Schedule

Week 1

Mon

- Goals:
  - Basic comfort with Java
  - Basic setup with IntelliJ
- Topics:
  - (Java/OOP) classes, fields, constructors, encapsulation
  - (Java/OOP) methods, parameters, local variables, constants/final
  - (Java/OOP) static methods
- Activities for Day 1[1]
- Lunchtime Video: Clean Code-Remake (54m)[2]

Tue

- Goals:
  - Variable and function basic principles
  - Basic refactorings: extract variable/field/method, rename, inline
  - Function size principles ("extract till you drop")
- Prep:
  - Read *Clean Code*[3], chapters 1-3
  - Watch Names++[4]
- Topics:
  - (Coding) naming variables and methods
  - (Coding) extracting code into small functions
- Activities for Day 2[5]
- Lunchtime Video: Functions[6]

Wed

- Goals:
  - Comment and Code formatting principles
  - Function structure principles
- Prep:
  - Read *Clean Code*[7], chapters 4, 5
  - Watch Function Structure video[8]

[1] lessonPlans/lessonPlanDay1.html
[2] videos/01-clean_code.html
[3] https://learning.oreilly.com/library/view/clean-code/9780136083238/
[4] videos/02-names.html
[5] lessonPlans/lessonPlanDay2.html
[6] videos/03-function_size.html
[7] https://learning.oreilly.com/library/view/clean-code/9780136083238/
[8] videos/05-function_structure.html

- Topics:
  - (Coding) function parameters, command-query separation
  - (Coding) comments and formatting
- Activities for Day 3[9]
- Lunchtime Video: Form[10]

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:
  - Read *Design Patterns*, chapter 1.6
  - Read *Clean Code*[11], chapter 6
- Topics:
  - (Java/OOP) Inheritance vs Delegation
  - (Coding) Law of Demeter (Tell, don't ask)
- Activities for Day 4[12]
- Lunchtime Video: TDD Part 1[13]

Fri

- Goals:
  - Code tracking with Version Control
  - Automated Testing and Test-driven development
- Prep:
  - Read *Clean Code*[14], chapter 9
- Topics:
  - (Practices) Version Control Basics
  - (Practices) Test-Driven Development
- Activities for Day 5[15]
- Lunchtime Video: TDD Part 2[16]

For Later

- Video: Advanced TDD Part 1?

[9] lessonPlans/lessonPlanDay3.html
[10] videos/06-form.html
[11] https://learning.oreilly.com/library/view/clean-code/9780136083238/
[12] lessonPlans/lessonPlanDay4.html
[13] 07-tdd_part1.html
[14] https://learning.oreilly.com/library/view/clean-code/9780136083238/
[15] lessonPlans/lessonPlanDay5.html
[16] 07-tdd_part2.html

Week 2

Mon

- Goals:
  - Exam 1
  - Introduction to Agile Methodologies
  - Introduction to the SOLID design principles and SRP
  - Introduce User Roles/Actors in context of SOLID principles
- (Practices) Principles of Agile Development
  - Discussion of XP methodologies (pair programming, tests first etc)
- (Principles) Single Responsibility Principle
  - Reading: ASD chapters 8
  - Video: In class
- Prep:
  - Reading: ASD chapters 1-4

Tue

- Goals:
  - Interfaces and dependency inversion (lamp example)
  - Introduction to Open-Closed Principle
- (Principles) General values and principles for coding
- (Java/OOP) Interfaces
- (Principles) Open-Closed Principle
  - Reading: ASD chapter 9
  - Video: In class
- (Principles) Liskov Substitution Principle
  - Video: In class
  - Reading: ASD chapter 10
- (Practices) SOLID Principles Use Case (as in Clean Code video #14)
- Prep:
  - Reading: ASD chapters 7-8

Wed

- Goals:
  - Dependency Inversion Principle
  - Interface Segragation Principle
  - SOLID Principles Wrap-up Example
- (Principles) Dependency Inversion Principle
  - Video: In class
  - Reading: ASD chapter 11
- (Principles) Interface Segregation Principle
  - Video: In class
  - Reading: ASD chapter 12

Thur
- Goals:
  - Advanced TDD
  - Clean Tests
  - Test Design

Fri
- Goals:
  - Test Process
  - Mocking
  - Code Review

Week 3

Design Patterns in the morning; Work on project in the afternoon

Not sure where these goes:
- (Java/OOP) Inner classes
- (Coding) Exception Handling
  - Reading: Clean Code chapter 7
- Goals:
  - Planning: User Stories, CRC Cards, Acceptance Tests (Move to Later)
- (Practices) User Stories
  - Video: Clean Code, Architecture, Use Cases and High Level design
- (Practices) CRC Cards

Mon
- (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
- (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