CPSC 1181
Object-Oriented Computing

Course Introduction

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Summer 2017

Langara.
THE COLLEGE OF HIGHER LEARNING.

Your Instructor

- Jeremy Hilliker, BMath, MSc, MBA
  - Office: A-383
  - Office Hours:

Monday	10:30 – 11:20 2:30 – 3:20	A-383
Tuesday	2:30p – 3:20	B-019
Wednesday	10:30 – 11:20 2:30 – 3:20	A-383

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    - Please put “CPSC 1181” at the start of your subject line.
  - Phone: 604-323-5511 x2421

Format

- Lecture 4.0 h + Seminar 0.0 h + Lab 2.0 h

- 3 sections
  - Please go to your own section!

Evaluation

- Assessment Weighting

Assignments & Labs	35%
Quizzes & Midterms (2)	30%
Final Exam	35%

- Department Policies
  - You must get 50% average in the exams to get a C
  - You must attempt every assignment, and you must get a “satisfactory” mark
  - You can’t miss more than 20% of class
  - See Course Outline (D2L)

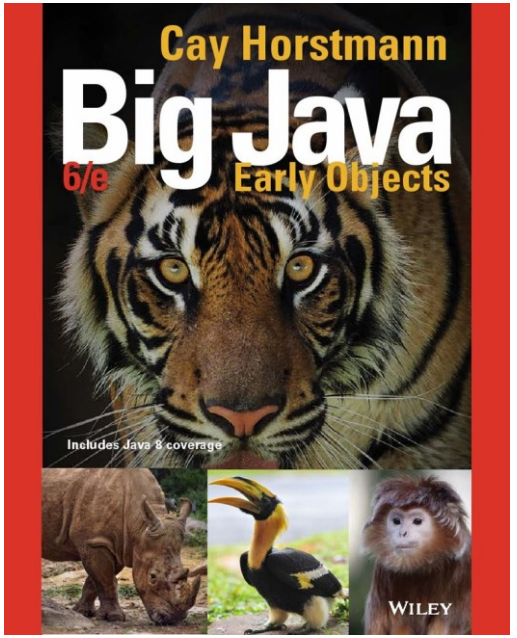
GPA	Grade	Average	Description
4.33	A+	90 – 100	Distinguished Achievement
4.00	A	85 – 89	
3.67	A-	80 – 84	
3.33	B+	76 – 79	Above Average Achievement
3.00	B	72 – 75	
2.67	B-	68 – 71	
2.33	C+	64 – 67	Satisfactory Achievement
2.00	C	60 – 63	
1.67	C-	55 – 59	
1.00	D	50 – 54	Marginal Performance
0.00	F	< 50%	Unsatisfactory
0.00	N		Did not complete
-	W		Withdrawal

Assignments

- Every week!
- Released in 1st half of week
- Due following Monday at 11:30pm
  - Late deadline: Tuesday at 11:30pm
  - 20% penalty for late submission
  - No further extensions
- Lowest mark dropped
  - No further exemptions
  - Don’t waste this! The last assignment is hard.

