COMP1021
Introduction to Computer Science

Course Details

Fall 2019

Gibson Lam, Alex Lam and Sung Kim

COMP1021 Introduction to Computer Science

- Welcome to COMP1021 Introduction to Computer Science!

- This presentation goes through all the basic information about the course

- This is the official information about the course

Course Detail

Career	Undergraduate	
Units	3.00	
Grading Basis	Graded A+ to F	
Course Components	Laboratory	Required
	Lecture	Required

Exclusion	COMP 1002 (prior to 2013-14), COMP 1004 (prior to 2013-14), COMP 1022P, COMP 1022Q, COMP 2011

Enrollment Information

Typically Offered	Fall, Spring

Description

This course introduces students to the world of Computer Science. Students will experience a range of fun and interesting areas from the world of computing, such as game programming, web programming, user interface design and computer graphics. These will be explored largely by programming in the Python language.

Three Introductory CS Courses

- There are 3 introductory courses run by the CSE department that anyone can join
- Each of them teaches computer programming and related techniques, but there are some differences
- COMP1021 Introduction to Computer Science
  - Teaches the Python programming language, which is a really good language for learning programming
  - Is more ‘broad’ than the other two courses, because it looks at some areas of Computer Science (CS) that the other two courses don’t look at, to get a better appreciation of CS

Three Introductory CS Courses

- COMP1022P Introduction to Computing with Java
  - A lot of computer languages think about things as *objects*
  - This course focusses on teaching the concept of objects and how they interact
  - We will also look at objects in COMP1021, but not as much as this course
- COMP1022Q Introduction to Computing with Excel VBA
  - This course is totally focused on the Microsoft Excel program, which is part of Microsoft Office
  - Students learn how to program Excel, and they learn some non-programming features

