

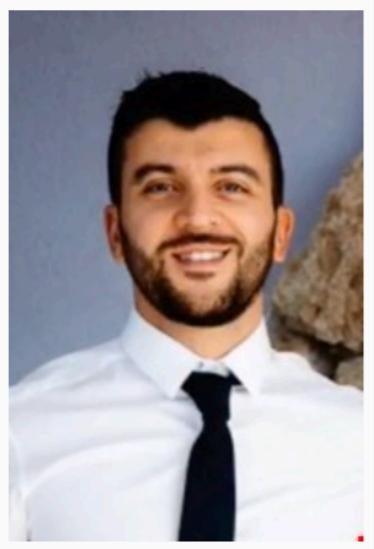


Brunel
University
London

Software Development and Management CS2002

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Welcome
back!



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Computer Science

College of Engineering, Design and Physical
Sciences

BSEL Group

<http://www.brunel-sweng.org>

Other teaching staff:

- Dr Rumen Neykova
- Dr Sarath Dantu

Programme

Terms 1 & 2

Lectures: Mondays

- Weeks 1-6, 9-10, 16-20, 25: 10 am - 11 am, Online

Programme (2)

Labs: Tuesdays

-Weeks: 2-6, 9-10, 16-21, 23-25

-Venue: Online at the moment (Tower A045 - when allowed)

Assessment

Task 1 (Coursework):

- A technical design report (pdf and vpp files, obtained from Visual-Paradigm) which details the required concepts, analysis and understandings of UML diagrams given a context.
- Submission deadline date: **26 November 2020 at 11am**
- *50% of the assessment weighting*

Assessment (2)

Task 2 (Examination):

- End-of-year 2-hour examination
- Examination date: sometime in May 2021
- 50% of the assessment weighting

Learning Outcomes

The module will provide an introduction to software engineering

It will follow the development process from requirements and design through to testing and evolution using recognised methodologies, tools and technologies.

