INFO1113 Object-Oriented Programming

Week 1A: Introduction,
Overview and guidelines

Slides developed by Tyson Thomas

Copyright Warning

Topics

What's the subject?

- This is ***Object Oriented Programming***.
- By the end of the semester, you are able to write, design and modularise a java application.
- We expect active participation from all students, engage with tutorial and forum discussion and continually practice.
- The responsibility for your learning falls onto you, we will do our best to teach you, curate and provide learning materials for you.

Resources

Two platforms are used for this subject:

- Ed Stem (https://edstem.org)
  - Online discussion
  - Assignment submission
  - Challenges
  - Course materials
- Canvas (https://canvas.sydney.edu.au/courses/25959)
  - Marks for your assessments
  - Quizzes
  - Online Recordings (echo360)

Text Book

Prescribed Textbook:

Java: An Introduction to Problem Solving and Programming, 7th Edition
Walter Savitch, Simon Mock

ISBN: **9781292018331**

Optional Textbook:

Effective Java, 3rd Edition,
Joshua Bloch

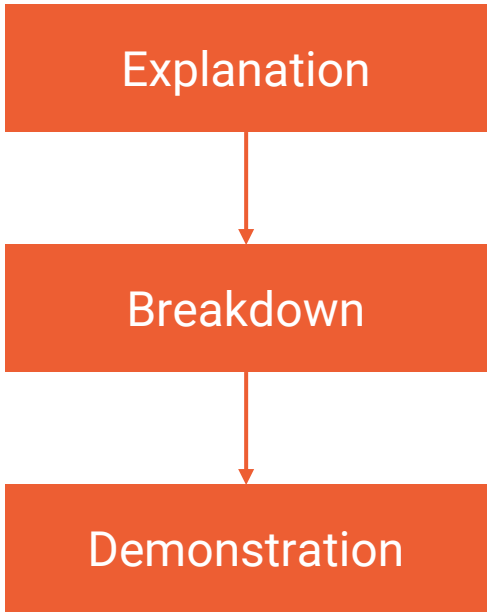
ISBN: **0134685997**

Weekly readings will be announced on **Ed**. You will be expected to keep up with readings and deeply understand the topic.

But what about lectures?

Lecture Flow

As part of an introduction of a concept, I like to break down the concept through visualisation and demo it.



Subject Flow

Since this subject requires completion of INFO1110, we assume you remember majority of the content from the previous subject and adapt to the new syntax.

- Weeks 1-4 will focus on learning the language basics for Java
- Weeks 5-10 Object oriented concepts, type patterns, application design, packaging, testing and build tools
- Weeks 11-12, idioms, wildcards and new java features

What you will learn

Designing more complex programs and the Java programming language

- Interpreting specifications and designing applications
- Creating flexible and robust code
- Proceduralise problems
- Working with external libraries
- … more!

the ease with which you can modify your code to fulfill some purpose you hadn't guessed at the time you wrote it

handling unexpected termination and unexpected actions by displaying accurate and unambiguous error messages.

This isn't a design patterns course but helps with understanding programming design fundamentals, modularising code and packaging.

Why Java?

Not only is Java largely used in industry it has been chosen for these following reasons:

- OOP is the primary paradigm
- Flexible
- Portable
- Legacy and interoperability
- Static and strongly typed
- Open source
- Performant

Yeah… but what can I make with Java?

Cool things...

Where *Java* is suitable

- Servers and web backends
- Databases and data processing
- Multimedia (video games, sound generation, etc)
- Networking applications
- Mobile applications
- Frontend web applications[1]
- As another name for coffee[2]

Where it isn't *suitable*

- Operating systems
- Embedded programming (Programming microcontrollers)

[1]Web Assembly through TeaVM

[2]Bad joke, ignore

But what is this OOP thing?

Object oriented programming

Object Oriented Programming is another programming paradigm, In the same way that **procedural** and **functional** are programming paradigms.