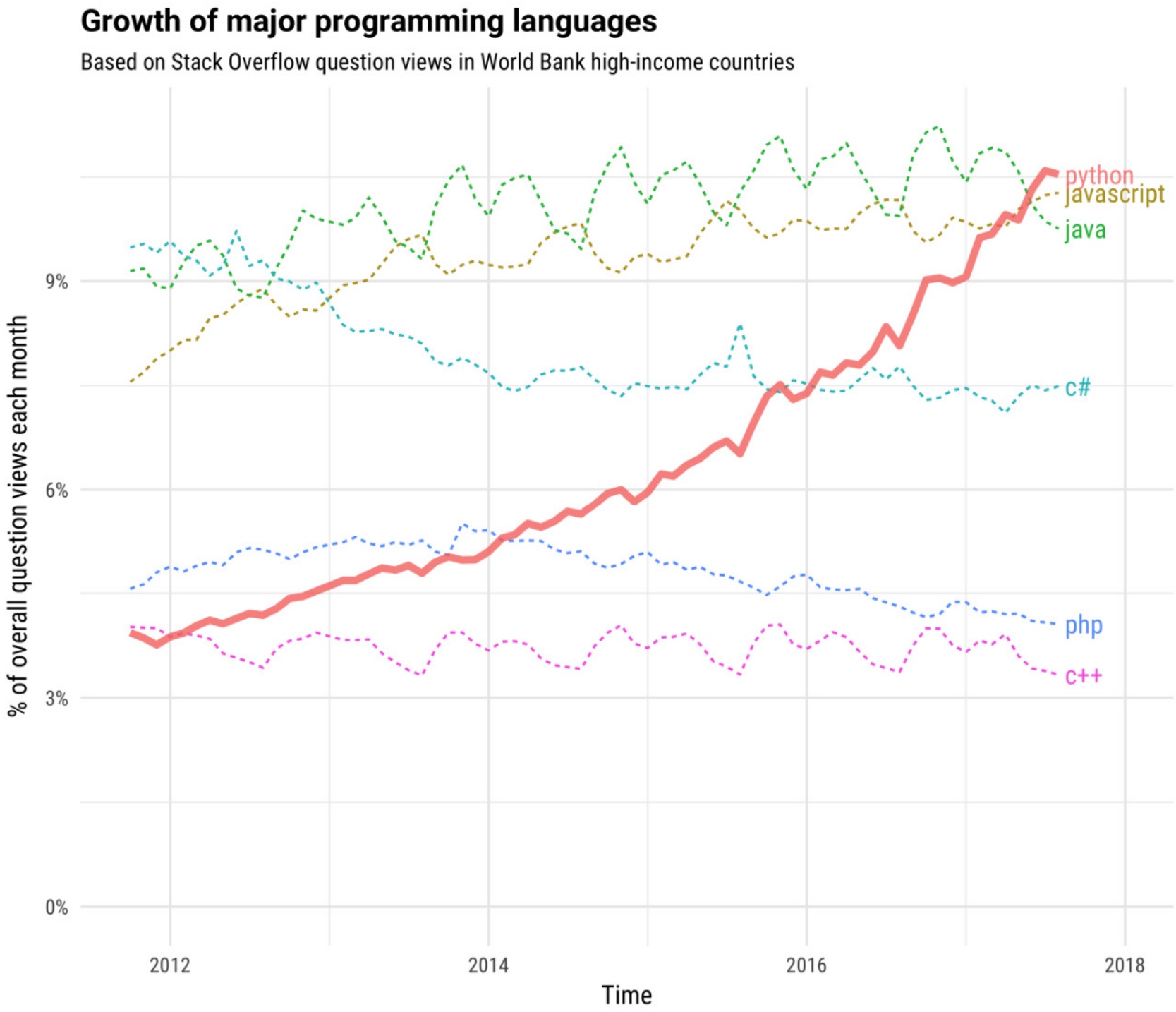
COMP1021 Course Outcomes

- On successful completion of this course, students are expected to be able to:

1. Demonstrate programming skills, with an emphasis on the Python programming language
2. Write programs in interesting areas such as game programming, computer graphics and user interface design

Python is Popular

- Python is now one of the most popular programming languages (see the next 2 slides)
- It's also quite easy to learn and so it is one of the most common languages used for teaching programming (see the slide after the next 2 slides)


Growth of major programming languages
Based on Stack Overflow question views in World Bank high-income countries
% of overall question views each month
9%
6%
3%
0%
2012
2014
2016
2018
Time
python
javascript
java
c#
php
c++

Examples of Companies That Use Python

- Google
- Facebook
- Youtube
- Instagram
- Dropbox
- Spotify
- Quora

- You have probably heard of some of these ‘big name’ companies that use Python

- Netflix
- Reddit
- Industrial Light and Magic

Python is the Most Popular Language to Learn

- The **Popularity of Programming Language Index** is created by analyzing how often language tutorials are searched on Google
- The more a language tutorial is searched, the more popular the language is assumed to be

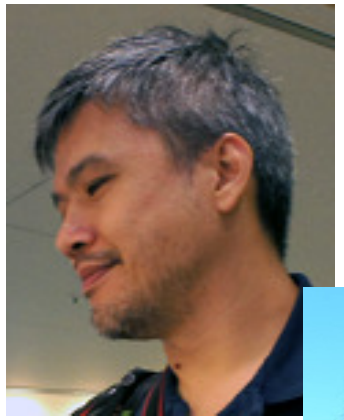
Worldwide, Jan 2019 compared to a year ago:

Rank	Change	Language	Share	Trend
1	↑	Python	25.95 %	+5.2 %
2	↓	Java	21.42 %	-1.3 %
3	↑	Javascript	8.26 %	-0.2 %
4	↑	C#	7.62 %	-0.4 %
5	↓↓	PHP	7.37 %	-1.3 %
6		C/C++	6.31 %	-0.3 %
7		R	4.04 %	-0.2 %
8		Objective-C	3.15 %	-0.8 %
9		Swift	2.56 %	-0.7 %
10		Matlab	2.04 %	-0.3 %

From http://pypl.github.io/PYPL.html

Course Instructors

- Gibson LAM (L1 and L3)
  - Email: gibson@cse.ust.hk
  - Office: room 3553
- Alex LAM (L2 and L6)
  - Email: lamngok@cse.ust.hk
  - Office: room 3548
- Sung KIM (L4 and L5)
  - Email: hunkim@cse.ust.hk
  - Office: room 2527



Lab Teacher

- Main lab teacher
  - Jim WONG Ka Wing
    - Email: jimw@ust.hk
- There will also be other people helping you in the lab
- There will be other people marking your work

