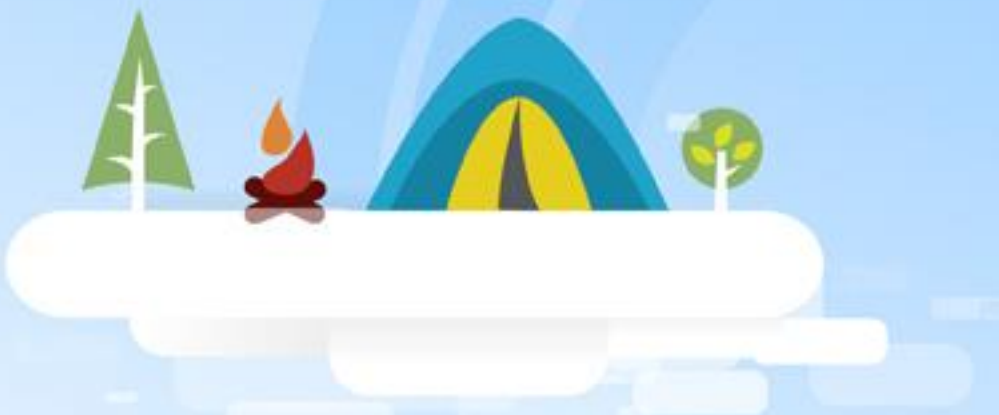
Object Oriented Analysis Design (OOAD)



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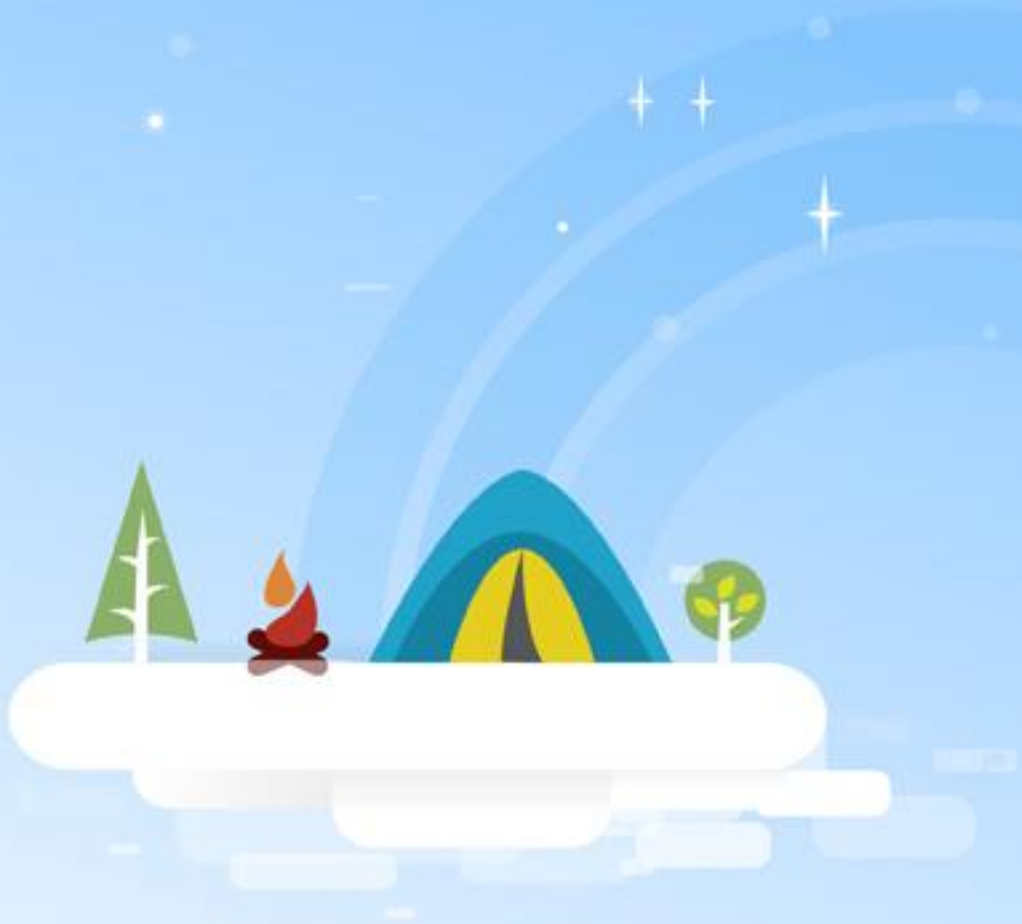
Overview

- The Fundamental of OOAD
- Analysis in OO
- Design in OO
- The Implementation of OOAD