- It is just a different way of writing code
- The idea is that objects communicate to each other
- Reusing and portability
- Encapsulation (can hide attributes)
- Makes your applications more robust and maintainable

Studying this subject

As outlined in Sydney Curriculum, INFO1113 requires you to:

- Attend lectures (2 hours)
- Attend tutorials (2 hours)
- **Independent Study (7 hours)**

Independent study is ***vague*** because it is dependent on ***how*** you use your time.

Studying this subject

As outlined in Sydney Curriculum, INFO1113 requires you to:

- Attend lectures (2 hours)
- Attend tutorials (2 hours)
- **Independent Study (7 hours)**
  - **Readings/Review (~2 hours)**
  - **Challenges/Assignments (~4-6 hours)**

Independent study should consist of reading the week's chapters and working on the challenges on Ed or your own programming problems.

Remember to take some breaks, stay hydrated and eat well.

It all comes down to practice!

Teaching Team

Lecturer

Dr. Mohammad Masbaul Alam Polash

Our tutoring team for this semester!

- Andrew Esteban (TA)
- Madeleine Wagner
- Nejc Moskon
- Nikola Grujic
- Samuel Lin
- Sudeshna Sengupta
- Adam Ghanem
- Daniel Friedrich
- Finnegan Waugh
- Samarth Sehgal
- Zhiye Hong
- Ben Gane
- Sheikh Mohammad Mostakim Fattah

If you encounter any problems with our tutors, please contact the TA or lecturer directly.

Contacting Staff

You should *definitely*

- Post questions on **ed** if you're having problems,
- Contact your tutor if you'd like more challenging things to do
- Be really specific in your questions
- For serious/complex course issues, email the coordinator

You should *not*

- Expect an immediate response
- Expect all questions on **ed** to be answered by teaching staff
- Post this question -> "my thing doesn't work"
- Expect to pass just by showing up.
- Ask for more marks at any time.
- Expect help on *beginning* of the course at the end

When you want help

- Look at your notes and course textbook.
- Look on **ed** *before* potentially asking the same question someone else has asked!
- Ask your friends (don't cheat!)
- Ask your tutor directly
- Get in touch with the lecturer

- Student admin (https://sydneystudent.sydney.edu.au) or contact the Student Centre. Please check these first. E.g. timetable, passwords, payments, enrolments etc.

Assessments

- Online Task (10%, Multiple Weeks)
- Quiz 1 (7%, Week 6)
- Quiz 2 (8%, Week 11)
- Assignment 1 (10%, Week 7)
- Assignment 2 (15%, Week 12)
- Final Exam (50%, Exam Period)

Absence on the day will result in zero marks.[3]

[3]Exception is Special Consideration

Assessments (Late)

- Assignments submitted electronically are due at 23.59 on the submission day.

- Consistent penalty of 25% per day late, e.g.:
  - Assignment that would get 9/10 and is 2 days late will lose 50% of the full 10 marks, i.e. new mark = 5/10

- Assignments more than 4 days late will receive 0.

Assessments

Assignments and Tasks are ***individual*** *work*.

You must get ≥ 40% in the final exam to be permitted a pass.

You must also get a combined mark of at least **50%** in total

*Progressive Mark **44%**, Exam Mark **50%**, total **47%**: **Fail***
*Progressive Mark **75%**, Exam Mark **35%**, total **55%**: **Fail***

Special Consideration (University policy)

- If your performance on assessments is affected by illness or misadventure
- Follow proper bureaucratic procedures
  - Have professional practitioner sign special USyd form
  - Submit application for special consideration online, upload scans
  - Note you have only a quite short deadline for applying
  - http://sydney.edu.au/current_students/special_consideration/
- Also, notify coordinator by email *as soon as anything begins to go wrong*
- There is a similar process if you need special arrangements eg for religious observance, military service, representative sports

Automatic Marking

- Public test cases are **not the only** test cases. We have **private** test cases (can't see the test results before clicking "Mark")
- **Do not deceive the automarker**, you will be setting yourself up for disappointment and you **hinder** your own learning.
- Exists as a feedback loop for you, any other science subject would expect you to devise a sensible evaluation scenario.
- Read the specification clearly, ask questions on ***Ed*** if it is unclear.

