

# Chapter 4

## Impossible Perfection

- If perfect code is impossible, what strategies can we adopt to achieve the highest quality possible?

# Design by Contract

- Compare Design by Contract with Test-Driven Development

# Crash, don't Trash

- Can you think of a way that you might get bad or dirty data in your current application? How might you identify this before it happens?

# Exceptions

- “exceptions should rarely be used as part of a program’s normal flow; exceptions should be reserved for unexpected events.”
  - Code should still run even if all exception handler code is removed

# Finish What You Start

- The routine that allocates a resource should deallocate it
  - Often done with constructors and destructors
  - Problems with exceptions
    - C++: deallocation must occur in normal and all exceptional paths
      - use local objects rather than pointers to objects
      - If not possible, use a wrapper (e.g. `auto_ptr`)
    - Java: garbage collector may not run immediately
      - use finally clause