CSCI213/813/MCS9213

Java Programming and Applications

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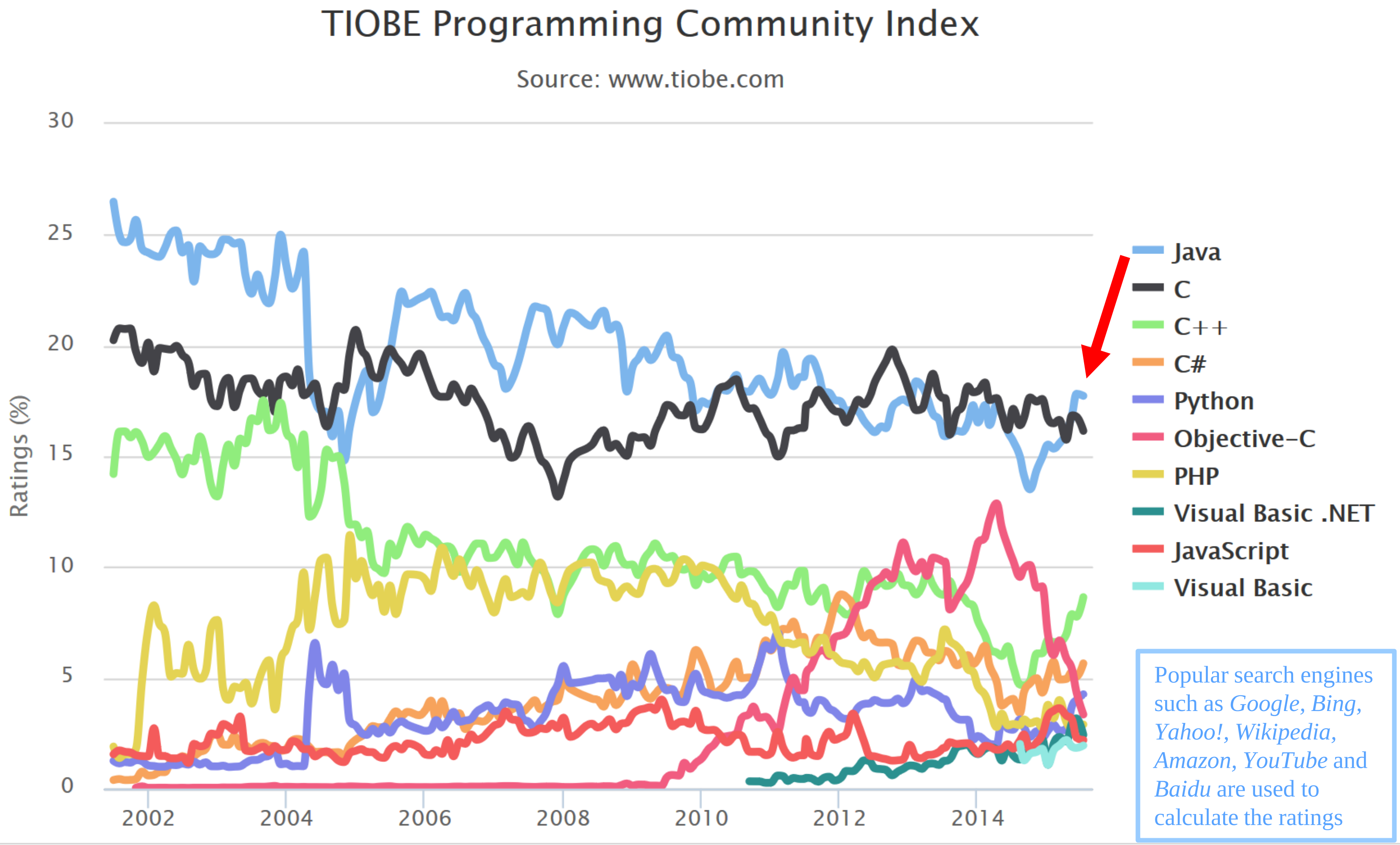
TIOBE Programming Community Index