Submissions

- Your software **must be written in Java** and **must compile** and **run** on the Ed submission system
- The test cases provide feedback and an indicative mark but not your final mark.
- You may be required to **explain** your code to your tutor, or to the **Lecturer** or **Unit Coordinator**. If you can't explain what it does, you won't get a mark.
- Don't get other people to do your assignments for you.

Plagiarism

- Simply put: **Don’t do this**, any work you submit will be checked for similarity.
- By participating in it, you’re only hurting your own education and your degree.
- If you are having serious difficulties with the subject, please contact us.
- For any work that is not your own, please make sure you **attribute** the original author.

Academic Integrity (University policy)

- "The University of Sydney is unequivocally opposed to, and intolerant of, plagiarism and academic dishonesty.
  - Academic dishonesty means seeking to obtain or obtaining academic advantage for oneself or for others (including in the assessment or publication of work) by dishonest or unfair means.
  - Plagiarism means presenting another person's work as one's own work by presenting, copying or reproducing it without appropriate acknowledgement of the source." [from site below]

– http://sydney.edu.au/elearning/student/EI/index.shtml

- Submitted work is compared against other work (from students, the internet, etc)
  - TurnitIn for textual tasks (through Canvas), other systems for code
- Penalties for academic dishonesty or plagiarism can be severe
- Complete self-education AHEM1001 (if required)

Source of Help

Lecturer	Teaching Assistants / Tutors	Classmates	Private tutors	Online forums/ Online tutors	Students outside course/UoS	Hired coders Tutorial Company outside University	Relatives	Other

- Individual assessment
- A student needs to gain an understanding of fundamental knowledge/skills
- It is important to master the knowledge/skills themselves

Encouraged
Attribution required
Not acceptable
Ask Lecturer/Coordinator

Types of Help

Understanding General Concepts	Explained using similar material (not assignment)	Sharing approach/concept to derive assignment solution	Designing code/solution	Implementing code/solution

- Individual assessment
- Gain an understanding of fundamental knowledge/skills
- Master the knowledge/skills yourself
- Obtain help through relevant teaching material and practices but not directly on assessment materials