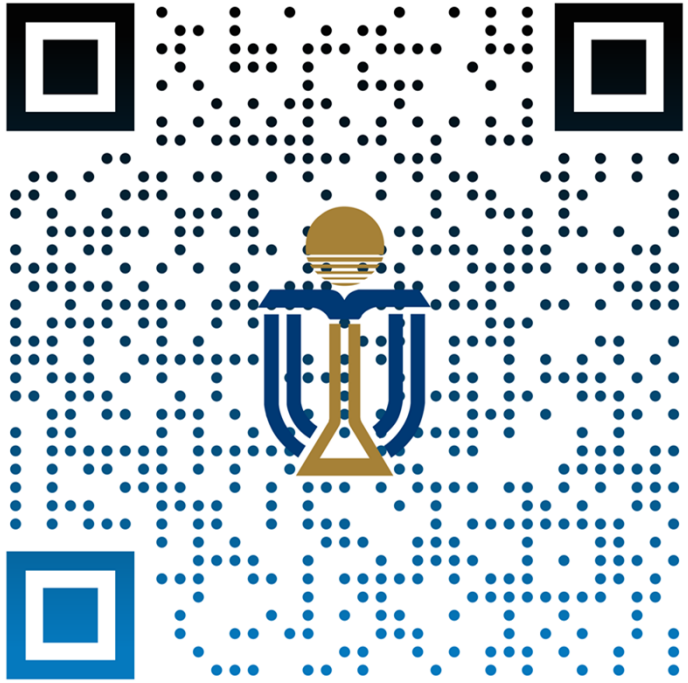
Lab Venues

- CS Labs (room 4221, room 4214 and room 4213)
  - Near lift 19 in the Computer Science lab area
  - You could use http://pathadvisor.ust.hk to find them:

Course Web Site

- All course information is presented via the web at

  `https://course.cse.ust.hk/comp1021/`



- Or the short one: `http://c1021.fun`

Using the Course Web Site

- Within Campus
  - There won't be any need to log in to the web site
- Outside Campus
  - You will need to use your CSD account to log in to the web site
  - You have to activate your CSD account before you can use it
  - Please refer to slide 31 for details about how to activate your CSD account

Starting the Course

COMP1021 Introduction to Computer Science

Fall 2019

Book website
Academic Calendar
Jump to week:
1

Latest Information

- The first lab session will be taught on **9-13 Sep**; you don't have to go to the lab rooms until your first lab session
- Please go here to register your CSD account (you may have to wait a day or two after joining the course before doing this)
- The first two lectures' notes will be handed out; starting from week 2, please print the notes if you want to

Week Number	First Lecture [schedule]	Second Lecture [schedule]	Lab Session [schedule]
1 **September** S M T W T F S 1 2 3 4 5 6 7 L1: 2 Sep & 4 Sep L2: 4 Sep & 6 Sep L3: 4 Sep & 6 Sep L4: 3 Sep & 5 Sep L5: 3 Sep & 5 Sep L6: 3 Sep & 5 Sep **Labs:** No labs	**Course Details** [B&W, colour] [Google Docs] Please go here to register your CSD account (you may have to wait a day or two after joining the course before doing this) The midterm exam will tentatively take place in **week 7** Course outcomes here **Getting Started with Python** [B&W, colour] [Google Docs] Book chapter 1 Different ways to run Python here The ITSC Virtual Barn overview, installation guide, user guide These notes will be handed out	**Beginning to Program Python** [B&W, colour] [Google Docs] Book chapter 3 Examples used in the notes here **Introduction to Turtle Graphics** [B&W, colour] [Google Docs] Book chapter 2 Examples used in the notes here These notes will be handed out	There is no lab in the first week of the semester The first lab will take place **starting in week 2, i.e. 9-13 Sep** You don't have to go to the lab room until your first lab session Before you go to the room, click here to register your CSD account; see the last few slides of the Course Details notes here

- The first lab will be taught starting from Monday 9 Sep

Course Notes and Lab Material

- The notes will be released on the web site before the lecture, so you have time to download (and print them if you like) and bring them to class
- For the first 2 lectures, the notes will be handed out
- The labs will also be released before they are taught, so you can look at them before you go
- You could even do the lab by yourself without going to the lab, if you think you are able to

Course Notes

- All course notes will be available in different versions

Course Details

[B&W, colour] [Google Docs]