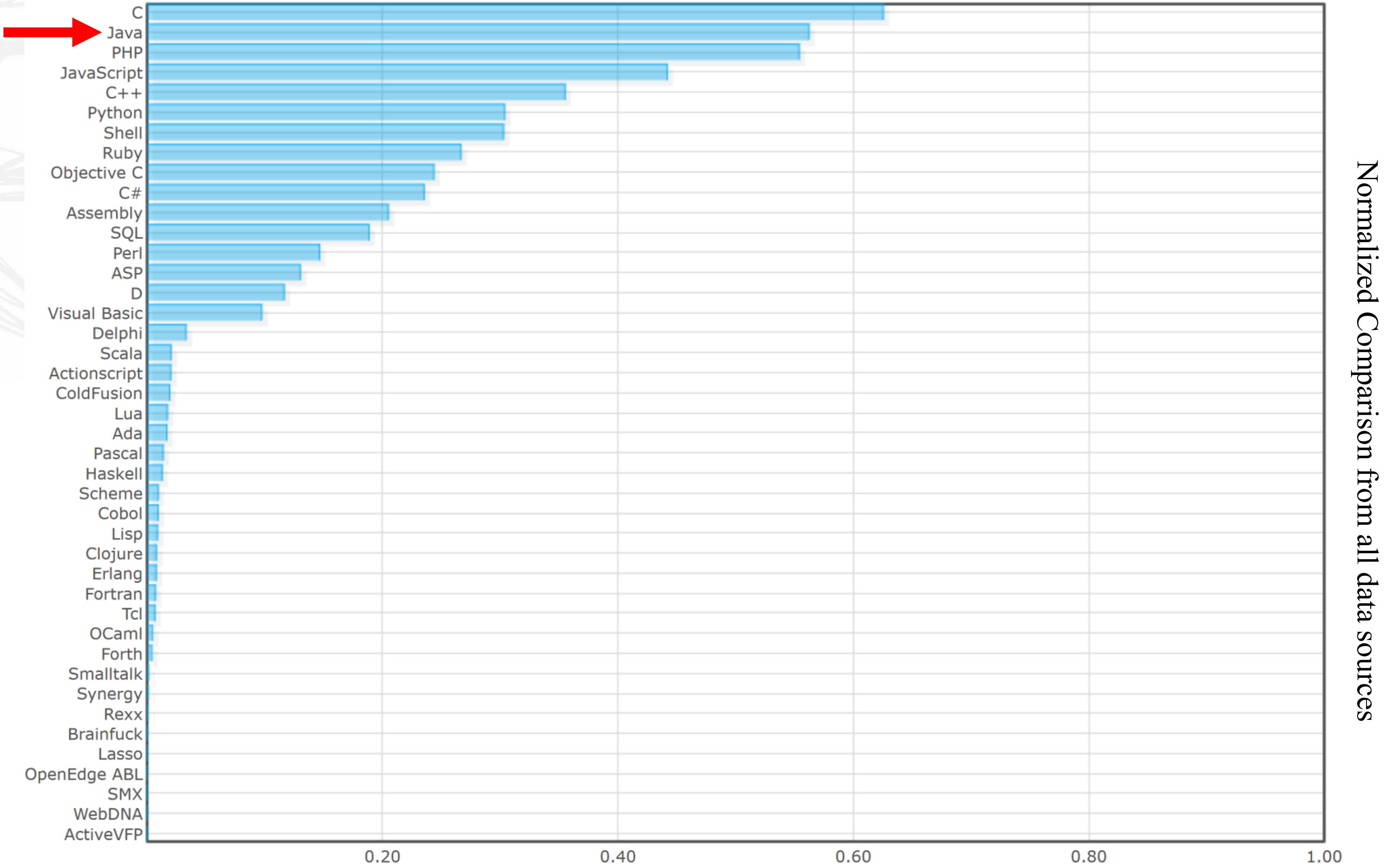
Long term trends for top 10 programming languages



Popular search engines such as *Google*, *Bing*, *Yahoo!*, *Wikipedia*, *Amazon*, *YouTube* and *Baidu* are used to calculate the ratings

