

An Introduction to
**Object-Oriented
Analysis**

Objects in plain English.

**Chapter 6: The Object-Oriented
Development Life Cycle**

Based on the book by

David W. Brown

John Wiley & Sons, ISBN 0471110280

**Chapter 6: The Object-Oriented
Development Life Cycle
(OODLC)**

- ❶ 6.1. The Life Cycle
- ❷ 6.2. The Object-Oriented Analysis Phase
- ❸ 6.3. The Object-Oriented Design Phase
- ❹ 6.4. The Construction Phase
- ❺ 6.5. The Object-Oriented Testing Phase
- ❻ 6.6. The Maintenance Phase

**Chapter 6: The Object-Oriented
Development Life Cycle (OODLC)**

❶ 6.1. The Life Cycle

- The OODLC is an update of the older SDLC
- In this chapter we will overview the OODLC
- Beginning in Chapter 7 we will look at detailed step-by-step methods for doing your analysis.
- The aim in this chapter is to see how all the pieces fit together.
- We do the Analysis phase in detail since it is the focus of this course.

Chapter 6: The Object-Oriented Development Life Cycle (OODLC)

① 6.1. The Life Cycle

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① 6.1. The Life Cycle

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② 6.2. The Object-Oriented Analysis Phase

- In Analysis we model the users' requirements
- For what the eventual system must DO.
- Output of this process is a conceptual model
- Consisting of 4 deliverables:
 - Requirements Model
 - Object Model
 - State Transition Diagram model (STDs)
 - Functional Model (DFDs)

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② 6.2. The Object-Oriented Analysis Phase
■ Requirements Model

The Requirements model has 4 components:

- Project Scope
- Context Diagram
- Use Case Scenario Model
- Interface Descriptions

Now let's look at these in detail. . .

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② 6.2. The Object-Oriented Analysis Phase
■ Requirements Model

- The Project Scope is a statement of what our project is to produce.
- States in general terms what the system will do for the users.
- May be a paragraph or two,
- Or many pages, depending on the size of the project.
- There is much variation in size and format among companies and methodologies.

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② 6.2. The Object-Oriented Analysis Phase
■ Requirements Model

- It is also important that the Scope say what the system will *not* do,
- Otherwise the users will try to “push the scope”
- Which causes “Scope Creep.”

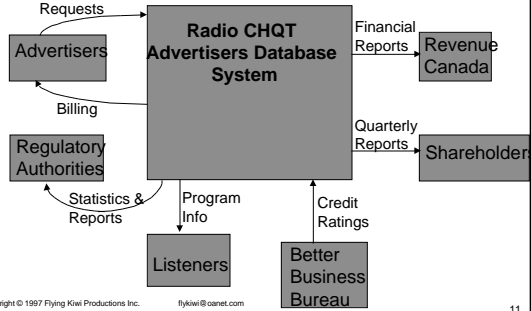
② 6.2. The Object-Oriented Analysis Phase
■ Requirements Model

The Context Diagram:

- Shows our system as a large box,
- Surrounded by smaller boxes,
- Representing External Entities:
 - ie., People, organizations, systems and other things outside our system that either provide data to it or draw data from it.

② 6.2. The Object-Oriented Analysis Phase
■ Requirements Model

Context Diagram



② 6.2. The Object-Oriented Analysis Phase
■ Use Case Scenario Model

- A Use Case Scenario is a script,
- A step-by-step description of how a user might make use of the system
- To do a task.
- It is a "case of the usage of the system."
 - ▲ See Ch 7 for details.

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② 6.2. The Object-Oriented Analysis Phase

Interface Descriptions

- GUI
- Other I.S. Systems
- Real-World systems that we control
- Communications interfaces
- etc.

Rational Objectory Process

In Rational Rose/UML, the visual model used to show the Systems Requirements is the

Use Case Diagram

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③ 6.3. The Object-Oriented Design Phase

- **Modify Analysis model to reflect design decisions,**
- **Mostly by adding information to the existing model.**
- **Add some new classes that do not directly model things in the real world.**
- **Result is a plan of how the system will do what the Requirements Analysis is asking for**

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Analysis is what the system must do,

Design is how the system will do it.

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④ 6.4. The Construction Phase

- Coding and testing.
- Deployment and user training.
- Should be done with an O-O language or database.

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⑤ 6.5 The Object-Oriented Testing Phase

- Complete the unit testing of individual classes and programs
- Then system testing.
- Testing must be thorough and complete,
- And automated.

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- ❻ 6.6. The Maintenance Phase
 - Bug fixes
 - Enhancements
 - Viruses
 - End-user computing
 - Backups and restores
 - ▲ 3 levels + offsite.
 - Disaster preparedness and recovery
 - ▲ The World Trade Center bombing.
 - ▲ Murphy's Law
