

# a3

## A3 Guides

These guides support Assignment 3: Sketch Pad. Read them as you work through the assignment.

### Foundational Guides

This page shows only NEW guides introduced in A3. If you need foundational guides covered in previous assignments (Git, Packages, Interface Contracts, Inheritance, JUnit 5, etc.), see the [All Guides](#) page.

## Event-Driven Programming & GUI

Guide	When to Read
<a href="#">Event-Driven Programming</a>	Before starting – understand what event-driven programming is and how event loops work
<a href="#">Swing API Basics</a>	Before starting – Java GUI history, JFrame/JPanel hierarchy, and core Swing patterns
<a href="#">Swing Layout Managers</a>	When exploring the starter code – understand how the toolbar and canvas are arranged

## Event Handling

Guide	When to Read
<a href="#">Adding Event Handlers</a>	Before Requirement 1 – how to add ActionListeners to buttons, from classes to lambdas

Guide	When to Read
<a href="#">Introduction to Lambda Expressions</a>	Before Requirement 1 – lambda syntax, functional interfaces, and method references
<a href="#">Handling Mouse Events</a>	Before Requirement 3 – MouseListener, MouseAdapter, and the dual-registration gotcha

## Code Quality

Guide	When to Read
<a href="#">Linters and Code Quality</a>	Review when Checkstyle or IntelliJ reports warnings in your code
<a href="#">Checkstyle Rules Reference</a>	<b>(Reference)</b> – Look up specific Checkstyle violations
<a href="#">IntelliJ Inspections Reference</a>	<b>(Reference)</b> – Look up specific IntelliJ warnings

## Version Control

Guide	When to Read
<a href="#">Git Branching and Pull Requests</a>	Before starting work – this assignment requires a dev branch and pull request

## References

This section consolidates references from all guides linked above.

### Primary Texts:

- Bloch, J. (2018). *Effective Java* (3rd ed.). Addison-Wesley.
  - Item 42: Prefer lambdas to anonymous classes

- Item 43: Prefer method references to lambdas
- Horstmann, C. S. (2022). *Core Java, Volume I: Fundamentals* (12th ed.). Oracle Press.
  - Chapter 6: Lambda Expressions
  - Chapter 10: Swing Basics
  - Chapter 11: Event Handling
  - Chapter 12: User Interface Components with Swing
- Reges, S., & Stepp, M. (2020). *Building Java Programs* (5th ed.). Pearson.
  - Chapter 14: Graphical User Interfaces
- Gamma, E., Helm, R., Johnson, R., & Vlissides, J. (1994). *Design Patterns: Elements of Reusable Object-Oriented Software*. Addison-Wesley.
  - Observer pattern
- Freeman, E., & Robson, E. (2020). *Head First Design Patterns* (2nd ed.). O'Reilly.
  - Chapter 2: The Observer Pattern
- Fowler, M. (2005). [Inversion of Control](https://martinfowler.com/). *martinfowler.com*.
  - The "Hollywood Principle" underlying event-driven design

#### Language Documentation:

- [Oracle JDK 25 Documentation](https://docs.oracle.com/javase/25/docs/api/) – Official Java SE reference
- [Oracle Java Tutorials: Writing Event Listeners](https://docs.oracle.com/javase/25/docs/tutorial/beans/beans.html) – Event handling tutorial
- [Oracle Java Tutorials: How to Write a Mouse Listener](https://docs.oracle.com/javase/25/docs/tutorial/beans/beans.html) – Mouse event tutorial
- [Oracle Java Tutorials: Laying Out Components](https://docs.oracle.com/javase/25/docs/tutorial/beans/beans.html) – Layout manager tutorial
- [Oracle JDK 25: javax.swing.JColorChooser](https://docs.oracle.com/javase/25/docs/api/javax.swing/JColorChooser.html) – Color chooser dialog
- [Oracle JDK 25: javax.swing.JOptionPane](https://docs.oracle.com/javase/25/docs/api/javax.swing/JOptionPane.html) – Option pane dialogs
- [Oracle JDK 25: java.awt.event.MouseAdapter](https://docs.oracle.com/javase/25/docs/api/java/awt/event/MouseAdapter.html) – Mouse event adapter
- [Oracle JDK 25: java.awt.event.MouseListener](https://docs.oracle.com/javase/25/docs/api/java/awt/event/MouseListener.html) – The "interesting" mouse events
- [Oracle JDK 25: java.awt.event.ActionListener](https://docs.oracle.com/javase/25/docs/api/java/awt/event/ActionListener.html) – Action event listener
- [Oracle Java Tutorials: JColorChooser](https://docs.oracle.com/javase/25/docs/tutorial/beans/beans.html) – Color chooser tutorial
- [Oracle Java Tutorials: How to Make Dialogs](https://docs.oracle.com/javase/25/docs/tutorial/beans/beans.html) – Dialog tutorial

#### Tooling:

- [JetBrains IntelliJ IDEA Documentation](https://www.jetbrains.com/idea/) – Official IDE reference
- [GitHub Classroom](https://github.com/classroom) – Educational features for assignments

#### Git and GitHub:

- [GitHub Pull Requests Documentation](#) – Official GitHub PR guide
- [Git Documentation](#) – Official Git reference

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