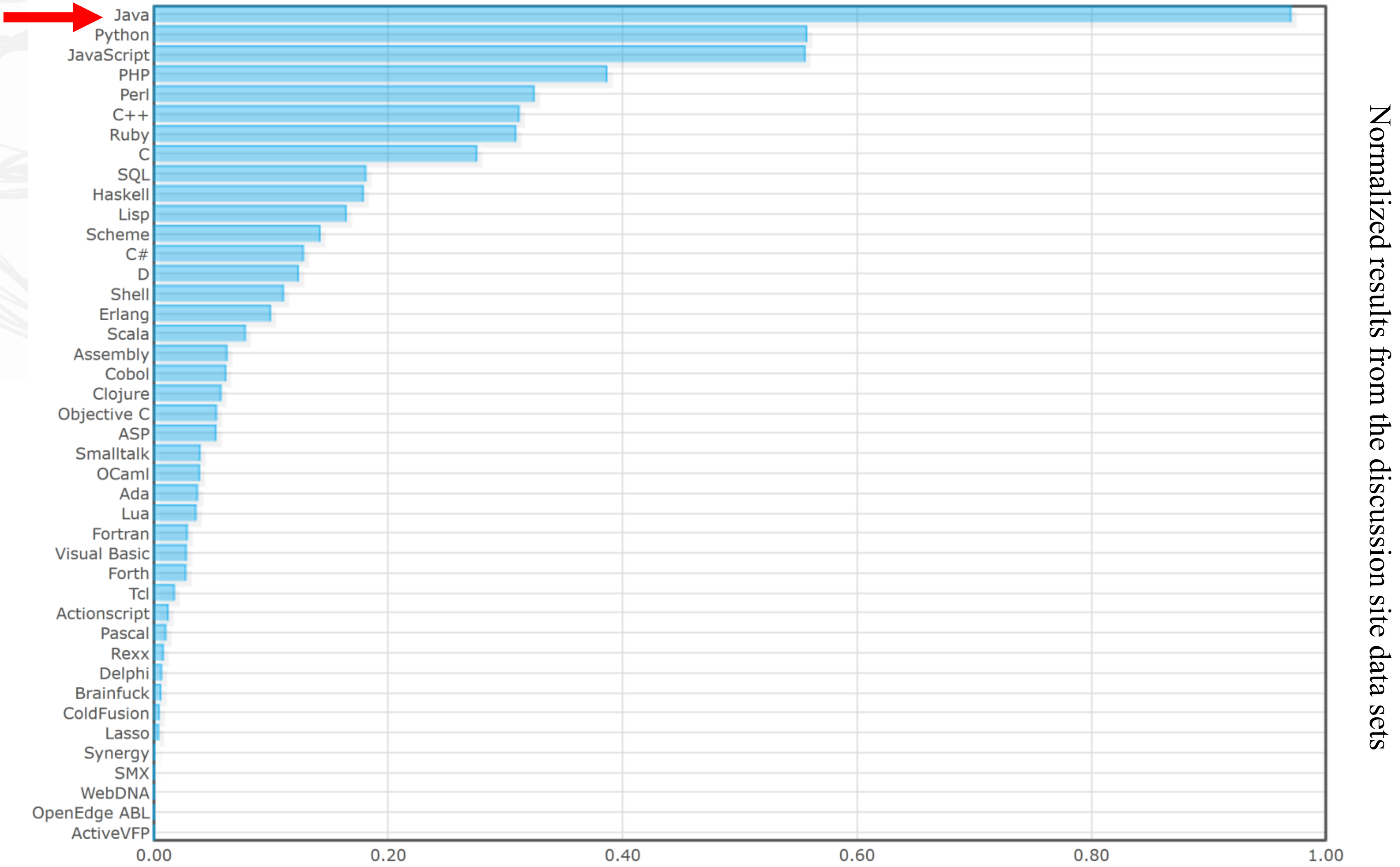
Viewed in July 2015 at www.tiobe.com

Programming Language Popularity



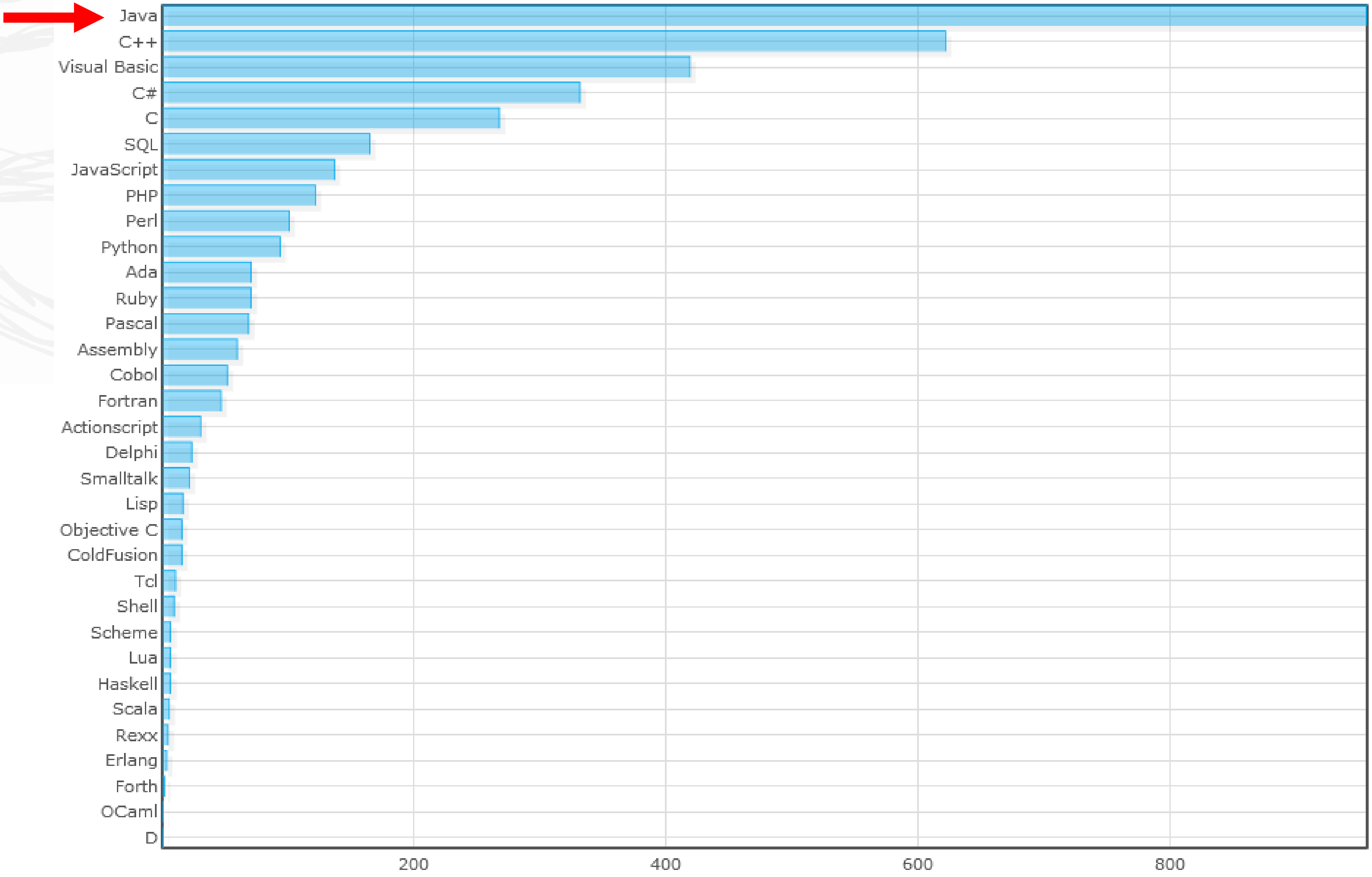
Last data update: Oct 25 2013 at www.langpop.com

