

Topic 3: Object-Oriented Design Process

Part 1: Identifying Classes and Responsibilities Ch2.1-2.5

Definitions and Introduction

- OOD
- OOP
- Problem Domain
- Programming tasks attempt to solve a particular problem.
 - It may be simple or complicated depending on the problem at hand.
 - It is a common practice to break up the software development process into **software development phases**

The Phases

3

Software Development Phases

- Basic Software Creation can be broken down into three phases:
 - Analysis
 - Design
 - Implementation
- These phases are usually make up the software development process.
- Evolution of process:
 - Change is inevitable
 - OOD generally works well with software changes

Analysis Phase

- **Goal:** to create a complete description of what your software is suppose to do
- **Output** is a SRS document.
- Functional specification or use cases. This completely describes the domain terms
 - Understandable by all parties involved
 - Testable

OO Design Phase

- **Goal:** to identify classes, their responsibilities, and what relationships (if any) that exist between them
 - We do this using an iterative process of discovery and refinement
- **Output** is a diagram of classes and relationships between them. This may also include text descriptions of the classes
- Purpose: A good design leads to faster implementation

Implementation Phase

- **Goal:** Program, test, and deploy the software
- **Process:**
 - Skeleton
 - Component-wise
- **Integration:**
 - Incremental Integration
 - Continuous Integration
 - Single Integration