

# Schedule

## Week 1

### Mon • Goals:

- Basic comfort with Java
- Basic setup with IntelliJ
- (Java/OOP) Classes, fields, constructors, encapsulation
- (Java/OOP) methods, parameters, local variables, constants/final
- (Java/OOP) static methods
- Activity: 1 hour coding practice: grade reading and gpa computation
- Lesson Plan 1<sup>1</sup>

### Tue • Goals:

- Variable and function basic principles
- Basic refactorings: extract variable/field/method, rename, inline
- Function size principles (“extract till you drop”)
- (Coding) variable and method naming
  - Video: Clean Code (Remake)<sup>2</sup>
  - Video: Names++<sup>3</sup>
  - Reading: Clean Code chapters 1, 2
- (Coding) Extraction code into small functions
  - Video: Functions<sup>4</sup>
  - Reading: Clean Code chapter 3 ?????
- Lesson Plan 2<sup>5</sup>

### Wed • Goals:

- Comment and Code formatting principles
- Function structure principles
- Prep:
  - Watch Function Structure video<sup>6</sup>
- (Coding) Function arguments, command-query separation
  - Video: Function Structure
  - Reading: Clean Code chapter 3 ?????
- (Coding) Comments, Formatting

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<sup>1</sup>[lessonPlans/lessonPlanDay1.html](#)

<sup>2</sup>[videos/01-clean\\_code.html](#)

<sup>3</sup>[videos/02-names.html](#)

<sup>4</sup>[videos/03-function\\_size.html](#)

<sup>5</sup>[lessonPlans/lessonPlanDay2.html](#)

<sup>6</sup>[videos/05-function\\_structure.html](#)

- Video: Clean Code, Form
- Reading: Clean Code, chapters 4, 5

- Thu**
- Goals:
    - Deep dive into extension mechanisms: inheritance and delegation
    - Discussion of the concept and value of polymorphism and information hiding
    - “Tell, don’t ask”
  - Prep:
    - Design Patterns book: 1.6 (maybe ?)
    - Clean Code, chapter 6
  - (Java/OOP) Inheritance vs Delegation
  - (Coding) Law of Demeter (Tell, don’t ask)

- Fri**
- Goals:
    - Code tracking with Version Control
    - Automated Testing and Test-driven development
  - (Practices) Version Control Basics
  - (Practices) Test-Driven Development
  - Prep:
    - Reading: Clean Code, chapter 9
    - Video: TDD Part 1 and 2

- For Later**
- Reading: ASD, chapter 4
  - Video: Advanced TDD Part 1?

## Week 2

- Mon**
- Goals:
    - Introduction to Agile Methodologies
    - Planning: User Stories, CRC Cards, Acceptance Tests
  - (Practices) Principles of Agile Development
    - Reading: ASD chapters 1-3
    - Discussion of XP methodologies (pair programming, tests first etc)
  - (Practices) User Stories
    - Video: Clean Code, Architecture, Use Cases and High Level design
  - (Practices) CRC Cards

- Mon2(TODO)**
- Goals:
    - Interfaces and dependency inversion (lamp example)
    - Introduction to the SOLID design principles, SRP and Open-Closed Principle

- Exam 1?
- (Principles) General values and principles for coding
- (Java/OOP) Interfaces
- (Principles) Single Responsibility Principle
  - Reading: ASD chapter 8
  - Video: In class
- (Principles) Open-Closed Principle
  - Reading: ASD chapter 9
  - Video: In class
- Tue**
  - (Principles) Liskov Substitution Principle
    - Video: In class
    - Reading: ASD chapter 10
  - (Principles) Dependency Inversion Principle
    - Video: In class
    - Reading: ASD chapter 11
  - (Principles) Interface Segregation Principle
    - Video: In class
    - Reading: ASD chapter 12 Wed
  - (Patterns) Command
    - Video: Clean Code: Design Patterns
    - Reading: ASD chapter 13
  - (Patterns) Template Method, Strategy
    - Video: Strategy and Template Method Patterns
    - Reading: ASD chapter 14
  - (Patterns) Facade, Mediator
    - Video: Clean Code: Pattern Roundup
    - Reading: ASD chapter 15
  - (Practices) UML Class Diagrams
  - Work on Project
- Thu**
  - (Practices) Version Control Advanced
  - Work on Project
- Fri**
  - (Java/OOP) Inner classes
  - (Coding) Exception Handling
    - Reading: Clean Code chapter 7

### Week 3

- Mon**
- (Patterns) Factory
    - Video: Clean Code: Factories
    - Reading: ASD chapter 21
  - TODO: Refactoring earlier
  - (Coding) Refactoring: Basic extractions, Inline
    - Video: Function Screencast, Prime Number Generation
    - Reading: ASD chapter 5
  - Work on Project

Tue - (Patterns) Null Object - Video: Clean Code: Pile O'Patterns - Reading: ASD chapter 16 ~ - (Patterns) Singleton, Monostate - Video: Clean Code: Pile O'Patterns - Reading: ASD chapter 17 - (Coding) Refactoring: Moving, signature change - Work on Project

- Wed**
- Reading: Clean Code, chapter 17 (smells/heuristics)
  - Work on Project

- Thu**
- (Patterns) Observer
    - Video: The Observer Pattern
    - Reading: ASD chapter 24
  - (Patterns) Adapter, Bridge, Proxy
    - Video: Clean Code: Pile O'Patterns
    - Reading: ASD chapters 25, 26
  - Work on Project

- Fri**
- (Patterns) Composite
    - Reading: ASD chapter 23
  - (Practices) UML Sequence Diagrams
  - Work on Project

### Week 4

- Mon**
- (Java/OOP) packages, modules (earlier?)
  - (Patterns) Visitor
    - Reading: ASD chapter 28
  - Work on Project

- Tue**
- (Patterns) State
    - Video: Finite State Machines and State Pattern
    - Reading: ASD chapter 29

- Work on Project

**Wed** • Work on Project

**Thu** • Work on Project

**Fri** • Work on Project