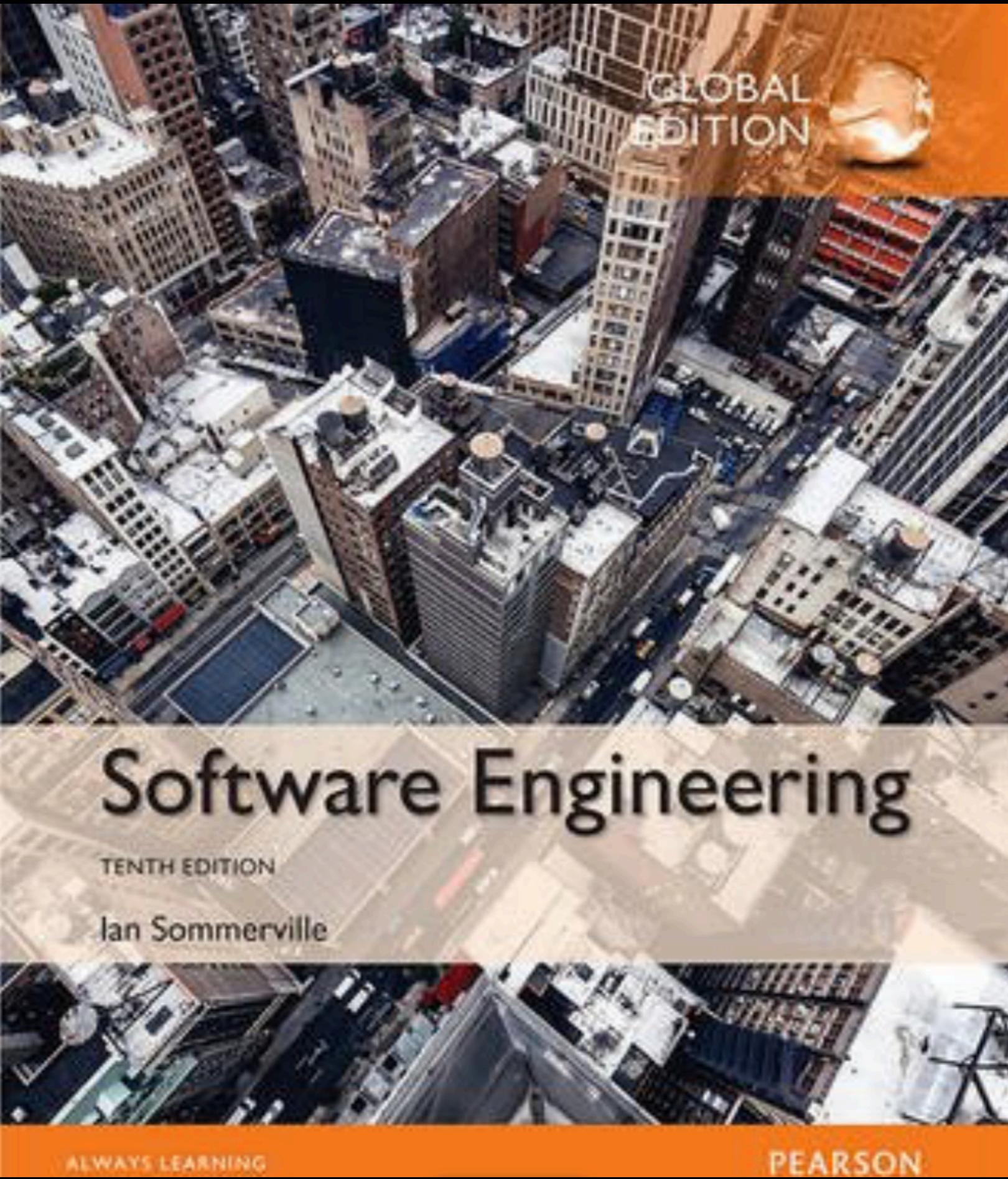
Learning Outcomes

Three specific learning outcomes:

1 - Identify, explain, and evaluate the key concepts in software engineering

2- Analyse a real world software system using appropriate methodologies

3- Translate design models into desirable software artefacts



What is Software Engineering?

L
MTOA - S.
CRIA - CI
MTIA - X1
MT2A - X2
CRIA - BI
CPIA - BO
CPJA - PU
TYIA - TY
CRIA - SI
LPJA - LO
MT2AF - GO



Margaret Hamilton (scientist)

From Wikipedia, the free encyclopedia

For other people named Margaret Hamilton, see [Margaret Hamilton \(disambiguation\)](#).

Margaret Heafield Hamilton (born *Heafield* on August 17, 1936)^[2] is an American computer scientist, systems engineer, and business owner. She was Director of the Software Engineering Division^[3] of the [MIT Instrumentation Laboratory](#), which developed on-board flight software for the [Apollo space program](#).^[4] In 1986, she became the founder and CEO of Hamilton Technologies, Inc., in [Cambridge, Massachusetts](#). The company was developed around the [Universal Systems Language](#) based on her paradigm of Development Before the Fact (DBTF) for systems and software design.^[5]

Hamilton has published over 130 papers, proceedings, and reports about the 60 projects and six major programs in which she has been involved.

On November 22, 2016, she was awarded the [Presidential Medal of Freedom](#) by U.S. President [Barack Obama](#) for her work leading the development of on-board flight software for NASA's Apollo Moon missions.^{[1][6]}

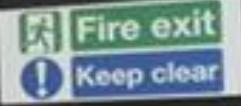
Software Engineering:
is an engineering discipline
that is concerned with all
aspects of software
production from initial
conception to operation
and maintenance

A problem has been detected with your computer.

Attempt to reset the computer.

