

# CENG 211 – Programming Fundamentals

Introduction

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# Material

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- ▶ This course covers fundamentals of object-oriented programming paradigms including core data structures and algorithms. It will be mainly based on the Java programming language.
- ▶ Main Textbook:
  - ▶ Introduction to Programming in Java: An Interdisciplinary Approach by R. Sedgewick and K. Wayne
- ▶ Supplementary Textbooks:
  - ▶ Effective Java by J. Bloch, 2<sup>nd</sup> Ed.



# Course Objectives

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- ▶ At the end, you will be able to
  - ▶ convert a problem definition into a programming challenge,
  - ▶ devise a solution to this challenge,
  - ▶ implement the solution in a robust and efficient way,
  - ▶ test and improve your solution/implementation,
    - ▶ using object-oriented paradigms.
- ▶ You will become comfortable in selecting/using object-oriented paradigms and design patterns.
- ▶ You will be familiar with their concrete implementation in Java.



# Instruction

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- ▶ **Instructor**

- ▶ Asst. Prof. Dr. Tugkan Tuglular

- ▶ **Teaching Assistants**

- ▶ Ekinan Ufuktepe & Furkan Eren Uzyıldırım & Özge Sevgili

- ▶ **The Chain of Information Sources**

- Online Resources → Friends → Textbook → Assistants → Instructor

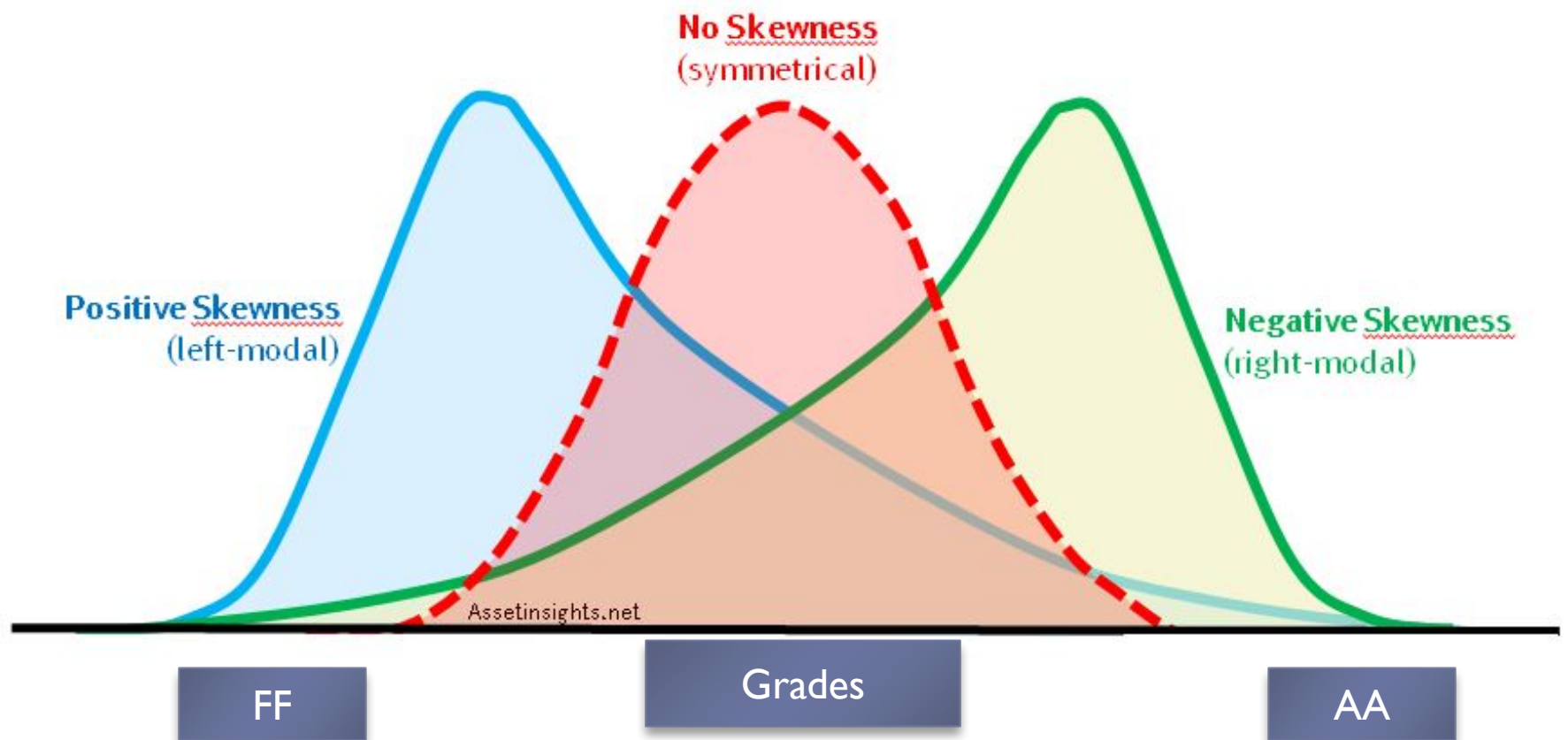


# Performance Evaluation and Grading

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- ▶ **2 Quizzes – 10% + 10%**
- ▶ **Midterm – 25%**
- ▶ **Homework Assignments – 20%**
  - ▶ Six of them
  - ▶ Groups of two
- ▶ **Final – 35%**





# Topics and Schedule

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- ▶ Introduction to Java Programming
- ▶ Primitive Data Types & Control Statements
- ▶ Objects, Methods, Arrays, and Strings
- ▶ Object Oriented Programming and ADT's
  - ▶ Encapsulation
  - ▶ Inheritance
  - ▶ Interfaces & Polymorphism
- ▶ Java Collections
- ▶ Exceptions
- ▶ Libraries and API's



# Practicals

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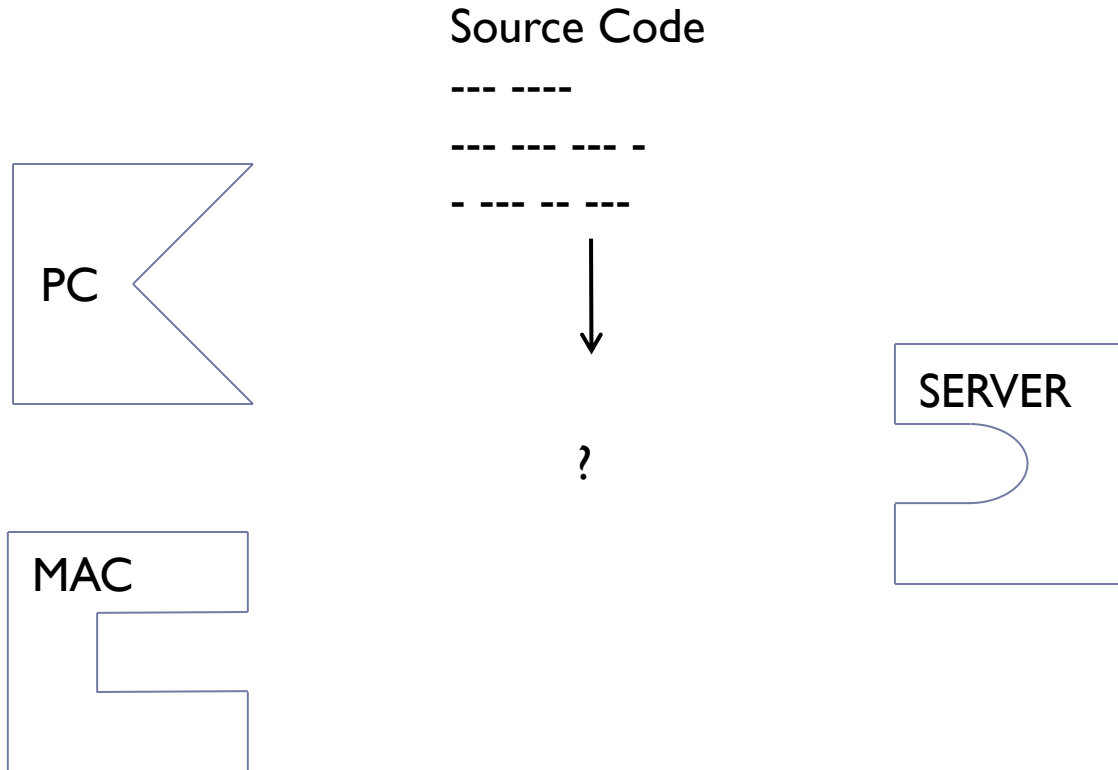
- ▶ Integrated Development Environment
  - ▶ Eclipse
- ▶ Testing
  - ▶ Junit
- ▶ Version Control
  - ▶ Git
- ▶ Course Website: <https://cms.iyte.edu.tr>





# One executable to rule them all?

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# Virtual Machines and Java Bytecode

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