Data Structures: Course Outline

Pat Morin COMP2402

Carleton University

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Professor Dr. Patrick Ryan Morin

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- From 8:30–16:30, Monday–Friday, I can usually be found in 5177HP

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- Can add or remove data (sometimes)
 - Example: Add the element x at position i (add(i,x))

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Why Study Data Structures?

Data structures underly every computer system

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- Fortunes have been made (and lost) because of data structures
- Many problems are solved efficiently just by using the right data structure

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- First two define the *interface*
- Performance is determined by the *implementation*

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 - implement data structures
 - design new data structures

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Learning about data structures is rewarding for its own sake

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Where Do We Study Data Structures?

Here, in school

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Where Do We Study Data Structures?

- Here, in school
- Later, at work

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- Here, in school
- Later, at work
- "I took your course on data structures about two years ago now, and today I was reminded why it was probably one of the most useful ones I've ever taken. I use a software package for game development and noticed that a certain feature was behaving strangely. I tinkered with it and confirmed it was not caused by something I was doing (or not doing). Nope! Turns out hashing was implemented incorrectly and it simply did not test for certain hashing collisions. This occurred very rarely, but most noticeably with strings. I submitted a bug report and it has been elevated in their bug tracker to the highest priority."

- Instructor: Pat Morin
- Office hours: Wednesday 10:00–12:00, 5177HP
 - TA Office hours will be posted on culearn
- Webpage: culearn.carleton.ca
- Textbook: Open Data Structures (in Java)

Assignments	5 imes 10% = 50%
Mid-Term Exam	15%
Final Exam	35%
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- Exams are multiple-choice Scantron

Automatic Assignment Marking

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 - Improperly packaged, non-compiling code = 0

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- "... has both pros and cons (a notable con is the improbability of getting anything other than 0 or 100% on a question),..."
- "There server submission was OK, but given the choice I'd rather have a TA look at my work and mark it, then they could tell me what was exactly wrong with it."

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Textbook: Open Data Structures (in Java)

opendatastructures.org

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- Supplementary text:
 - Mathematics for Computer Science (free PDF)

Mostly: On the board, using chalk

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- Mostly: On the board, using chalk
- Less often: On the projector, writing and testing code

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The End

Questions?

Pat Morin COMP2402 Data Structures: Course Outline

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