- Encouraged
- Attribution required
- Not acceptable
- Ask Lecturer/Coordinator

WHS Induction

School of Computer Science

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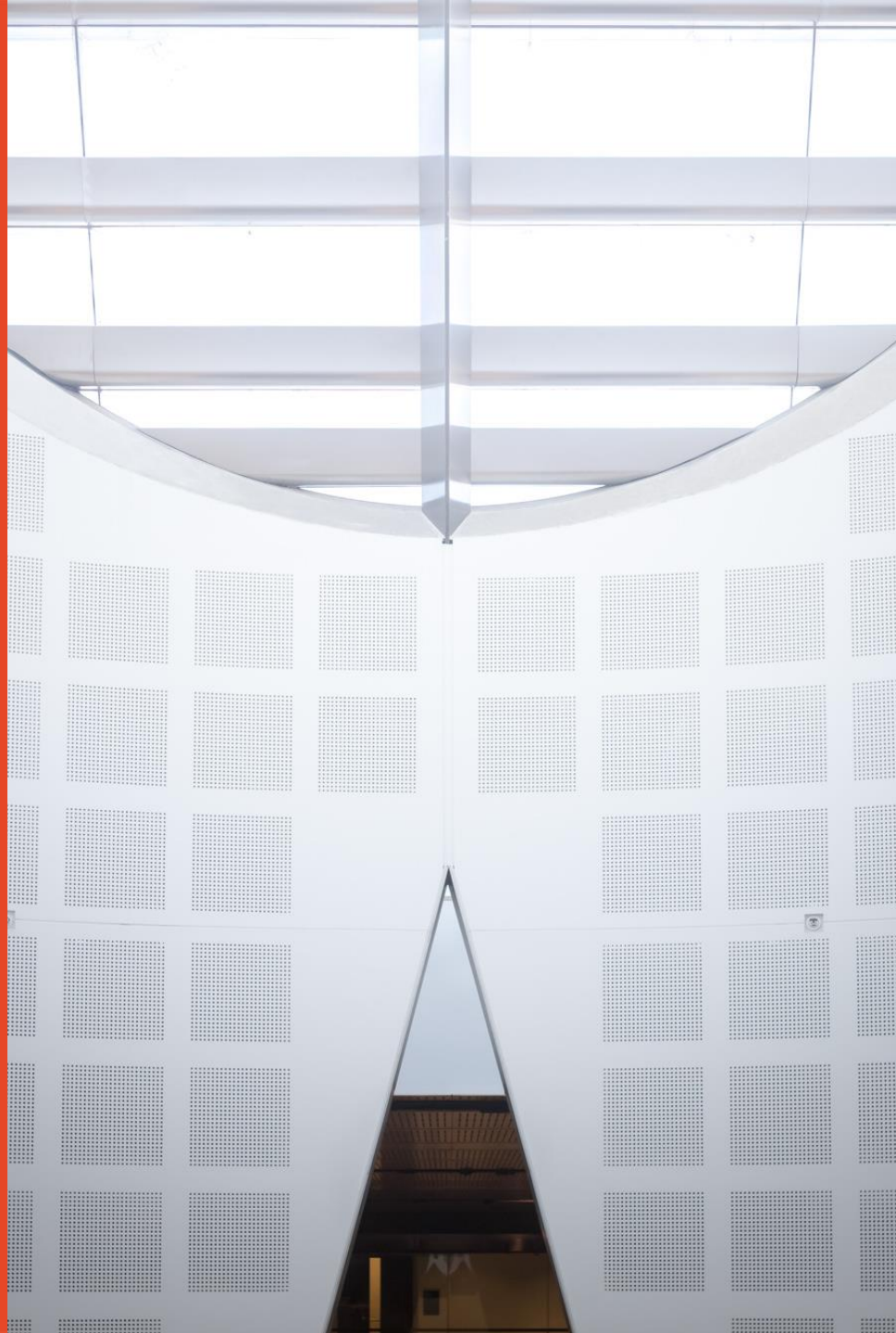


General Housekeeping – Use of Labs

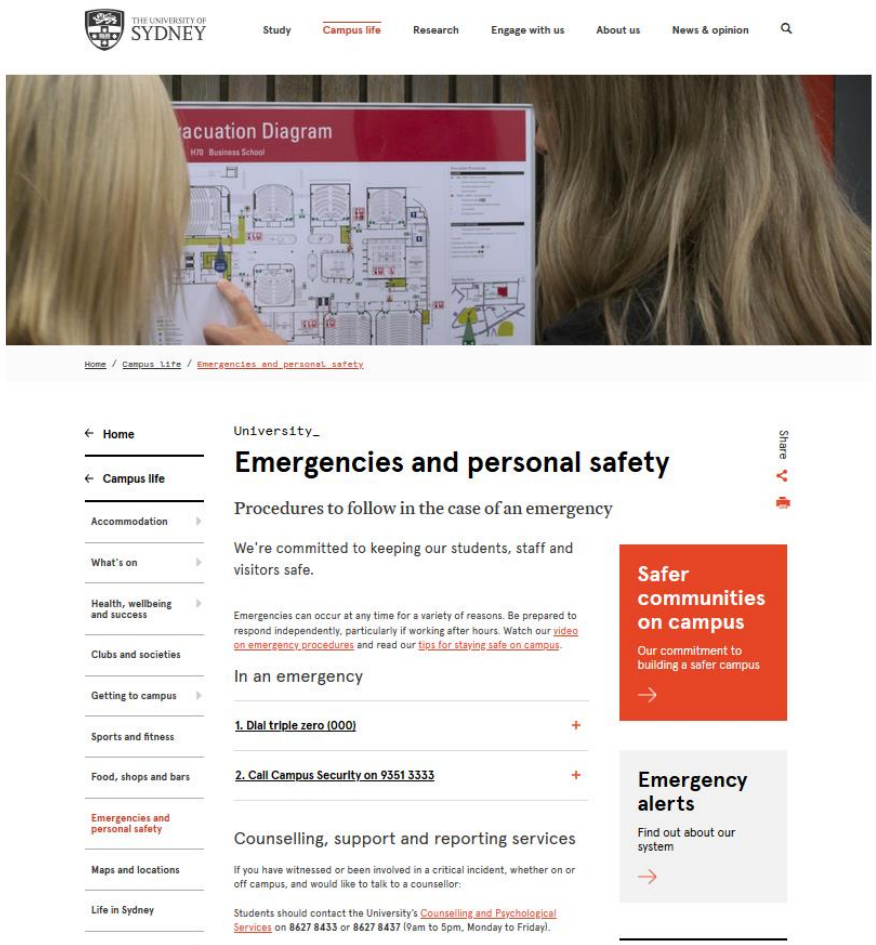
- Keep work area clean and orderly
- Remove trip hazards around desk area
- No food and drink near machines
- No smoking permitted within University buildings
- Do not unplug or move equipment without permission