Programming Language Popularity



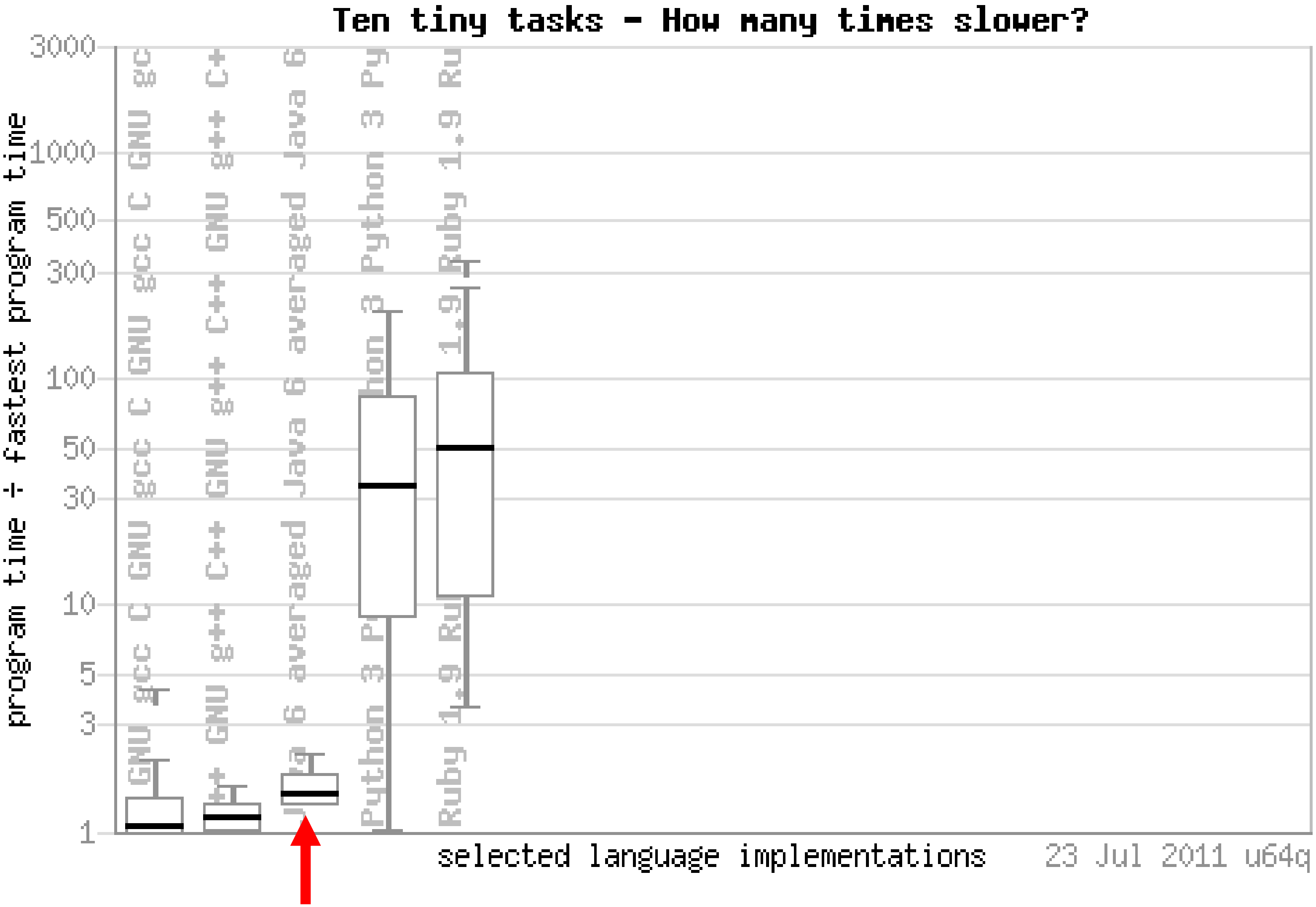
Last data update: Oct 25 2013 at www.langpop.com

