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: Refactoring screencast "2": Prime generator[6]

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

---

[1] lessonPlans/lessonPlanDay01.html
[2] videos/01-clean_code.html
[3] https://learning.oreilly.com/library/view/clean-code/9780136083238/
[4] videos/02-names.html
[5] lessonPlans/lessonPlanDay02.html
[6] videos/04-prime_gen_screencast.html
[7] https://learning.oreilly.com/library/view/clean-code/9780136083238/
[8] videos/05-function_structure.html

- **–** (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 Composition
  - **–** (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]

Week 2

Mon
- Goals:
  - **–** Exam 1

---

[9]lessonPlans/lessonPlanDay03.html
[10]videos/06-form.html
[11]https://learning.oreilly.com/library/view/clean-code/9780136083238/
[12]lessonPlans/lessonPlanDay04.html
[13]videos/07-tdd_part1.html
[14]https://learning.oreilly.com/library/view/clean-code/9780136083238/
[15]lessonPlans/lessonPlanDay05.html
[16]videos/08-tdd_part2.html

- – 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 7, 8
  - – Videos: In class: notes #1 and #2
- Activities for Day 6[17]
- 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
- 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
- Activities for Day 7[18]
- Prep:
  - – Reading: ASD chapters 7-8

---

[17]lessonPlans/lessonPlanDay06.html
[18]lessonPlans/lessonPlanDay07.html

Wed • Goals:

  – Reinforce the SOLID Principles understanding with a use case example.
  – Become comfortable with user roles and user stories
  – Be introduced to the projects and meets with clients to create initial requirements and user stories.

• (Practices) SOLID Principles Use Case (as in Clean Code video #14)
• Activities for Day 8[19]
• (Project) Initial client meetings
• Prep:

  – Reading: From "User Stories Applied": Chapters 2, 3, 4

Thur • Goals:

  – Liskov Substitution Principle and SOLID Principles wrap-up
  – Clean Tests
  – Test Design

• Activities for Day 9[20]

Fri • Goals:

  – Mocking

• Activities for Day 10[21]
• (Project) Iteration 0 with clients

Week 3

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

Mon • Goals:

  – Test Process
  – Review Project Rules & Regulations

• Activities for Day 11[22]
• (Project) Start iteration 1

Tue • Exam 2
• Work on Project

Wed • (Patterns) Command

  – Video: Clean Code: Design Patterns
  – Reading: ASD chapter 13

---

[19]lessonPlans/lessonPlanDay08.html
[20]lessonPlans/lessonPlanDay09.html
[21]lessonPlans/lessonPlanDay10.html
[22]lessonPlans/lessonPlanDay11.html

- (Patterns) Template Method, Strategy
  - Video: Strategy and Template Method Patterns
  - Reading: ASD chapter 14
- Activities for Day 13[23]
- Work on Project

Thu
- (Patterns) Factory
  - Video: Clean Code: Factories
  - Reading: ASD chapter 21
- (Patterns) Facade, Mediator
  - Video: Clean Code: Pattern Roundup
  - Reading: ASD chapter 15
- Activities for Day 14[24]
- Work on Project

Fri
- (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
- Work on Project

Week 4

Mon
- (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

Tue
- (Patterns) Composite
  - Reading: ASD chapter 23
- (Patterns) Visitor
  - Reading: ASD chapter 28
- Work on Project

---

[23]lessonPlans/lessonPlanDay13.html
[24]lessonPlans/lessonPlanDay14.html

Wed   • Exam
      • Work on Project

Thu   • (Patterns) State
         – Video: Finite State Machines and State Pattern
         – Reading: ASD chapter 29
      • Work on Project
      • Work on Project

Fri   • Work on Project
      • End early, final demo