CS234

DATA TYPES AND STRUCTURES

by

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List of Slides

Goal(s) of the lectures

1. How to use simple data structures?

   $\Rightarrow$ Problem solving
   $\Rightarrow$ Data layout(s)

2. How to present your work to others?

   $\Rightarrow$ Abstractions (ADTs)

3. How good is a particular solution?

   $\Rightarrow$ Model(s) of computation
   $\Rightarrow$ Analysis techniques
   $\Rightarrow$ Really hard problems

4. How to design Algorithms?

   $\Rightarrow$ Algorithm design techniques

Class Information

Instructor:

David Toman

e-mail: **`david@uwaterloo.ca`**

phone: x4447 (use e-mail if possible)

Classes:

Tue–Thu 11:30–1:00 in MC2038

Class Information:

`http://db.uwaterloo.ca/~david/cs234`

Tutors/Office hours/General help:

`mailto:cs234@student.math.uwaterloo.ca`

`http://www.student.math.uwaterloo.ca`
`/~cs234`

Office hours:

Tuesday 4:30–6, DC 3128, or by appointment.

Books, Lecture Notes, etc.

Required Text:

Data Structures and Algorithm Analysis. 2nd ed.
Mark Allen Weiss. Benjamin Cummings, 1995.

References/Optional:

The Art of Computer Programming (vol. 1,3).
Donald E. Knuth, Addison-Welsley 1997.

Lecture Notes:

Additional *lecture notes* and *copies of transparencies* are/will be available from the class WWW page.

Prerequisites

- You must know how to use **JAVA** or **PASCAL**

  $\Rightarrow$ familiarity with syntax, simple I/O, etc.
  $\Rightarrow$ edit, compile, and run simple programs **in UNIX**

- You must understand elementary math

  $\Rightarrow$ what is a set, relation, function, inclusion, etc.

Assessment

- lectures (no influence on grade),
- homework assignments: 30%
  $\Rightarrow$ electronic submission **AND** hardcopy in class
- midterm exam: 30%
- final exam: 40%

At least 50% score on the midterm and final is necessary to pass the class.

Fine print: the usual university policies on academic honesty, fair use of computing facilities, etc., apply by default.