Copyright © 2005
John Wiley & Sons, Inc.

- All rights reserved. Reproduction or translation of this work beyond that permitted in Section 117 of the 1976 United States Copyright Act without the express written permission of the copyright owner is unlawful.
- Request for further information should be addressed to the Permissions Department, John Wiley & Sons, Inc.
- The purchaser may make back-up copies for his/her own use only and not for redistribution or resale.
- The Publisher assumes no responsibility for errors, omissions, or damages, caused by the use of these programs or from the use of the information contained herein.
Key Concepts

- Be familiar with the system construction process.
- Understand different types of tests and when to use them.
- Understand how to develop documentation.
Managing Programming

- Assigning Programmers
- Coordinating Activities
- Managing the Schedule
Coordinating Activities

- Regular Project Meetings
- Follow standards
  - File naming
  - Forms to be completed
  - Programming guidelines
- Coordinate traceability of implementation to requirements
Managing the Schedule

- Control scope creep
- Manage schedule slippage
- Create a risk assessment
Avoid Implementation Mistakes

- Research-oriented development
- Using low-cost personnel
- Lack of code control
- Inadequate testing
Designing Tests

- Unit tests
- Integration tests
- System tests
- Acceptance tests
Testing and Object Orientation

- Encapsulation and information hiding
- Polymorphism and dynamic binding
- Inheritance
- reuse
Unit or Class Tests

- Focus on a single unit – the class
  - Black-box Testing
  - White-box Testing
- Develop tests for each contract of a class
  - Test for initial conditions
  - Possibly test for random inputs
Integration Tests

- How a set of classes work together
- Classes pass unit tests first
- Interface testing
- Use-Case Testing
- Interaction Testing
- System Interface Testing
System Testing

- Requirements
- Usability
- Security
- Performance
- Documentation
Acceptance Testing

- **Alpha**
  - Conducted by users to ensure they accept the system

- **Beta**
  - Users use real data, not test data
Developing Documentation

- System Documentation
  - Produced by systems analysis and design process
  - Automate documentation for classes and methods

- User Documentation
  - User Manuals
  - Training Manuals
  - Online Help Systems
Online Documentation Strengths

- Facilitates searching
- Same information can be presented in different formats
- Provide interaction with users using links or “tool-tips”
- Less expensive to distribute
Designing Documentation Structure

- Table of Contents
- Navigation Controls lead user to Documentation topics
- How to perform certain tasks
- Definitions of important terms
Online Documentation Example

Title
Links to other pages
Show me button

Navigation Buttons

Save a document to an FTP site

To do this procedure, your company must have an intranet or you must have access to an Internet site that supports saving files, and you must have access rights to save.

Before you can save a document to an FTP site, you must add an FTP site to the list of Internet sites. For information about how to add an FTP site to the list of Internet sites, click the Internet Locations (FTP) button.

1. On the File menu, click Save As.
2. In the Save in box, click Internet Locations (FTP).
3. In the list of FTP sites, double-click the site you want, and then double-click the location at the site you want to save the document to.
4. In the File name box, type the document name.
5. Click Save.
Documentation Writing

- Use Active Voice
- E-prime Style
- Consistent terms
- Simple language
- Friendly language
- Parallel grammatical structures
- Correct use of steps
- Short paragraphs
Applying Concepts at CD Selections

- Managing Programming
  - 3 programmers

- Testing
  - Unit Test – Blackbox tests
  - Integration – User Interfaces
  - System – Requirements, security, performance, and Usability
  - Acceptance – Alpha and Beta
Develop User Documentation

- Reference Documents for web interface and system management components
  - Help topics
- Documentation Component
  - Table of Contents
  - Index
  - Find or search
  - Links to definitions
Summary

- Assign programmers and coordinate their activities
- Plan for the testing of all aspects of the application
- Write the documentation for both the systems side and the user aspect