  - **B&W** black and white version pdf, better for printing
  - **Colour** version pdf, better for reviewing on a computer
  - **Google Docs** version, better for reviewing and commenting online
- You'll be able to access the notes on the web site before the lecture begins

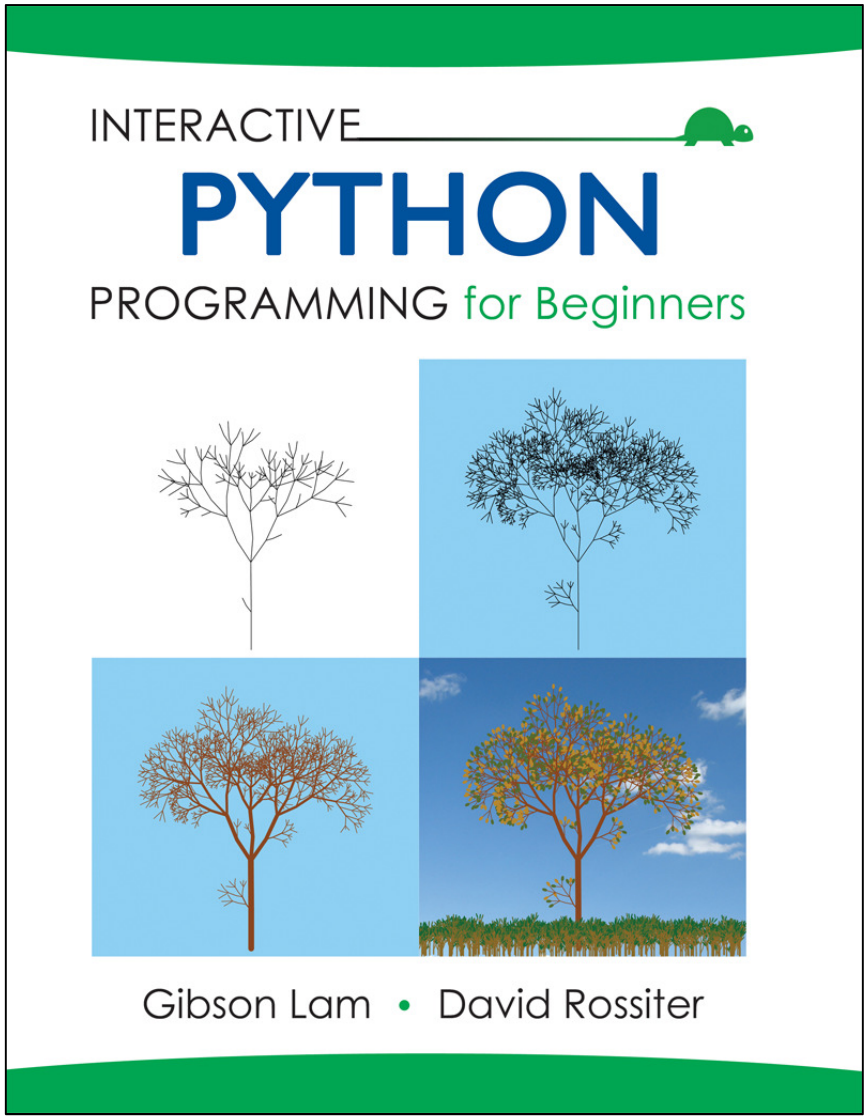
Course Book

- The book for this course is shown on the next slide
- This book is written specially for this course
- You can get the book from the HKUST bookstore
- Both the midterm and final exam will be open book/open notes, so you can take the book into the class/exam room

Interactive Python Programming for Beginners

- Written by Gibson Lam and David Rossiter
- About 250 pages
- Student price is roughly $240

(if you show your student card)



The Midterm Exam

- COMP1021 teaches you programming
- Programming is all about thinking logically
- Sometimes a few students take time to get used to this way of thinking and don't do so well in the midterm – so how can we help those students?
- Answer: for every student, we will assess you in 2 different ways and use the best calculation for you
- This is an automatic process, you don't need to do anything