Language Book Statistics



Available Books from Powell's Books viewed in July 2013 at www.langpop.com

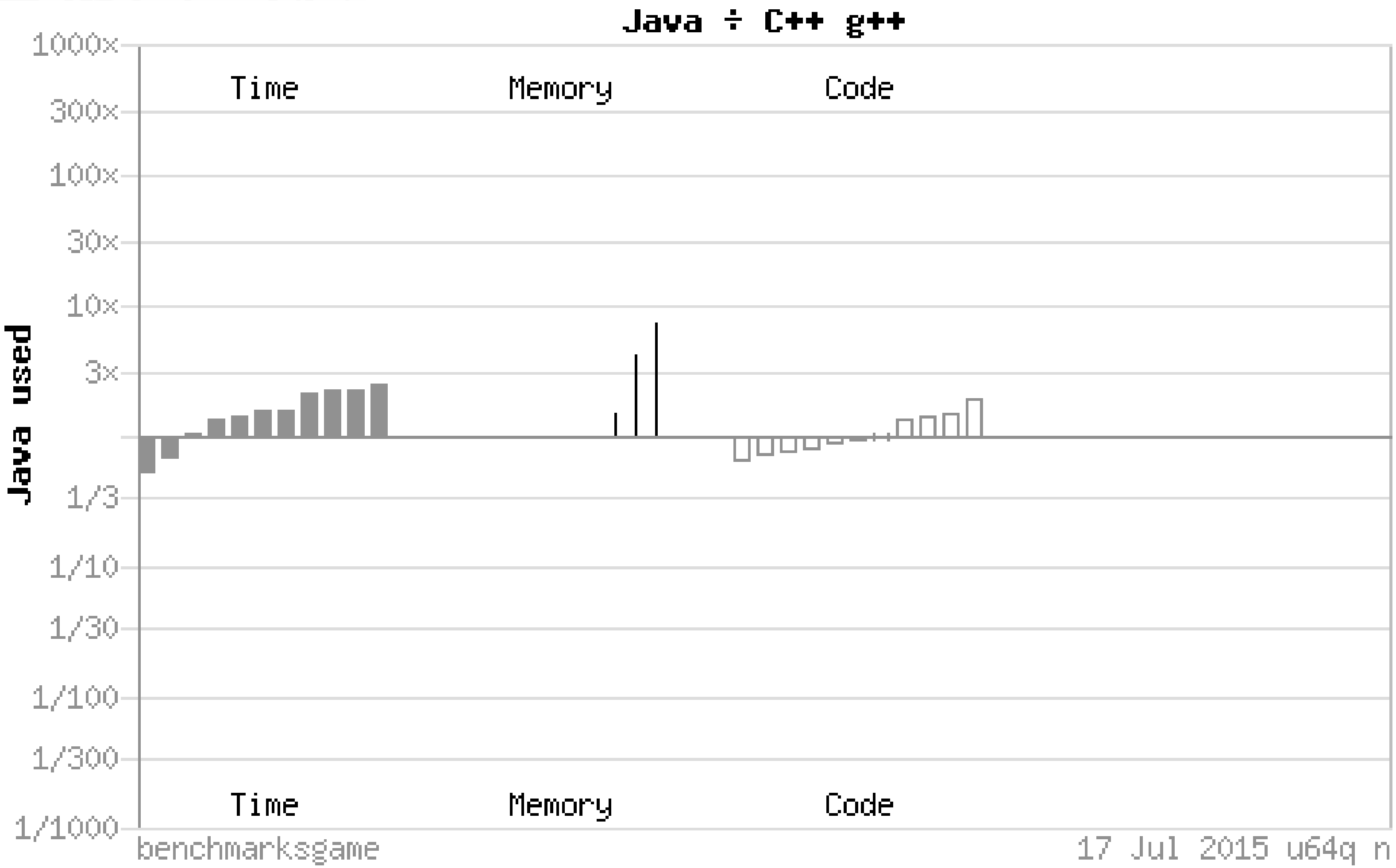
Computer Language Benchmarks Game



Viewed in July 2013 at benchmarksgame.alioth.debian.org

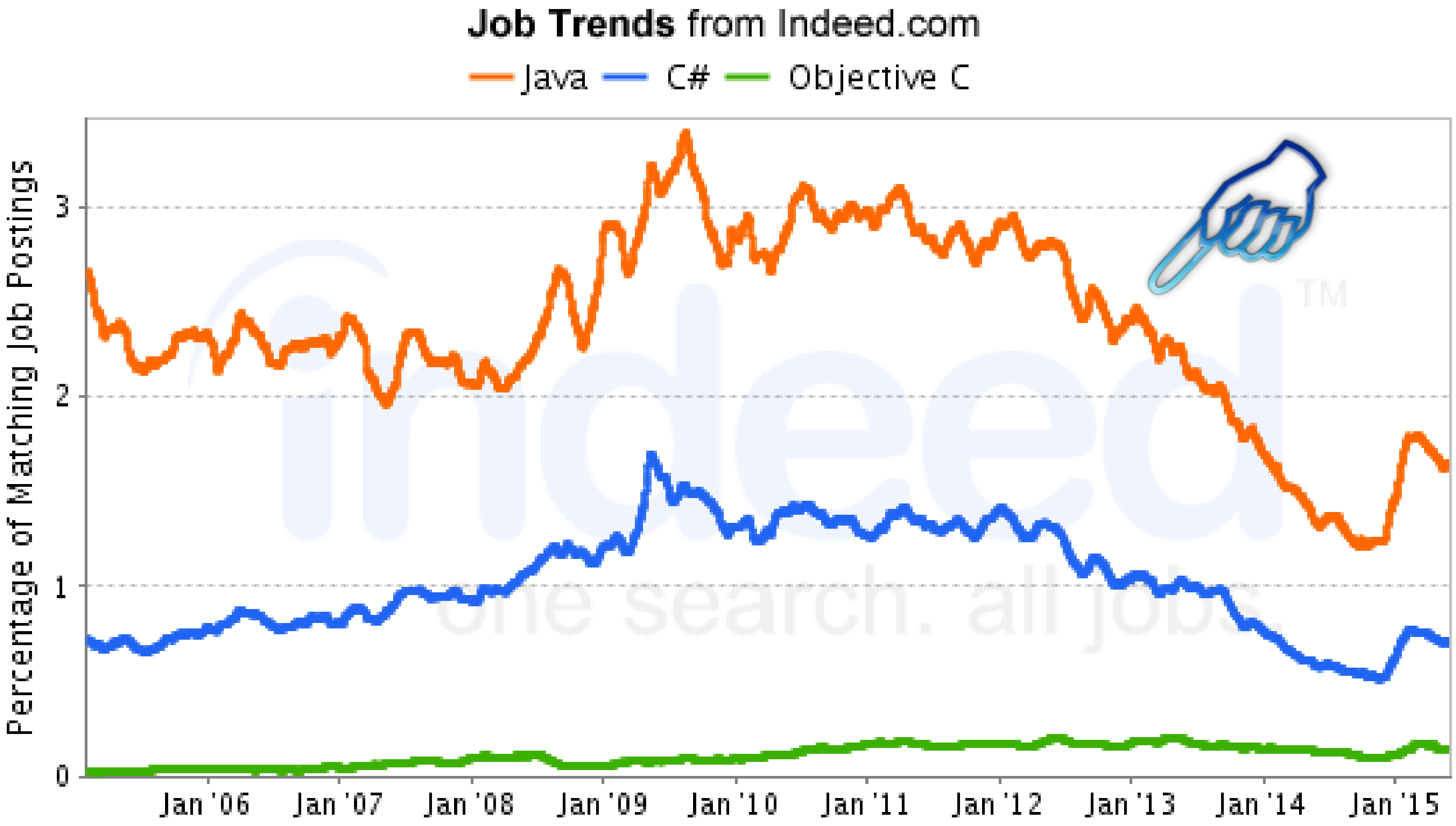
"Lies, damned lies, and statistics"

Computer Language Benchmarks Game



Viewed in July 2015 at benchmarksgame.alioth.debian.org

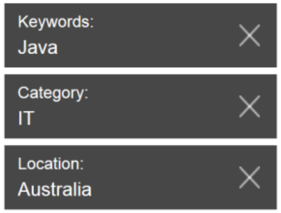
Java Job Trends



Viewed in July 2015 at www.indeed.com

Australian Java Jobs

Keywords	2013 27/7/2013 Job Title: Developer		2014 27/7/2014 Category: IT		2015 27/7/2015 Category: IT	
Java	80	47.6%	60	56.1%	355	66.6%
C#	76	45.2%	34	31.8%	158	29.6%
Objective C	12	7.1%	13	12.1%	20	3.8%



