

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 1¹
- 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)²
 - Video: Names++³
 - Reading: Clean Code chapters 1, 2
 - (Coding) Extraction code into small functions
 - Video: Functions
 - Reading: Clean Code chapter 3 ?????
 - Lesson Plan 2⁴
- Wed**
- Goals:
 - Comment and Code formatting principles
 - Function structure principles
 - Prep:
 - Watch Function Structure video⁵
 - (Coding) Function arguments, command-query separation
 - Video: Function Structure
 - Reading: Clean Code chapter 3 ?????

¹lessonPlans/lessonPlanDay1.html

²videos/01-clean_code.html

³videos/02-names.html

⁴lessonPlans/lessonPlanDay2.html

⁵videos/05-function_structure.html

- (Coding) Comments, Formatting
 - 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”
 - (Java/OOP) Inheritance vs Delegation
 - (Coding) Law of Demeter (Tell, don’t ask)
 - Reading: Clean Code, chapter 6

- Fri**
- Goals:
 - Project and code tracking: Version Control, issue management
 - Automated Testing and Test-driven development
 - (Practices) Version Control Basics
 - (Practices) Issue Management
 - (Practices) Test-Driven Development
 - Reading: Clean Code, chapter 9
 - Reading: ASD, chapter 4
 - Video: TDD Part 1 and 2
 - 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