- **Lectures**
  - Lectures are typically used to give a solid introduction to the topics, with demonstrations
  - Then the labs and assignments are used for you to explore the subject in depth
- **Labs**
  - We will have around 8 taught lab sessions
  - It is very important that you do the lab work, otherwise it will be impossible to do the assignment work!
- **Assignments** $2 \times 15\% = \mathbf{30\%}$
  - There will be two assignments
- **Midterm exam** **25% / 5%**
  - This exam will be an open book exam in week 7 (more details will be released later)
- **Final exam** **45% / 65%**
  - This will be a 2.5 hour, open book, open note exam

At the End of Semester

- The first way we assess you is this *(more midterm %)*: **Midterm 25%**, **Assignments 30%**, **Final exam 45%**

- The second way we assess you is this *(less midterm %)*: **Midterm 5%**, **Assignments 30%**, **Final exam 65%**

- We will automatically choose the highest mark of these two calculations

Bonus Marks

- In the lectures each instructor will try to give bonus marks to students for different kinds of class activities
- We will do things differently but we will make sure the bonus marks awarded in different lecture sections are roughly the same
- These bonus marks are simply added on top of the other marks
- The cap of the bonus marks will be 3% of the course total

Conduct During Lessons

- When you come to the lectures or labs please don't disturb anyone!
- So make sure your phone is off before you come in the room, and have any discussions with your friends outside the room
- You are welcome to ask us questions during the lecture BUT sometimes we are so involved in teaching that we miss people trying to get our attention. Sorry about that!

Taking Attendance

- We won't take attendance during the lectures or labs
- If you don't go to the lectures or labs, you will quickly become 'lost' and won't understand what's happening – but that's your choice!

Taking Attendance in Labs

- We usually won't take attendance during the labs **BUT** if people don't go to their registered lab and go to another one instead, that causes big problems
- Maybe some students in the 6pm lab want to go home early, so they go to the 4pm lab…
- The 4pm lab then has too many students and not enough computers, so some of the students who are really registered in that lab can't do anything
- If we encounter this situation, we will do random checks of all students in the over-crowded lab session, and give penalties to students who shouldn't be there

Cheating Policy

- If you get caught cheating, both you and the other person get zero for that work, and your end-of-semester grade is lowered one sub-grade i.e. a C grade becomes C-
- It doesn't matter if you only copied a little, the penalty is the same for both the source and the copier
- Copying anything from a previous semester is also cheating, make sure you only use files from this semester!

Some Interesting Things We Have Heard

- I lent my USB drive to others and forgot my work was on it!
- I lent my work to others only for their reference!
- I submitted someone else's work by mistake!
- My friend prepared a template which I used to do the work, and I forgot to remove his name!
- And so on… all these kinds of things get zero!

Things That Are OK to Do

- Discussing the work with others is fine; that's different from direct copying
- Another thing you might find helpful is to search the Internet
- There's lots of tutorials about Python on the web, and you are welcome to learn from them
- However, make sure the material is talking about Python 3, not an earlier version of Python

Your Computer Accounts

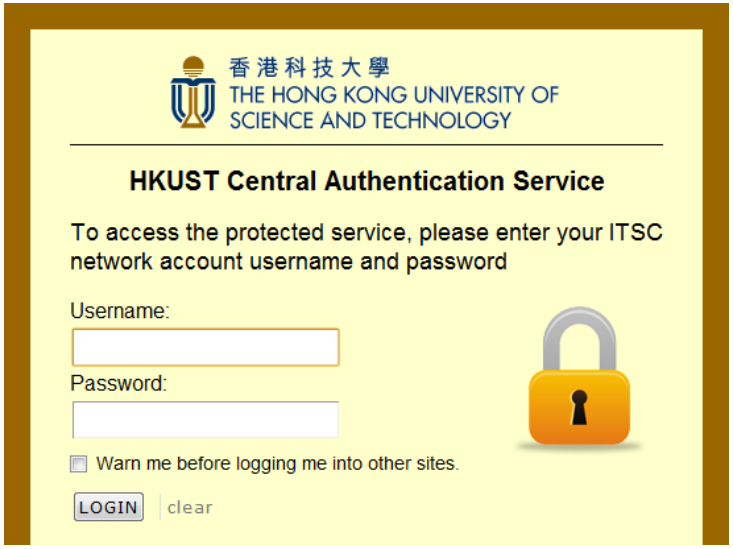
- You have two computer accounts:
- Your ITSC account
  - This is given to you when you join UST
  - This is your main email account at UST
- Your CSD account
  - This is given to you when you first join a COMP course
- All the COMP1021 labs are taught in the Computer Science Department (CSD) lab rooms
- Before you can work in those lab rooms, you need to enable your CSD account

