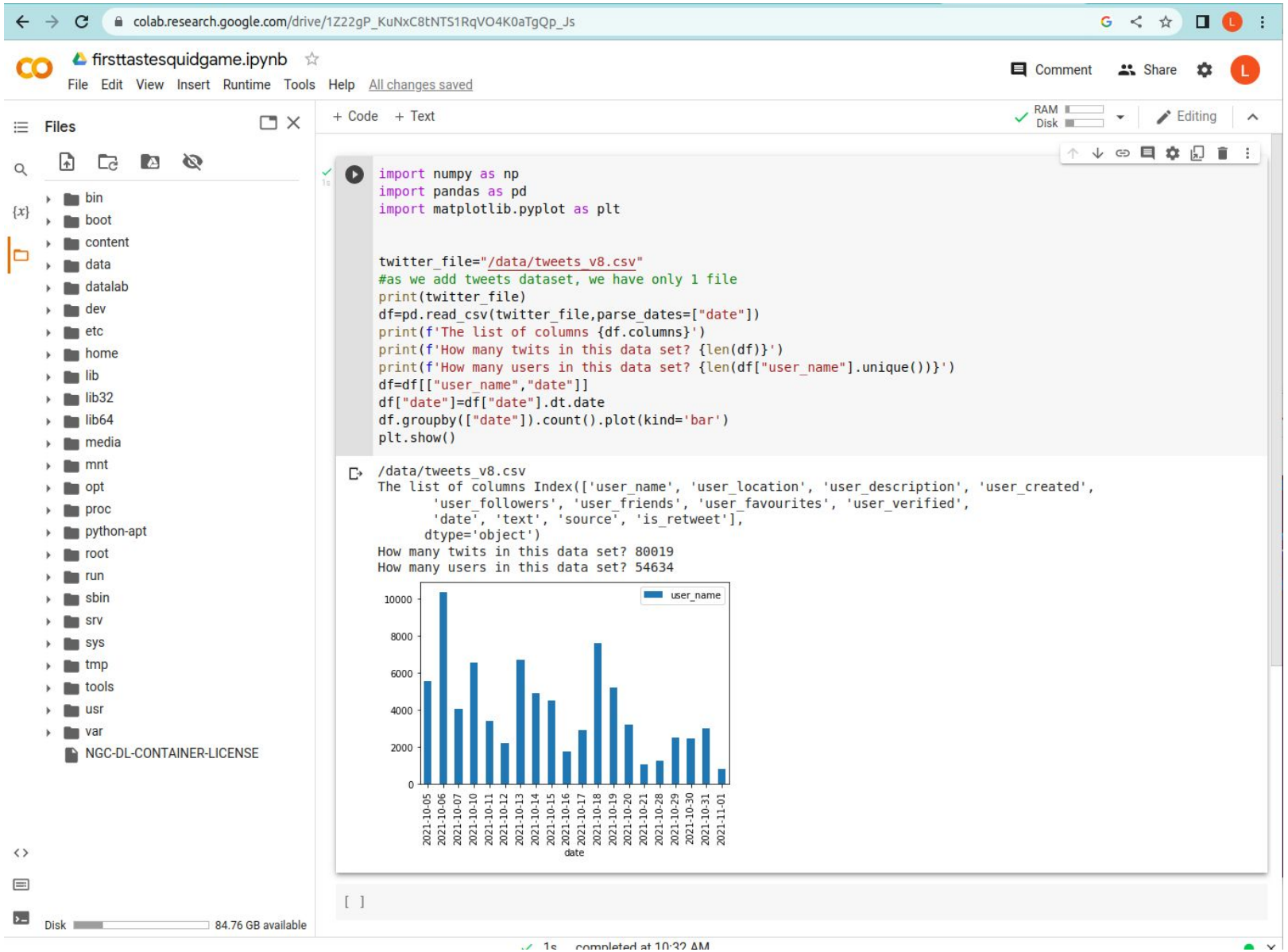
Our learning goals: tasks in systems and applications

- Understand the user/developer needs
- Understand how to build platforms to support the users/developers

Business intelligence analytics style with Superset

Data source: network data from Mobifone, Vietnam

Using Jupyter Notebook to do data analytics



Recap related concepts/techniques from your background required for the course

- Distributed systems and cloud computing
  - Virtualized environments and cloud deployment, concurrency, consistency/availability/fault management, application protocols
- Databases and data management
  - Data modeling, ETL/data pipeline, data partitioning, databases
- Algorithms and programming models
  - Parallel/concurrent programming, workflows, streaming processing
- Service and software engineering
  - Service engineering & microservices

Basics of big data

Thanks!

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rdsea.github.io

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Kiitos
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