CompSci 230 S2 2105
Software Construction

Course Information

Overview

- In Stage 1, you learned how to write programs to solve small problems.
- In CompSci 230,
  - we teach programming "in the large".
  - Large software systems have many stakeholders.
    - What will its users want?
    - Can we describe user requirements, accurately and succinctly?
  - Large software systems are very complex.
    - Can we describe the **design** of a complex software system, accurately and succinctly?
    - Can we be sure that a complex system will do what it is designed to do, and that it will not do anything unintended?
- In CompSci 230, you will learn some incomplete answers to these difficult questions.

Syllabus : Four Themes

- The object-oriented programming paradigm
  - Object-orientation, object-oriented programming concepts and programming language constructs – because, for many important problems, OO design is a convenient way to express the problem and its solution in software.
- Frameworks
  - Inversion of control, AWT/Swing and JUnit – because many important "sub-problems" have already been solved: these solutions should be re-used!
- Software quality
  - Testing, inspection, documentation – because large teams are designing, implementing, debugging, maintaining, revising, and supporting complex software.
- Application-level concurrent programming
  - Multithreading concepts, language primitives and abstractions – because even our laptops have multiple CPUs. Dual-core smartphones are now available...

Lecturers & Tutors

- Lecturers
  - Angela Chang (Coordinator)
    - Email: angela@cs.auckland.ac.nz
    - Office hour: Open door policy – Visit any time
    - Room: 303S.494
    - Phone: (09) 3737 599 x 86620
  - Ralf Haeusler
    - Email: rhae001@aucklanduni.ac.nz
    - Office hrs: TBC
  - Tutor (TBC)

Assessments

- Practical (20%)
  - Assignments and Code Runner Exercises:
- Theoretical (80%)
  - Test 15%, 1pm-2pm Thursday, 27 August 2015.
  - Exam 65%, date and location TBC.
- You must pass the practical (assignments + quizzes) AND the theoretical (test + exam), in order to pass the course.
  - The practical passline may be lower than 50%! This is a decision of the examiners, so you should sit the exam even if you have poor practical marks.

Policy on Cheating and Plagiarism

- We use many ways to check that the work each student submits for marking is their own work and was not produced by, or copied from, someone else.
  - We start our checks by running a comparison program, which automatically compares all submissions from students.
- Note:
  - All assignments deemed to be too similar will be assigned a zero mark, and will be invited (by email) to discuss the situation with the course supervisor.
  - Offenders may be referred to the University Disciplinary Committee. See http://www.auckland.ac.nz/uoa/home/about/teaching-learning/academic-integrity.
- Both the person who copied the work and the person whose work was copied are allocated a zero mark.
  - It is important that you do not lend your assignments to others. Never give anyone a copy of your assignment. It is the responsibility of each student to ensure that others do not copy their work.

Assessments (con't)

- You cannot re-sit a test or exam in this course.
    - You should always sit your tests & exams, if at all possible.
    - You should see a registered doctor, dentist, or counsellor as soon as possible.
  - You can apply for aegrotat and compassionate consideration, if you feel that personal circumstances affected your performance or preparation.
    - See http://www.auckland.ac.nz/uoa/cs-aegrotat-and-compassionate-consideration.
- Severe penalties for late assignment submissions:
  - -20% of possible marks, if submitted by 11:59pm on Monday after the due date.
  - -50% of possible marks, if submitted by 11:59pm on the Wednesday after the due date.
  - Contact the coordinator, if you have a medical condition or an exceptional, unforeseen difficulty which prevents you from completing the assignment on-time.
- Lateness on code runner exercises
  - No late submissions.

Tutorials

- Tutorials are optional, but highly recommended!
  - Please note: there are no tutorials in the first week of lectures.
- Currently, all tutorials are held in 303S-G75 or 303S-B75.
  - Your tutorial (lab) section is visible on Student Services Online.
  - You're welcome to attend other tutorial sections, but there are only enough seats for the enrolled students -- so you may be asked to leave.
- What happens at a tutorial:
  - You'll do exercises based on prior lecture material.
  - You'll prepare for the current assignment.
  - You'll discuss sample answers to prior assignments and quizzes
  - You'll ask course-related questions, and the tutor will either answer them or "kick them upstairs" – by suggesting you ask this question during lecture!
    - You'll get the most out of your tutorials if you participate actively.
    - You'll get very little (or nothing!) out of attending tutorials (or lectures!) if you try to "learn by osmosis". You'll learn most by "giving it a go", seeing what happens, and thinking about it.

Code Runner Exercises

Course: COMPSCI230 C
Department of Computer
https://www.coderunner.auckland.ac.nz/moodle/course/view.php?id=1193
THE UNIVERSITY OF AUCKLAND NEW ZEALAND
COMPSCI.230.C.S2 2015
Home
University of Auckland
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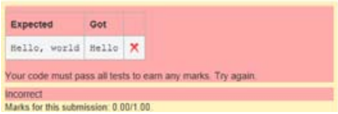
About
HOME » COURSES » 2015 » COMPSCI.230.C.S2 2015
Turn editing on
Exercise 01
NAVIGATION
Home

- The CodeRunner tool is designed to help you practise by presenting you with a set of **short online exercises**.
- Submissions are graded by running a series of test cases of the code in a sandbox, comparing the output with the expected output.
  - You will see immediate feedback and your score once you run your code.
  - You may have as many attempts as you need – do not worry about making mistakes. Every time you make a mistake, it is an opportunity to learn. We will take your highest score.

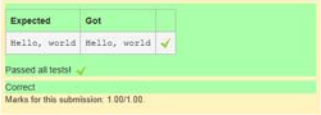


Expected	Got	
Hello, world	Hello	✗

Your code must pass all tests to earn any marks. Try again.

Incorrect

Marks for this submission: 0.00/1.00



Expected	Got	
Hello, world	Hello, world	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00

  - You can access your exercises, by logging into
  - https://www.coderunner.auckland.ac.nz/moodle/
- All exercises are due at 11:59pm on the due date.

Need Help?

- Required readings are online, mostly from **The Java Tutorials**
  - Start today! Read about Object-Oriented Programming Concepts, at http://docs.oracle.com/javase/tutorial/java/concepts/index.html
  - If you know Python, read http://fpl.cs.depaul.edu/jriely/java4python/.
  - My primary goal is to help you "learn how to learn technical material."
  - If you merely listen to lectures, you'll learn very little.
- Recommended readings are available in the library or online.
- The course website has lecture notes, examples, and some other useful resources, including links to software such as Eclipse.
  - Website: http://www.cs.auckland.ac.nz/compsci230s1c/. Visible via Cecil.
- Don't hesitate to ask your tutors and lecturers for help if you're "stuck"!
  - But… there are only a few of us, and hundreds of students. Response may be slow.
  - Unlike in stage-1 papers, we will not spoon-feed you with solutions.
  - You are expected to explore. Discover your own solutions to your own problems! If you're not making mistakes, you're not learning!! (Can you recognize a mistake?)

Part 1 - Timetable

Wk	Tu	Thurs	Fri	Note
1	21/Jul Course, Intro to Java	Intro to Java	Intro to ODD	Code Runner Ex 1 (1 %)
2	28/Jul ODD	UML & Use cases	Inheritance	Code Runner Ex 2 (2%)
3	4/Aug Binding	Abstract Classes	Nested Classes	Code Runner Ex 3 (2%)
4	11/Aug Generics	Introduction to Frameworks	GUI Programming	
5	18/Aug Applet & AWT	Swing	MVC	
6	25/Aug Custom Widgets and Drawing	Term Test	No Lecture	A1 (5%)