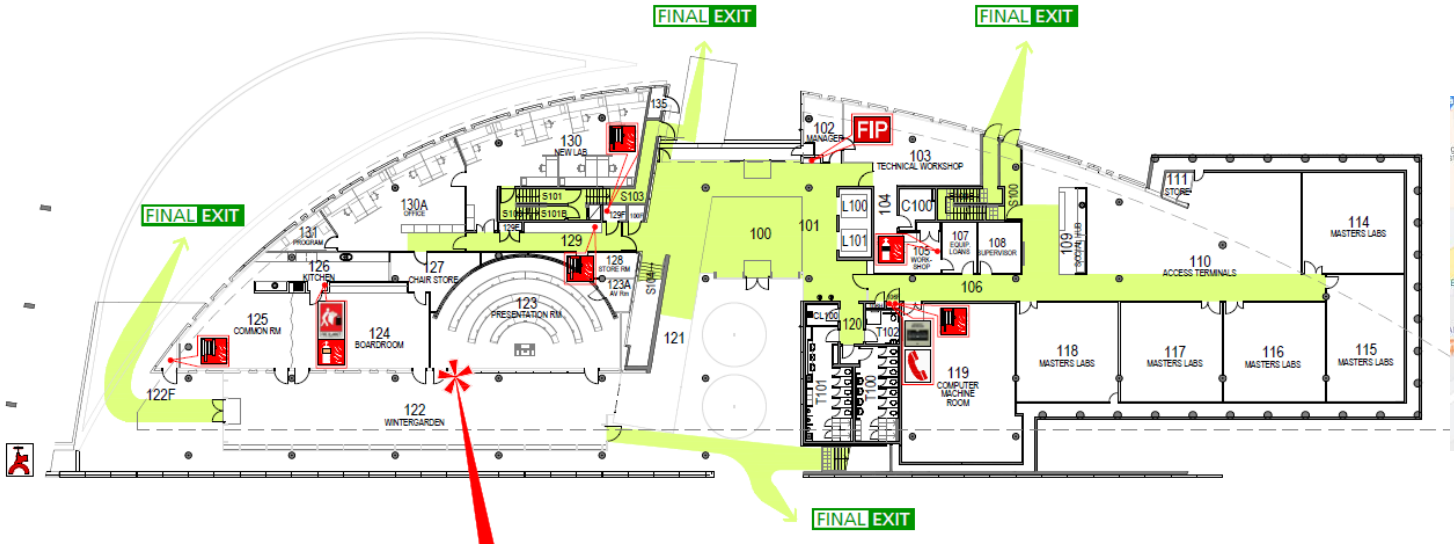
EMERGENCIES – Be prepared

https://sydney.edu.au/campus-life/safety-security.html

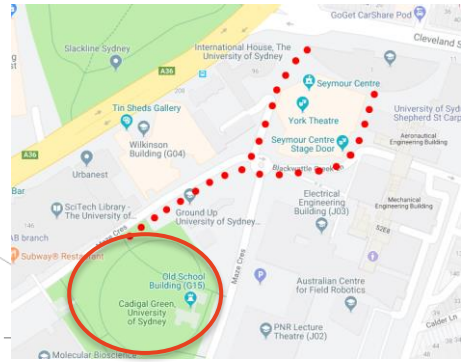


EMERGENCIES

WHERE IS YOUR CLOSEST SAFE EXIT ?