Keywords: Java ×

Category: IT ×

Location: Australia ×

Job search at CareerOne.com.au

Job search in July 2015 at www.careerone.com.au

Java Programming …

- **Introduction to Java**
  - Widely used in industry
  - More productive program development than C++
  - Our coverage
    - J2SE (Fundamentals and some Advanced Features)
      - Polymorphism/Exception Handling/Collections
      - Database/Multithreading/networking
      - Event-driven programming/GUI
    - J2ME (no longer popular, reduced coverage)
    - J2EE

      NOT covering J2EE extensions that support some Internet specific technologies (these touched on in CSCI399 Server Technology)

Prerequisites

- Actual requirements:
  - You can program in C++ and are prepared to make the (easy) transfer to Java
    - *Java programming is much like OO style C++ except that you don't write so much of the code - you get almost everything pre-built from Java's class libraries (packages) containing 3000 classes.*
  - You are somewhat familiar with classes and objects
  - You can design a program by creating a "world of interacting objects"

- CSCI213:
  - Learn *Java programming* more than *programming in Java*
    - *Learn Java Technology*

3 Approaches to Learn Java

- GUI first
- Object first
- Fundamental first

What is the approach used in this subject?

All Roads Lead to Rome

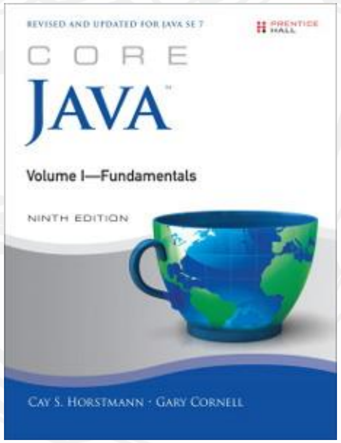
- Important to reflect on your own approaches to learn
  - All people are different

- University is just to facilitate your learning

What Books to Look for

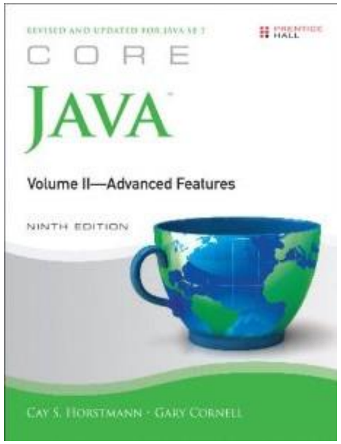
- Many easy introductory texts
  - Most are introductions to programming using Java (many Universities use Java as first programming language, very few still use C++)
  - You will need an introduction for someone who knows programming already.
  - Probably find the material for free on the web!

References (Good Books)


REVISED AND UPDATED FOR JAVA SE 7
PRENTICE HALL
CORE
JAVA
Volume I—Fundamentals
NINTH EDITION
CAY S. HORSTMANN · GARY CORNELL

Core Java, Volume I — Fundamentals (9th ed)

C.S. Horstmann and G. Cornell, Prentice Hall, 2012


REVISED AND UPDATED FOR JAVA SE 7
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Volume II—Advanced Features
NINTH EDITION
CAY S. HORSTMANN · GARY CORNELL

Core Java, Volume II — Advanced Features (9th ed)

C.S. Horstmann and G. Cornell, Prentice Hall, 2013

- *Targeting "serious programmers who want to put Java to work on real projects"* - *The authors of Core Java*
- *Recommended books by Oracle*

Buying Books?

- Horstmann & Cornell:
  - Reasonably good, two volumes cover material in CSCI213 and more specialized things (like Java Native Interface – working with C)
  - Best seller at Amazon
  - Reference and exposition of Java for those who understand programming
  - Maybe not your style
- Others
  - A host of books (library lists 1,424 books on Java in its holdings!)
  - Shop around for one with a style you like