Fundamental of OOAD



Four Pillar of Object Oriented

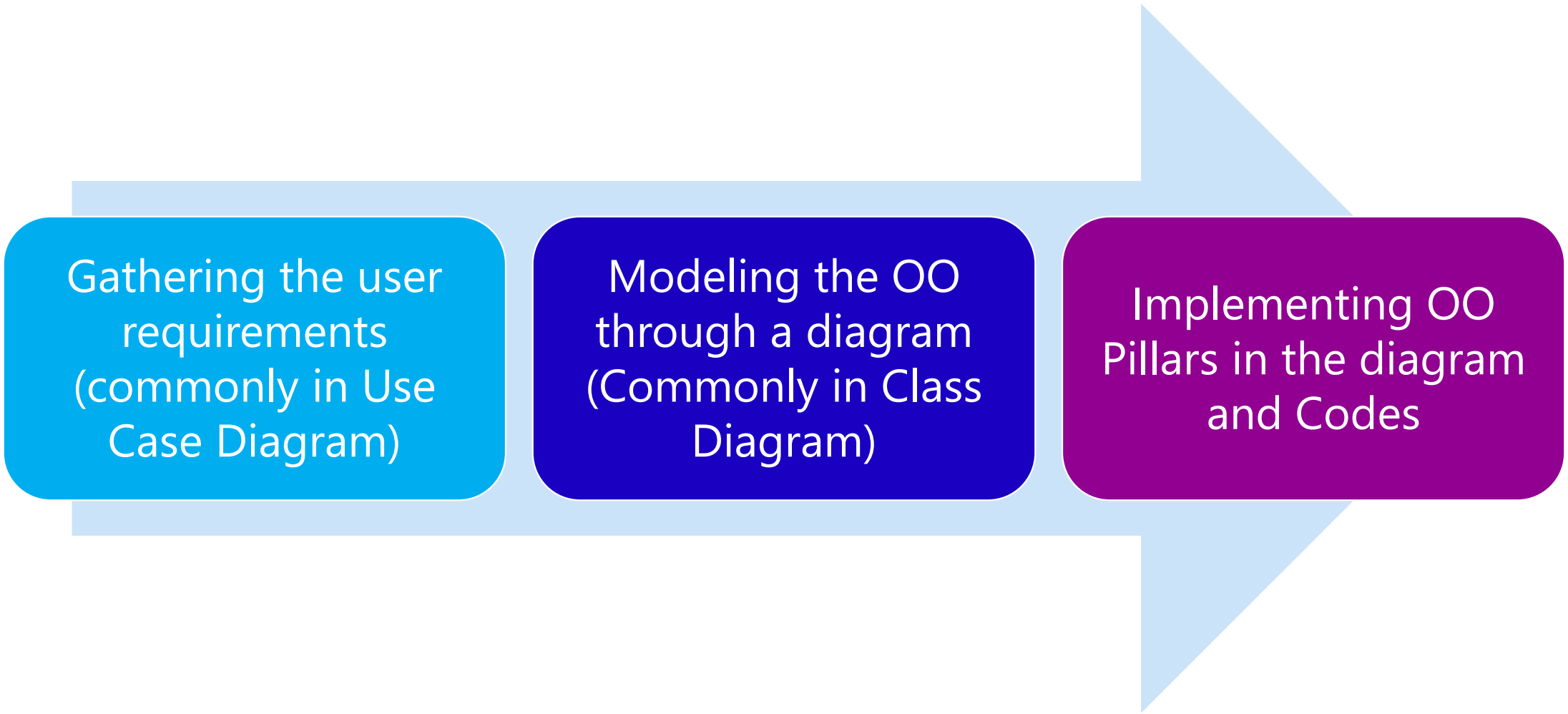
Abstraction

Polymorphism

Inheritance

Encapsulation

Modeling Object Oriented

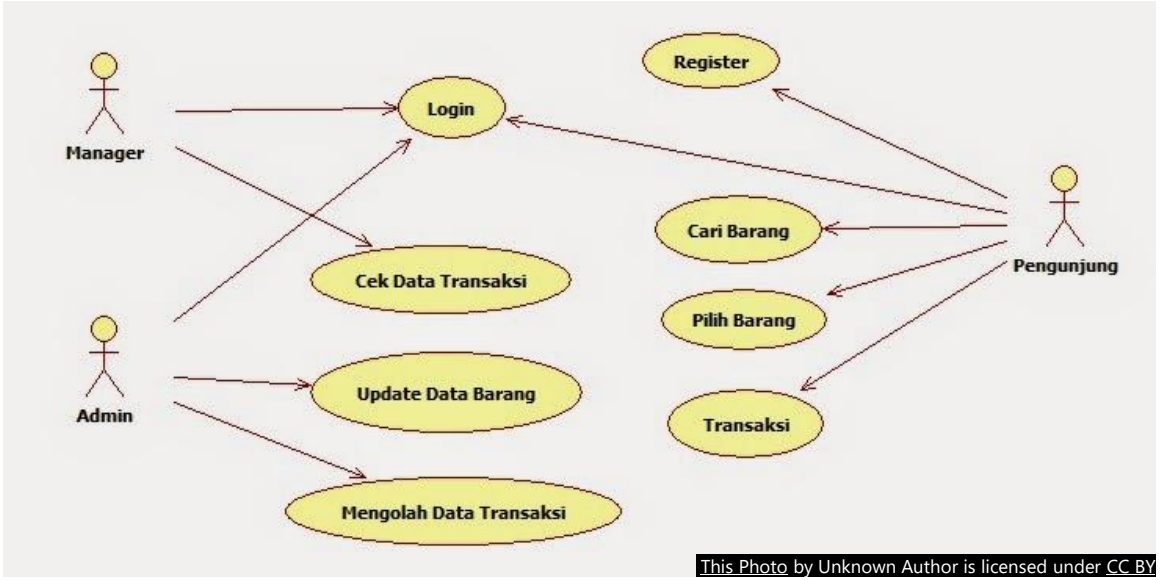


Forward Engineering

- Creating a skeleton codes using class diagram model
- Provided by CASE (Computer Aided Software Engineering) Tools
  - Enterprise Architect
  - Rational Rose
  - Visual Paradigm
  - Power Designer
- Other ways: reverse engineering or round trip

