

Lecturer: Mr. Isaac K. K. To (kkto@csis.hku.hk, CYC 405)

Tutors:

Robin Chen (gechen@csis.hku.hk, CYC 323),
Ben Ng (cpng@csis.hku.hk, HW 520),
George Sun (ydsun@csis.hku.hk, CYC 418)

Textbook: Introduction to Java, Stephen J. Chapman. Prentice Hall.

Homepage: <http://www.csis.hku.hk/~c0911b/>

Course Aim: To teach you how to program the computer, using a particular programming language called java.

CSIS0911B,L01-1

C++

- More language features, so applicable in more situations.
- Directly program the processor, more for system programs.
- Standardized. Many vendors have cooperated to improve C++.
- Will be used in CSIS0912 as lecture examples.

Java

- Less language features, so easier to understand the language.
- The programming environment protects you better from mistakes.
- Completely specified by Sun Microsystems, don't need to learn variants of Java.
- Standard libraries cover more features, e.g. graphics, network.
- CSIS0912 will accept assignments done in Java.

CSIS0911B,L01-2

Workshops

- From time to time, we will organize workshops for you to actually work besides me and the tutors. Attendance is voluntary.
- **Purpose:** you can ask us right away if you are in trouble.
- There will be 3 workshops. The first one will be in week 3, Sept 26/27. The other two is at around week 7 and 13.
- When there is workshop, there is no Thursday lecture.
- Since our class is large, we will split it into 5 sessions for workshop. They will be during 9:30am-12:40pm on Tuesday or Wednesday.
- Please tell us which of these slots are your lecture hours so that you're not available, and specify what lecture you're having. All other reasons will NOT be accepted. Your cooperation is essential for a successful splitting.

CSIS0911B,L01-3

Course assessment: Assignments

- For you to practice by actually write a program, and argue with your friends about concepts of computer.
- Assigned every other Monday, beginning from the third. I.e. 5 assignments in total. You have 14 days to do each of them, but it is best to submit it in 7 days.
- Submitted assignments are guaranteed to be returned in 7 days.
- Won't contribute to final assessment. Feel free to be wrong.
- You are advised to cooperate with your friends. Suggestion: form a different group of two or three people for each of them, and the whole group submit one assignment.
- You aim: to make sure you are capable to do the assignment alone if you're asked to do so, including in quizzes and exams.

CSIS0911B,L01-4

Course assessment: Quizzes and the Exam.

Quizzes

- Based on assignments (should be very easy if you understand the assignment). There will be one quiz for each assignment, i.e. 5 quizzes.
- Around 20 minutes.
- Contribute to 40% of the final assessment. We take best 4 of 5 quizzes, so each quiz contribute 10%.
- At the deadline of assignment, i.e. 14 days after each assignment. That's why it is better to hand in your assignments in 7 days.

Examination

- At December, as usual.
- Contribute 60% of the final assessment.

CSIS0911B,L01-5

What are computers?

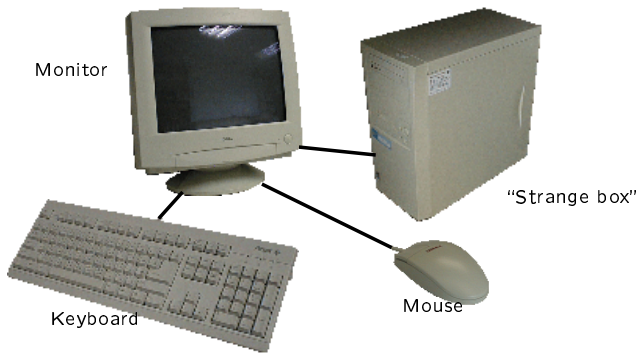
What you already know...

- A machine that contains a keyboard, a monitor, a mouse and a strange box.
- The keyboard allows you to key in things that will appear on the monitor.
- When you move the mouse a "pointer" will also move in the monitor.



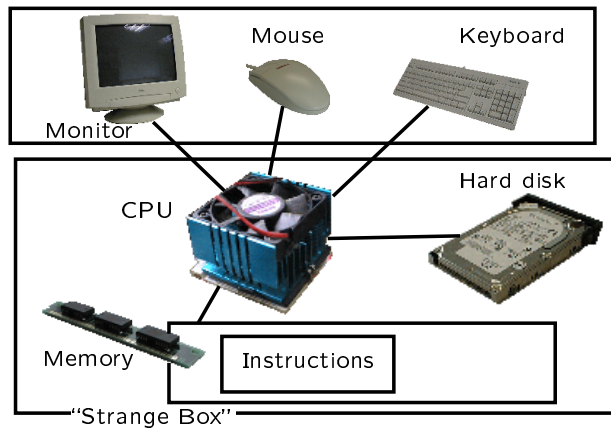
CSIS0911B,L01-6

A wrong view



CSIS0911B,L01-7

The role of the "Strange box"



CSIS0911B,L01-8

Various parts of the computer

- **Memory** (RAM: Random Access Memory): used to store information needed by the computer for its operation. Vanishes once the computer is powered down. Part of it contains *instructions*, which the CPU follows.
- **CPU**: Central Processing Unit. The "brain" of the computer. Only know how to get instructions from memory and perform them. These instructions may read/write the memory, or input from/output to peripheral devices.
- **Peripheral devices**, e.g. monitor, keyboard, mouse, floppy drive, etc. "Dumb"—they only follow the instructions of the CPU.
- **Hard disk** (Secondary memory): store information that need to survive reboot. They can be loaded back to memory after re-booting.

CSIS0911B,L01-9

Scope of the course

Make instructions for the CPU to run: programming.

- How we solve real world problems by programming?
- How to make use of memory and peripheral devices?
- How to use the programs already written by others?
- What is a good programs, and how to write them?

CSIS0911B,L01-10

Course schedule

- Week 1: Computer, Programming, Language and compilation process.
- Week 2: Java basics, mathematical operators.
- Week 3: Selection structures, pseudo code.
- Week 4: Output formating
- Week 5: Looping, top-down design.
- Week 6: Methods.
- Week 7: Arrays and strings.
- Week 8: Recursions, call-by-reference.
- Week 9: Multidimensional arrays.
- Week 10: Class.
- Week 11: Object methods, information hiding.
- Week 12: File I/O. Plotting.
- Week 13: Exceptions. Revision.

CSIS0911B,L01-11