Assembly Area: Cadigal Green



EMERGENCIES

Evacuation Procedures

ALARMS

BEEP... BEEP... Prepare to evacuate

1. Check for any signs of immediate danger.
2. Shut Down equipment / processes.
3. Collect any nearby personal items.

WHOOP... WHOOP... Evacuate the building

1. Follow the EXIT exit signs.
2. Escort visitors & those who require assistance.
3. DO NOT use lifts.
4. Proceed to the assembly area.

EMERGENCY RESPONSE

1. Warn anyone in immediate danger.
2. Fight the fire or contain the emergency, if safe & trained to do so.

If necessary...

3. Close the door, if safe to do so.
4. Activate the "Break Glass" Alarm  or 
5. Evacuate via your closest safe exit. EXIT 
6. Report the emergency to 0-000 & 9351-3333

MEDICAL EMERGENCY

- If a person is seriously ill/injured:
  1. **call an ambulance 0-000**
  2. **notify the closest Nominated First Aid Officer**

     If unconscious– send for Automated External Defibrillator (AED)
     AED **locations**.

     NEAREST to CS Building (J12)
     - Electrical Engineering Building, L2 (ground) near lifts
     - Seymour Centre, left of box office
     - Carried by all Security Patrol vehicles

  3. **call Security -** 9351-3333
  4. **Facilitate the arrival of Ambulance Staff (via Security)**

Nearest Medical Facility
University Health Service in Level 3, Wentworth Building

First Aid kit – SIT Building (J12)
kitchen area adjacent to Lab 110

School of Computer Science Safety Contacts

CHIEF WARDEN
Greg Ryan
Level 1W 103
9351 4360
0411 406 322

FIRST AID OFFICERS

Julia Ashworth
Level 2E Reception
9351 3423

Will Calleja
Level 1W 103
9036 9706
0422 001 964

Katie Yang
Level 2E 237
9351 4918

Orally REPORT all INCIDENTS & HAZARDS to your SUPERVISOR

OR

Undergraduates:	to Katie Yang	9351 4918
Coursework Postgraduates:	to Cecille Faraizi or Keiko Narushima	9351 6060 8627 0872
CS School Manager:	Priyanka Magotra	8627 4295

Assistance

- There are a wide range of support services available for students: https://sydney.edu.au/campus-life/health-wellbeing-success.html
- Please make contact, and get help
- You are not required to tell anyone else about this
- If you are willing to inform the unit coordinator, they may be able to work with other support to reduce the impact on this unit
  - eg provide advice on which tasks are most significant

Have a disability that impacts your study?

The definition of disability under the **DDA (1992)** includes temporary or chronic medical conditions, physical or sensory disabilities, psychological conditions and learning disabilities.

To get assistance, students need to register with Disability Services. It's advised to do this as early as possible. Contact us or review our website to find out more.

sydney.edu.au/disability

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Other support

- Learning support
  - http://sydney.edu.au/study/academic-support/learning-support.html
- International students
  - http://sydney.edu.au/study/academic-support/support-for-international-students.html
- Aboriginal and Torres Strait Islanders
  - http://sydney.edu.au/study/academic-support/aboriginal-and-torres-strait-islander-support.html
- Student organization (can represent you in academic appeals etc)
  - http://srcusyd.net.au/ or http://www.supra.net.au/
- Please make contact, and get help
- You are not required to tell anyone else about this
- If you are willing to inform the unit coordinator, they may be able to work with other support to reduce the impact on this unit
  - eg provide advice on which tasks are most significant

Advice

- Metacognition
  - Pay attention to the learning outcomes in Canvas
  - Self-check that you are achieving each one
  - Think how each assessment task relates to these
- Time management
  - Watch the due dates
  - Start work early, submit early
- Networking and community-formation
  - Make friends and discuss ideas with them
  - Know your tutor, lecturer, coordinator
  - Keep them informed, especially if you fall behind
    - Don’t wait to get help
- Enjoy the learning!

See you next time!