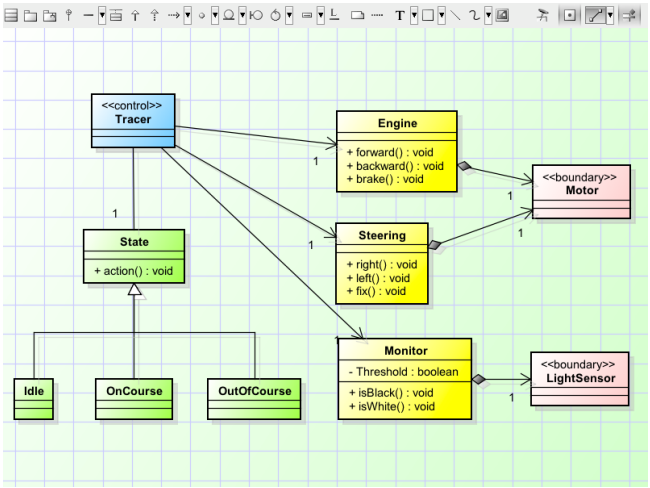
References

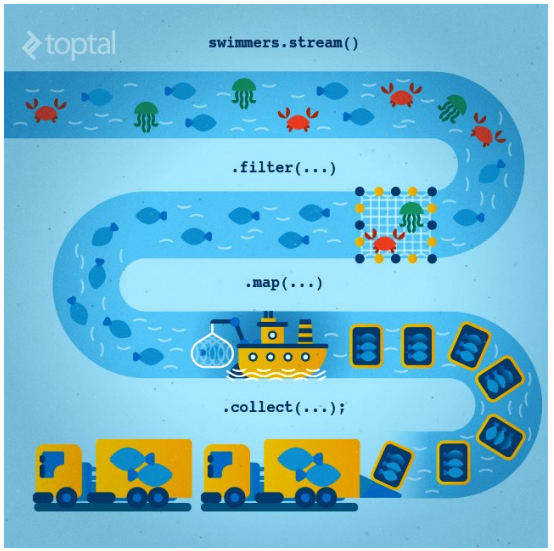
- *Big Java: Early Objects, (6th ed.)*
  - Cay Horstmann. 2015. John Wiley & Sons, Hoboken, NJ.
  - Don't download this illegally.
- The course's Desire2Lean page
- Javadoc: J8SE
- Big Java's Student Companion Website
- Google



Material

- Java 8 Standard Edition
- UML





Why Java?

- Widely adopted high-level language
- Big in:
  - Enterprise (back end)
  - Banking
  - Mobile (Android)
- Lots of libraries
- Great documentation
- Tons of resources
- High performance
- Simple
  - No pointers
  - No operator overloading
  - No explicit memory management
- Cross platform
  - Platform independent
  - Architecture neutral
  - Portable
- "Safe"
  - Statically Typed
  - Automatically Managed Memory
    - and checked
    - NO POINTERS!
  - Sandboxed
- Feature rich (and still evolving)
  - "Modern" constructs and abstractions
  - Threads and monitors from the start
  - Distributed: ~~RMI & EJB (and MPI)~~
  - Parallel, great concurrency library

Why UML?

- Good tool to communicate high-level program design & interaction, as well as system interactions
  - Between people
  - *Across time!*
- Visualize architecture
- Exposes opportunities for simplification
- Removes ambiguity
- Manage risk

- Standard
- There are tools
- Flexible
- Portable
- Subsets are ok!
- Architecture is important

Learning Objectives

- Upon successful completion of CPSC1181, the student will be able to:
  - explain encapsulation, information hiding, inheritance, and polymorphism
  - use modeling tools, such as UML, to design objects before coding, and for reverse engineering
  - design, develop, implement and properly document programs for various applications of intermediate difficulty using an OO language, such as Java.

Week	of	Lecture	Readings	Midterms
1	May 1st	Data Types, Strings, Testing	c. 1, 4-6, B, C, E-G, I	
2	May 8th	Using Objects, Implementing Classes	c. 2, 3	
3	May 15th	Arrays, Array Lists, Collections	c. 7, 15	
4	May 22nd	2D graphics, Designing Classes	c. 2, 8	
5	May 29th	Inheritance, Polymorphism, Abstract Classes	c. 9	
6	June 5th	Interfaces, Events, Lambda	c. 10	T, June 6th
7	June 12th	Streams	c. 19	
8	June 19th	OO Design, UML	c. 12	
9	June 26th	I/O, Exceptions	c. 11	
10	July 3rd	GUI, Layout, Swing	c. 20	T, July 4th
11	July 10th	Basic Concurrency, Callbacks	c. 22	
12	July 17th	Networking	c. 23	
13	Jul 24th	More Concurrency: Race Conditions & Deadlock	c. 22	
-	-	Exam period: July 31st – Aug 11th	-	-

Final notes

- See course outline (on D2L) for more info, and
  - Course Schedule
  - College Policies
  - Department Policies
  - Course Policies
- Plagiarism
  - Don’t cheat!
  - See Course outline