COMP251: Algorithms & Data Structures

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About Me

- Jérôme Waldispühl
- Associate Professor of Computer Science
- I am conducting research in Bioinformatics
- How to reach me?
  - Office hours (Tues/Thu 1-2pm)
  - By appointment (Send me an email to schedule a meeting)
  - Email: jeromew@cs.mcgill.ca (Use “COMP251” in title)

Where to get announcements & updates?

Official channel:

- Course web page: http://www.cs.mcgill.ca/~jeromew/comp251.html

Other channels (less reliable):

- Online forum: https://cs251qanda.cs.mcgill.ca
- Dashboard of MyCourses
- Follow hashtag #McGillCOMP251 on Twitter
- Class are recorded and available **online**

Online Forum

URL: https://cs251qanda.cs.mcgill.ca

- Stack exchange style:
  - Ask or answer questions from peers
  - Vote for the most helpful answers/questions
  - Earn reputation
- Forum managed by a TA
- Open 24/7

Teaching Assistants

- Alexander Butyaev (alexander.butyaev@mail.mcgill.ca)
- Carlos Gonzales Oliver (carlos.gonzalez.oliver@gmail.com)
- Antoine Soulé (antoine.soule@mail.mcgill.ca)
- Roman Sarazzin-Gendron (roman.sarrazingendron@mail.mcgill.ca)
- ???

TA's Office hours will announced next week on the course web page.

Evaluation

- 40% for 5 assignments
- 15% for the midterm
- 45% for the final exam

… And:

- Bonus (1% of final grade) for the best participant(s) to the online forum.

Schedule

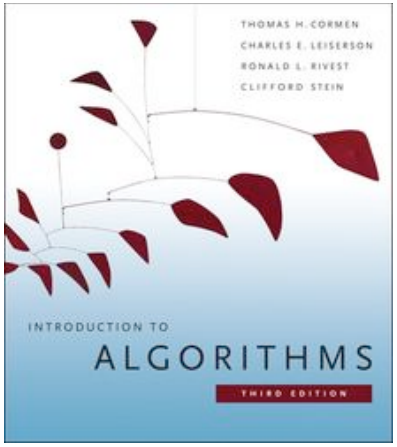
- Classes start… Today
- Reading week: February 27 – March 5
- Midterm exam: March 7
- Classes end on April 11 (included).
- Final exam: TBD

Outline

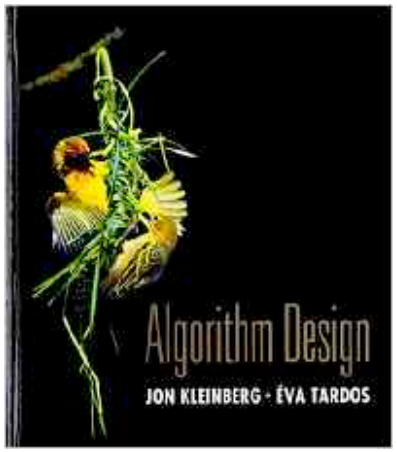
- Jan 10: Review
- Jan 12 – Jan 26: Data Structures (Mostly Trees)
- Jan 31: Algorithm design (Greedy Algorithms)
- Feb 2 – Feb 21: Graph Algorithms
- Feb 23 – Mar 14: Algorithm design (Divide-and-Conquer)
- Mar 16 – Mar 21: Algorithm design (Dynamic Programming)
- Mar 23 – Mar 30: Analysis of Algorithms
- Apr 4 – Apr 11: Advanced topics

Textboooks

- [CLRS2009] Cormen, Leiserson, Rivest, & Stein, *Introduction to Algorithms*. (available as E-book)



- [KT2006] Kleinberg & Tardos, *Algorithm Design*.



(recommended textbooks)

Assignments

- All include at least one programming question
- Programming Language: Java
- Read the formatting guidelines.
- Strictly follow the formatting guidelines!
- Each file must be submitted separately. Do not zip your files!
- Submit your answers electronically on MyCourse.
- Re-submission accepted before the deadline.
- Discuss the assignment, but do not share/copy solutions.
- Print the name of persons with whom you discussed/ collaborated (including instructor and TA).

Formatting programming questions

- Submit the Java source file (i.e. not .class file)
- Ensure that your files compile on SOCS workstations (Note: Create an account if you do not already have one)
- Indent your code!
- Use the template provided.
- Do not use custom libraries (unless specified).
- Follow the syntax of the command line provided in the question.
- Use the test input & output (Note: It does not guarantee that your program is 100% correct).

Formatting text questions

- Write your answers in a PDF or text file (i.e. no word or image file)
- You can return (electronically) handwritten answers:
  - Scan your answers (e.g. you can use printers in Trottier)
  - Take a picture (Risky, check brightness & contrast)
  - Write **clearly**
- Organize your text.
- One **single** file for written answers.

Policy

- Material that does not follow the guidelines will be penalized as follows:
  - First time: The grader will email you. Answer within 24h and you will be graded with a penalty of 20%.
  - Other times: not graded.
- Late assignments will receive a 20% penalty if they are returned within less than 24h after the end of the deadline. **They will not be graded afterward**. (Advice: submit preliminary versions early)
- The only exceptions will be medical exceptions. You must provide a medical note (instructor & McGill).

Short Questions

- At the end of each class, we will post a link to a short anonymous questionnaire (3 short questions) on the previous lecture.
- Answers will be provided at the beginning of the next class.
- The midterm & final exams will include short questions!
- Review questionnaire for the next class: https://goo.gl/forms/Zg3E5W8FB6tQ1ktC2