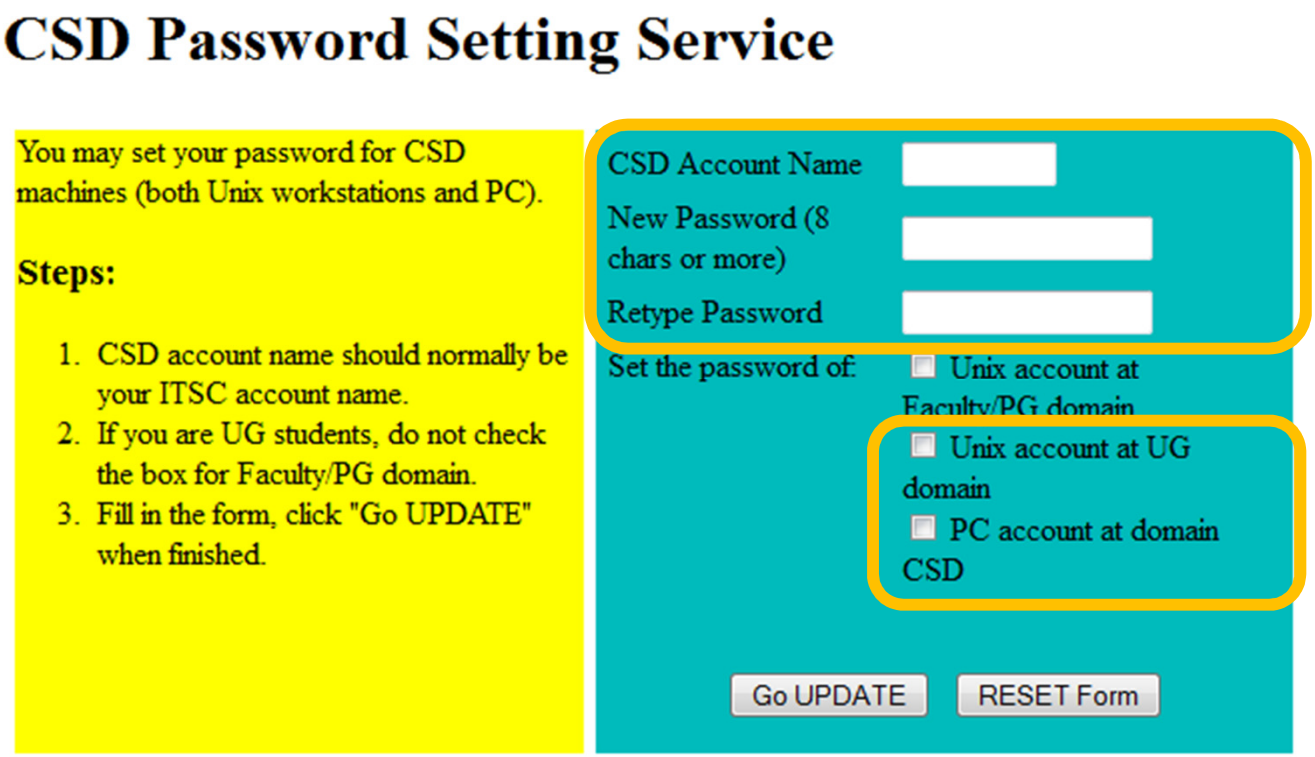
How to Enable Your CSD Account

- Don't wait for the lab time to do this
- Go to a computer in one of the barns at UST
- Run a browser, go to:

```
https://password.cse.ust.hk:8443/pass.html
```

- Log on using your ITSC details





- Tick the bottom two check boxes ("Unix account at UG domain" and "PC account at domain CSD")
- Enter your ITSC account name and password (your CSD account name is the same as your ITSC account name)
- Finally, click 'Go UPDATE'

- You will see something like this:

- You may need to wait a few minutes before your CSD account is activated
- Then you can access any CSD computers e.g. the computers you will use in CS labs
- Enable your account before the first lab begins!