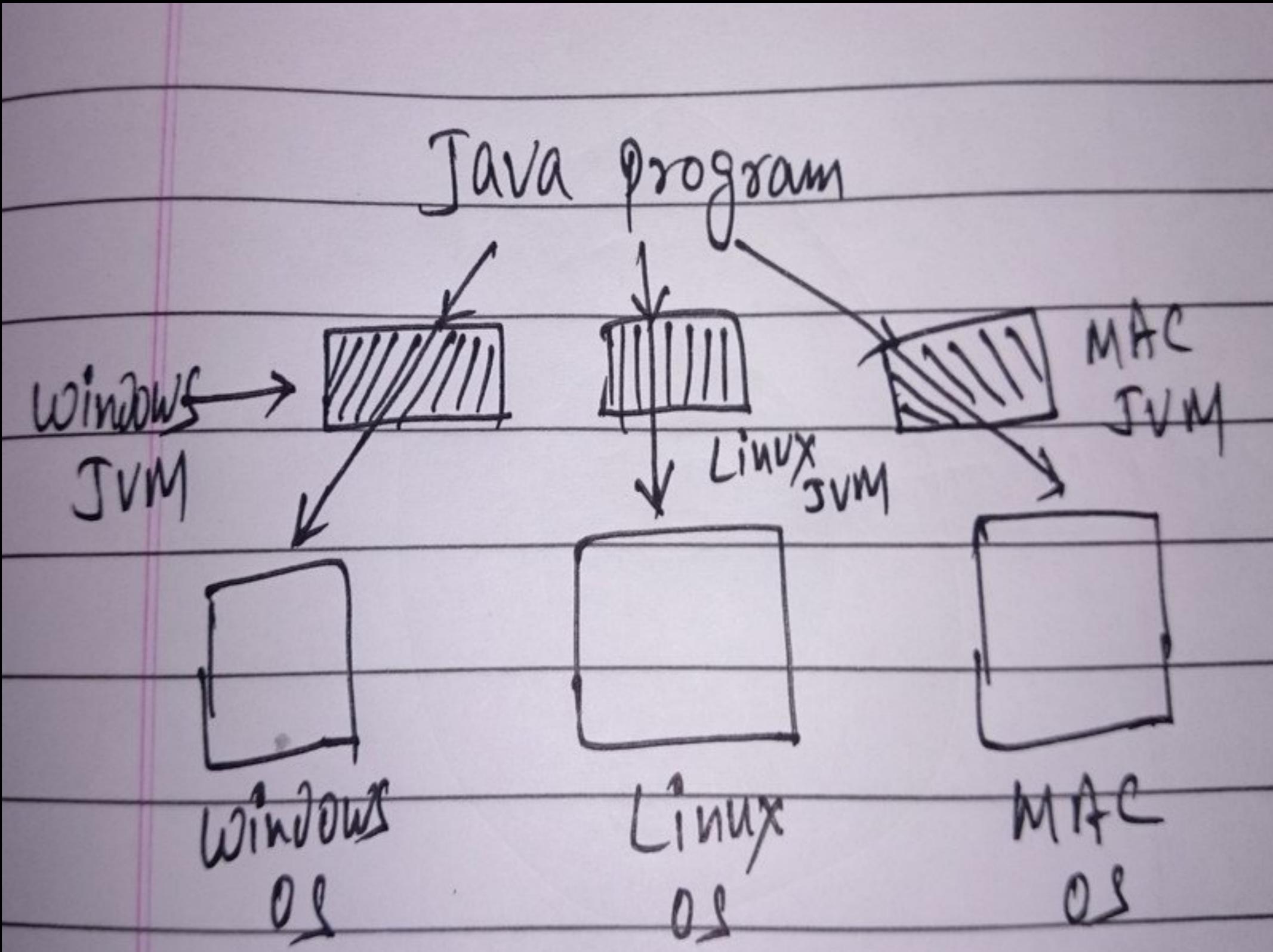
If this is the first time this has happened, restart your computer and follow these steps:

