Joshua Bloch





Effective Java

Third Edition





Effective Java

Third Edition

Effective Java

Table of Contents

1	\cap	\sim	١,	۵	r
۱		u	v	H	ı

Title Page

Copyright Page

Contents

Foreword

Preface

Acknowledgments

- 1 Introduction
- 2 Creating and Destroying Objects
 - Item 1: Consider static factory methods instead of constructors
 - Item 2: Consider a builder when faced with many constructor parameters
 - Item 3: Enforce the singleton property with a private constructor or an enum type
 - Item 4: Enforce noninstantiability with a private constructor
 - Item 5: Prefer dependency injection to hardwiring resources
 - Item 6: Avoid creating unnecessary objects
 - Item 7: Eliminate obsolete object references
 - Item 8: Avoid finalizers and cleaners
 - Item 9: Prefer try-with-resources to try-finally
- 3 Methods Common to All Objects
 - Item 10: Obey the general contract when overriding equals



- Item 11: Always override hashCode when you override equals Item 12: Always override toString
- Item 13: Override clone judiciously
- Item 14: Consider implementing Comparable

4 Classes and Interfaces

- Item 15: Minimize the accessibility of classes and members
- Item 16: In public classes, use accessor methods, not public fields
- Item 17: Minimize mutability
- Item 18: Favor composition over inheritance
- Item 19: Design and document for inheritance or else prohibit it
- Item 20: Prefer interfaces to abstract classes
- Item 21: Design interfaces for posterity
- Item 22: Use interfaces only to define types
- Item 23: Prefer class hierarchies to tagged classes
- Item 24: Favor static member classes over nonstatic
- Item 25: Limit source files to a single top-level class

5 Generics

- Item 26: Dont use raw types
- Item 27: Eliminate unchecked warnings
- Item 28: Prefer lists to arrays
- Item 29: Favor generic types
- Item 30: Favor generic methods
- Item 31: Use bounded wildcards to increase API flexibility
- Item 32: Combine generics and varargs judiciously
- Item 33: Consider typesafe heterogeneous containers

6 Enums and Annotations

Item 34: Use enums instead of int constants



Item 35: Use instance fields instead of ordinals
Item 36: Use EnumSet instead of bit fields
Item 37: Use EnumMap instead of ordinal indexing
Item 38: Emulate extensible enums with interfaces
Item 39: Prefer annotations to naming patterns
Item 40: Consistently use the Override annotation
Item 41: Use marker interfaces to define types

7 Lambdas and Streams
Item 42: Prefer lambdas to anonymous classes
Item 43: Prefer method references to lambdas
Item 44: Favor the use of standard functional interfaces
Item 45: Use streams judiciously
Item 46: Prefer side-effect-free functions in streams
Item 47: Prefer Collection to Stream as a return type
Item 48: Use caution when making streams parallel

8 Methods

- Item 49: Check parameters for validity
- Item 50: Make defensive copies when needed
- Item 51: Design method signatures carefully
- Item 52: Use overloading judiciously
- Item 53: Use varargs judiciously
- Item 54: Return empty collections or arrays, not nulls
- Item 55: Return optionals judiciously
- Item 56: Write doc comments for all exposed API elements

9 General Programming

- Item 57: Minimize the scope of local variables
- Item 58: Prefer for-each loops to traditional for loops



- Item 59: Know and use the libraries
- Item 60: Avoid float and double if exact answers are required
- Item 61: Prefer primitive types to boxed primitives
- Item 62: Avoid strings where other types are more appropriate
- Item 63: Beware the performance of string concatenation
- Item 64: Refer to objects by their interfaces
- Item 65: Prefer interfaces to reflection
- Item 66: Use native methods judiciously
- Item 67: Optimize judiciously
- Item 68: Adhere to generally accepted naming conventions

10 Exceptions

- Item 69: Use exceptions only for exceptional conditions
- Item 70: Use checked exceptions for recoverable conditions and runtime exceptions for programming errors
- Item 71: Avoid unnecessary use of checked exceptions
- Item 72: Favor the use of standard exceptions
- Item 73: Throw exceptions appropriate to the abstraction
- Item 74: Document all exceptions thrown by each method
- Item 75: Include failure-capture information in detail messages
- Item 76: Strive for failure atomicity
- Item 77: Dont ignore exceptions

11 Concurrency

- Item 78: Synchronize access to shared mutable data
- Item 79: Avoid excessive synchronization
- Item 80: Prefer executors, tasks, and streams to threads
- Item 81: Prefer concurrency utilities to wait and notify
- Item 82: Document thread safety



Item 83: Use lazy initialization judiciously

Item 84: Dont depend on the thread scheduler

12 Serialization

Item 85: Prefer alternatives to Java serialization

Item 86: Implement Serializable with great caution

Item 87: Consider using a custom serialized form

Item 88: Write readObject methods defensively

Item 89: For instance control, prefer enum types to readResolve

Item 90: Consider serialization proxies instead of serialized instances

Appendix: Items Corresponding to Second Edition

References

Index