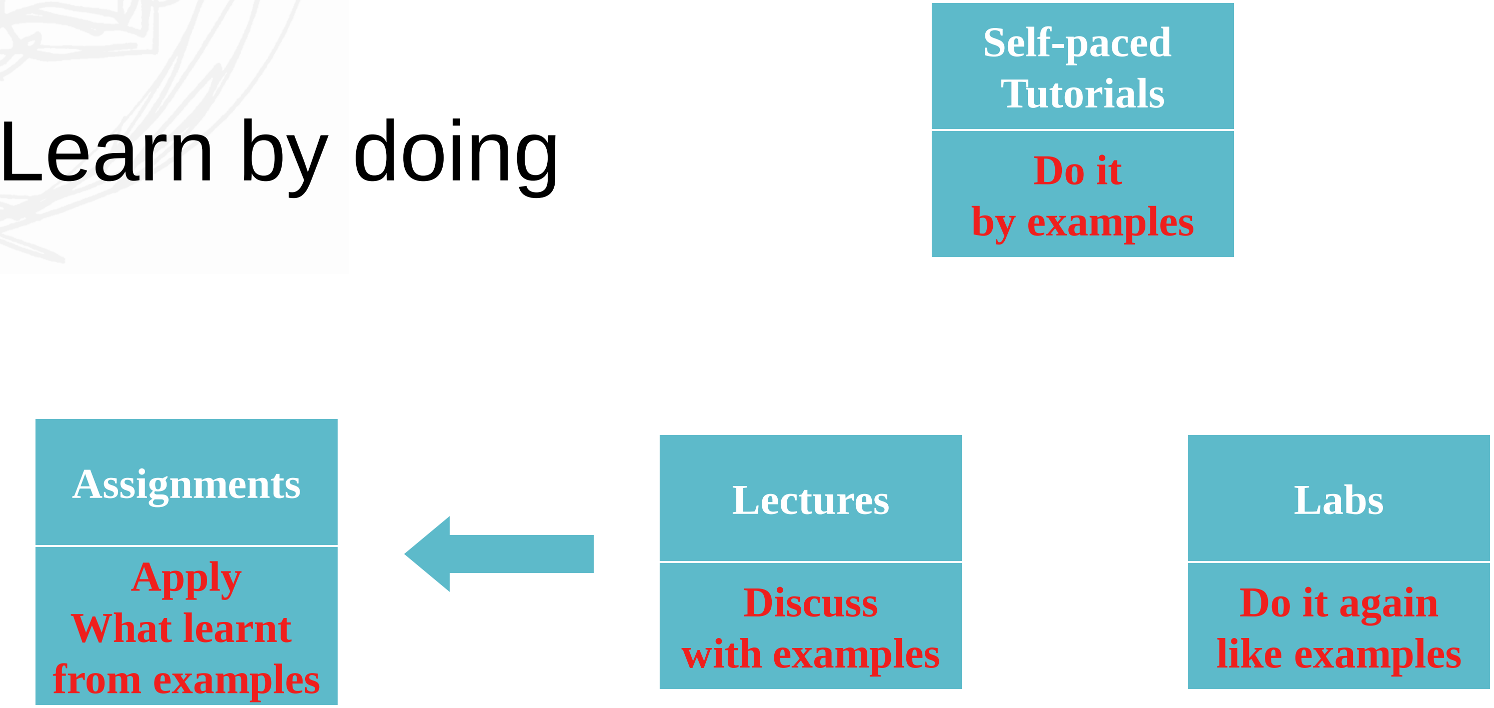
Official Java Web Resources

- Official websites:
  - Now owned by Oracle
  - General Java Users: www.java.com
  - You as Developer: Oracle Technology Network: http://www.oracle.com/technetwork/java
- New to Java Programming Center:
  - Found at Oracle Technology Center
- Java Developer Tutorials:

  http://www.oracle.com/technetwork/java/index-jsp-135888.html
  - Java Tutorials
  - Swing Tutorials
- Java Documentation
  - SE 7 : http://download.oracle.com/javase/7/docs/
  - SE 8 : http://download.oracle.com/javase/8/docs/

Philosophy

- Teach by examples
- Learn by doing



Self-paced Tutorials

Do it by examples

Assignments

Apply What learnt from examples

Lectures

Discuss with examples

Labs

Do it again like examples

Assignments

- Plan your time, no excuses!
- Electronic submission:
  - **`turnin` program**
    - **Detail will be in the assignment papers**

Assignments

- If the assignment cannot be compiled, 50% off the marks.
- Plagiarism will not be tolerated. Zero mark would be given to plagiarised work.

Assignment Marks

- Typically:
  - Marks to appear on SOLS
  - Marking result file with marker's comments on your submission sent by email
  - Marker’s name and e-mail address should appear at the end of the marking result file
    - Contact marker (by e-mail or in labs) for initial queries and disputes
    - Issues to be raised within a week after the release of marking results
    - Only contact the lecturer if issues are unable to resolve with the marker (The marker and student should both report the case to the lecturer)

Labs

You must participate in the Lab with satisfactory results and submit your work to gain the **marks** for *Laboratory Exercises*

Tutors and Markers

- Talk to tutors in the labs
  - Usually they will not have any specific presentation to make, they are there to help with Java programming issues
  - Can talk to any tutor

- Assignments allocated to markers at random, your tutor in the lab may not necessarily mark your assignments

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