Check to make sure a



Keep clear

Java works everywhere



Traditional Programming Paradigm

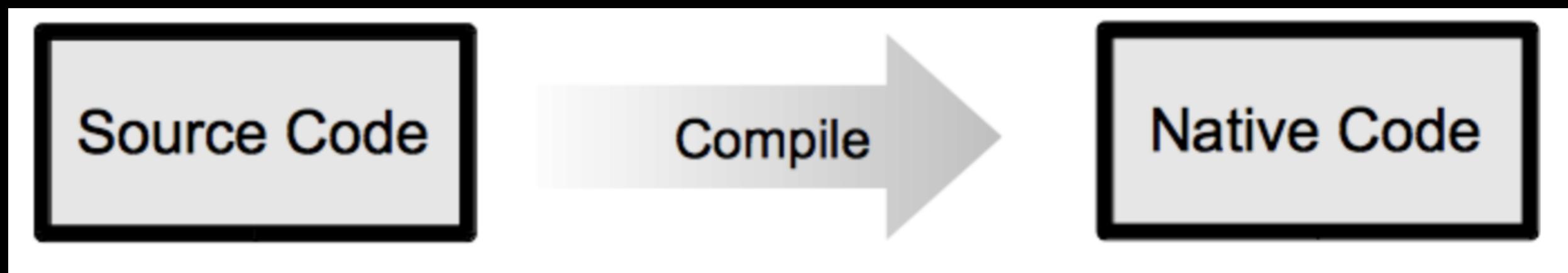


Image from Java™ 7: A Comprehensive Tutorial

Java programming model

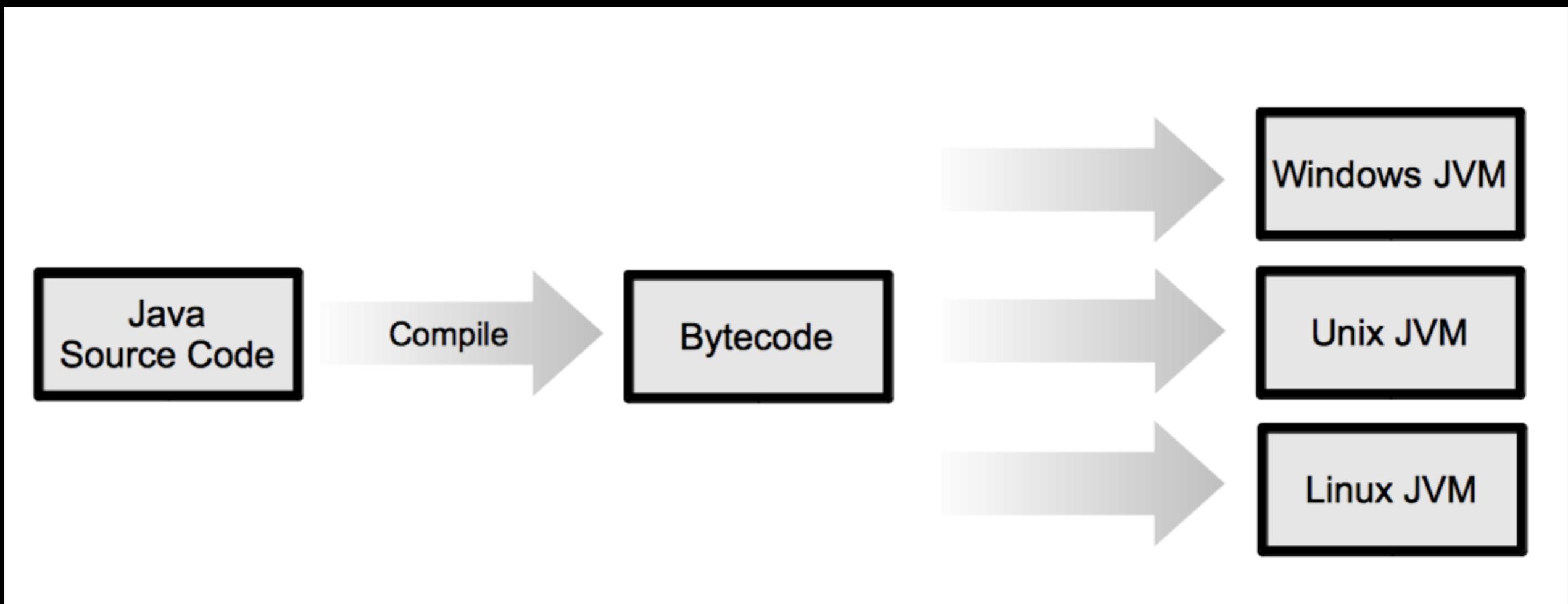


Image from Java™ 7: A Comprehensive Tutorial

Object Oriented Programming

3 principles

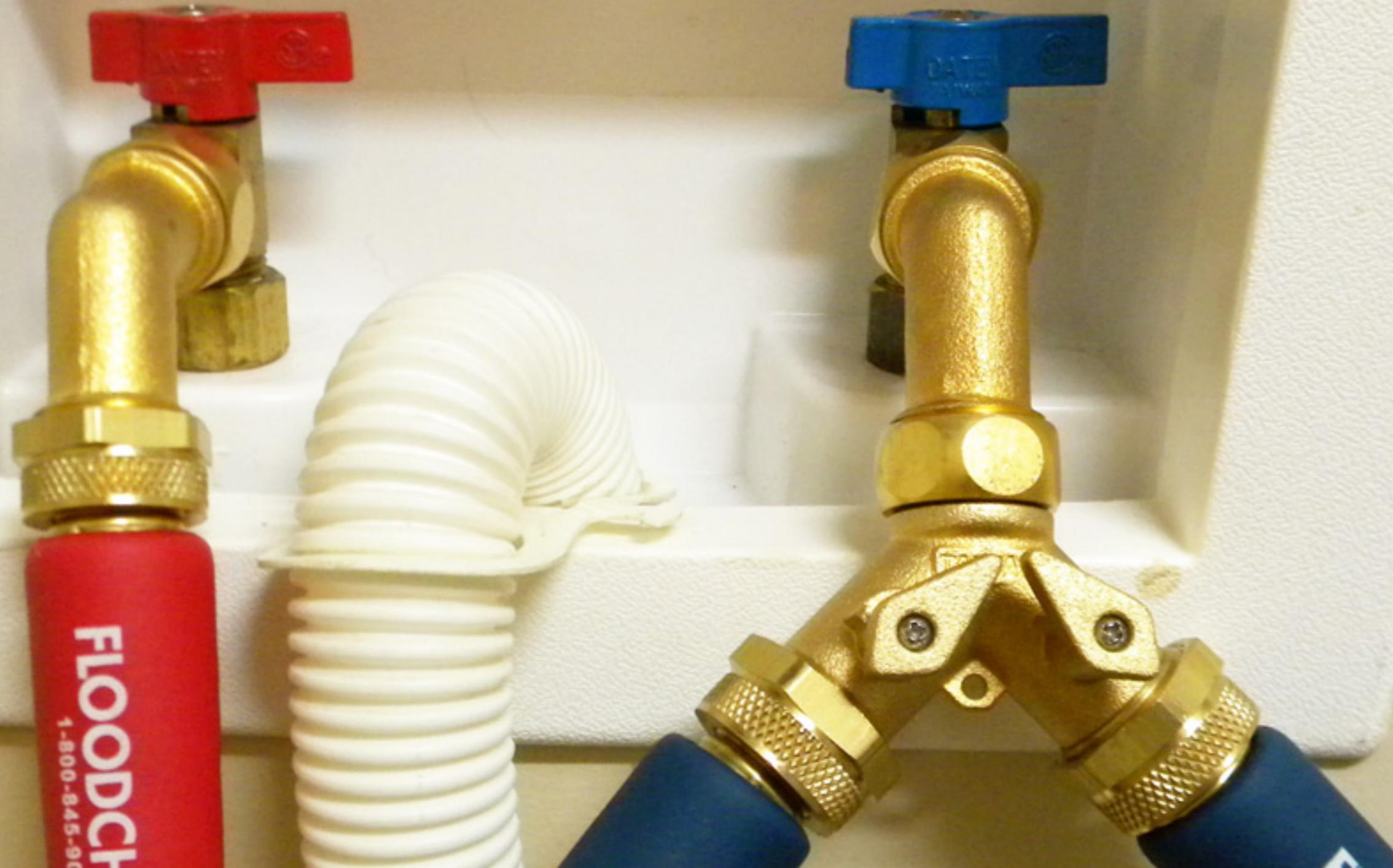
Encapsulation



Inheritance?



Polymorphism



Characteristics of OO Systems

Ease of maintenance



Reusability



Extendibility



Next lecture

Monday 5th of October 2020 at 10am (online):

- **Design and Implementation**

Next lab

Tuesday 6th of October 9am-10am and 10am-11am (online):

- Installing Visual-Paradigm (<https://www.visual-paradigm.com>)