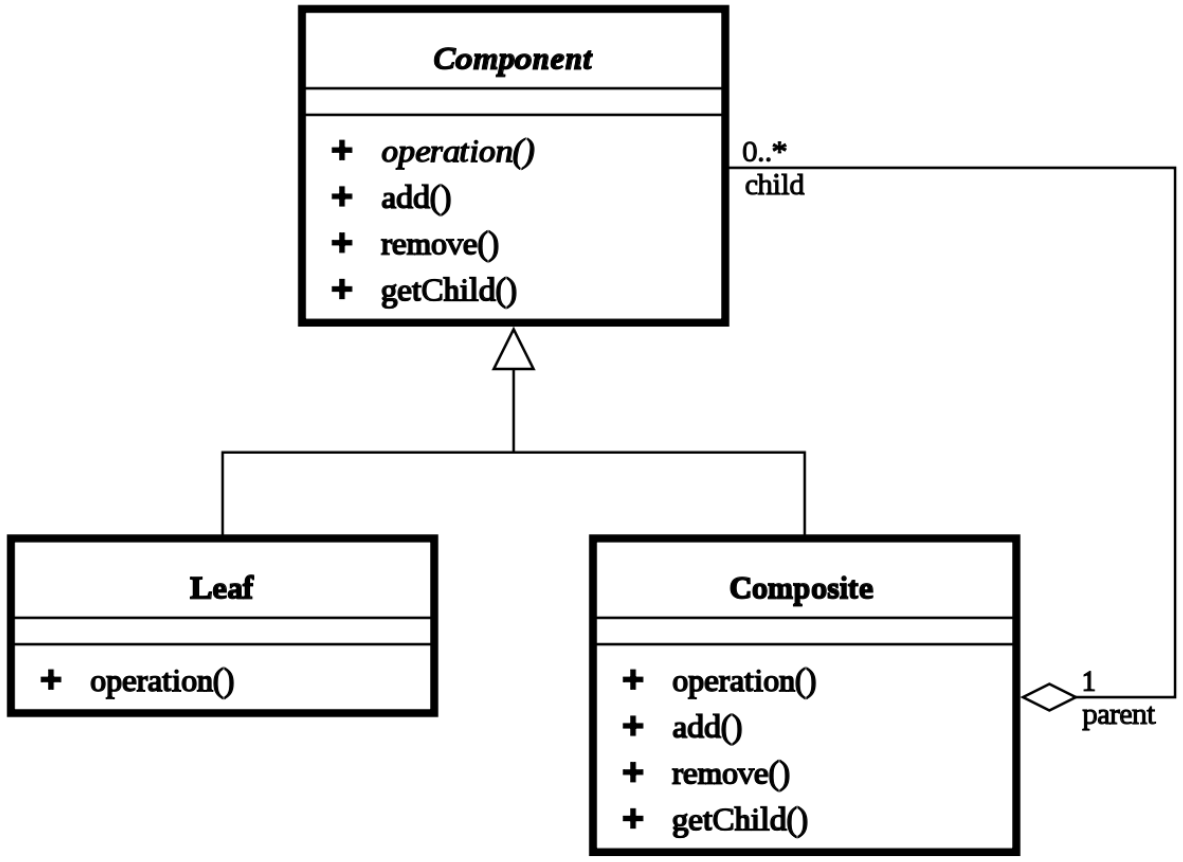
Review the Use Case Diagram

- Kite Level
- Sea Level



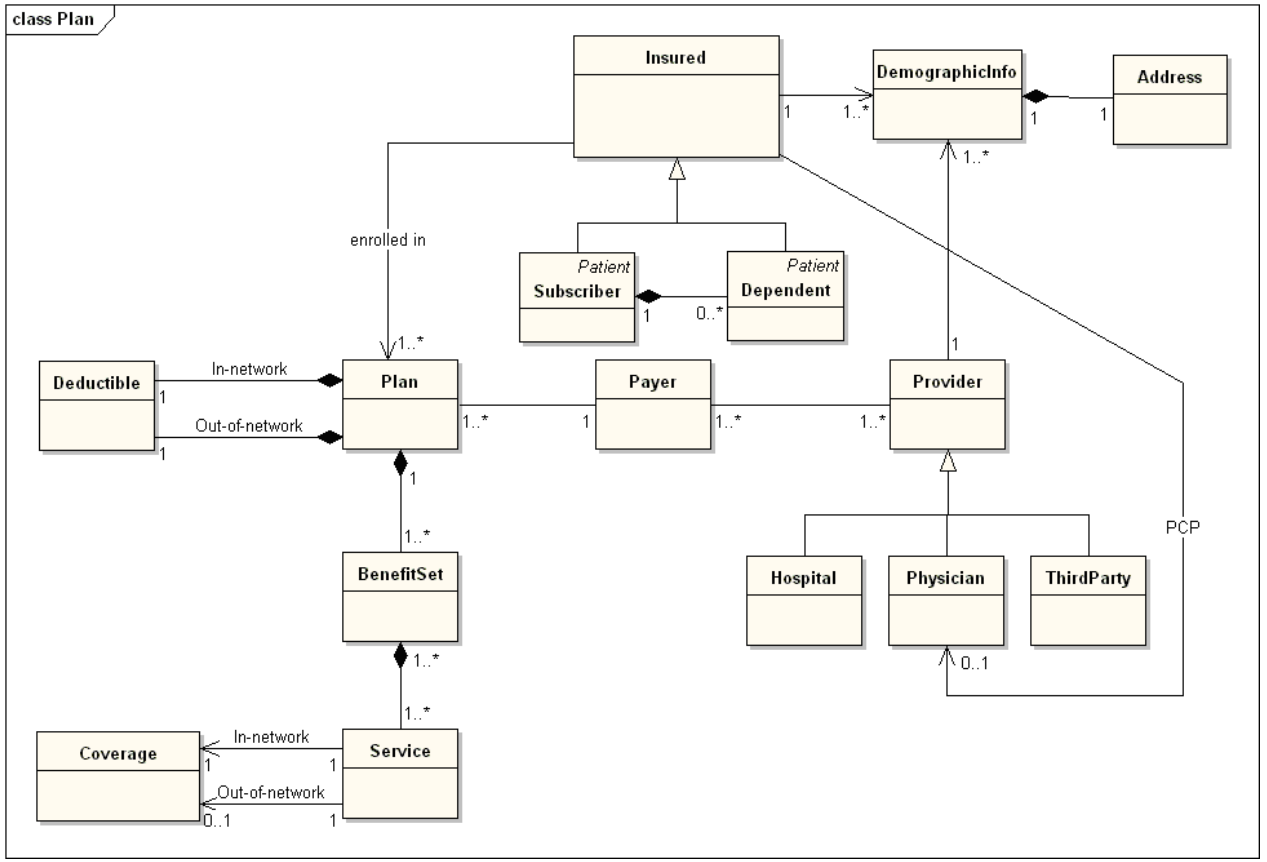
Review the Class Diagram

- Domain Model Level
- Object Model Level



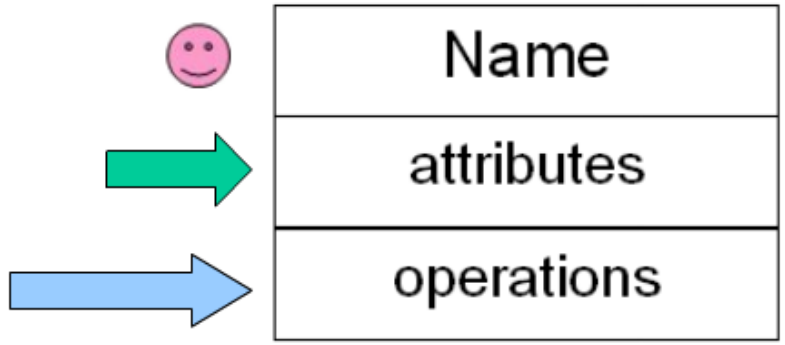
Domain Model

- As a conceptual model of a domain of interest
- It contains
  - Enity Name
  - Relation between entity

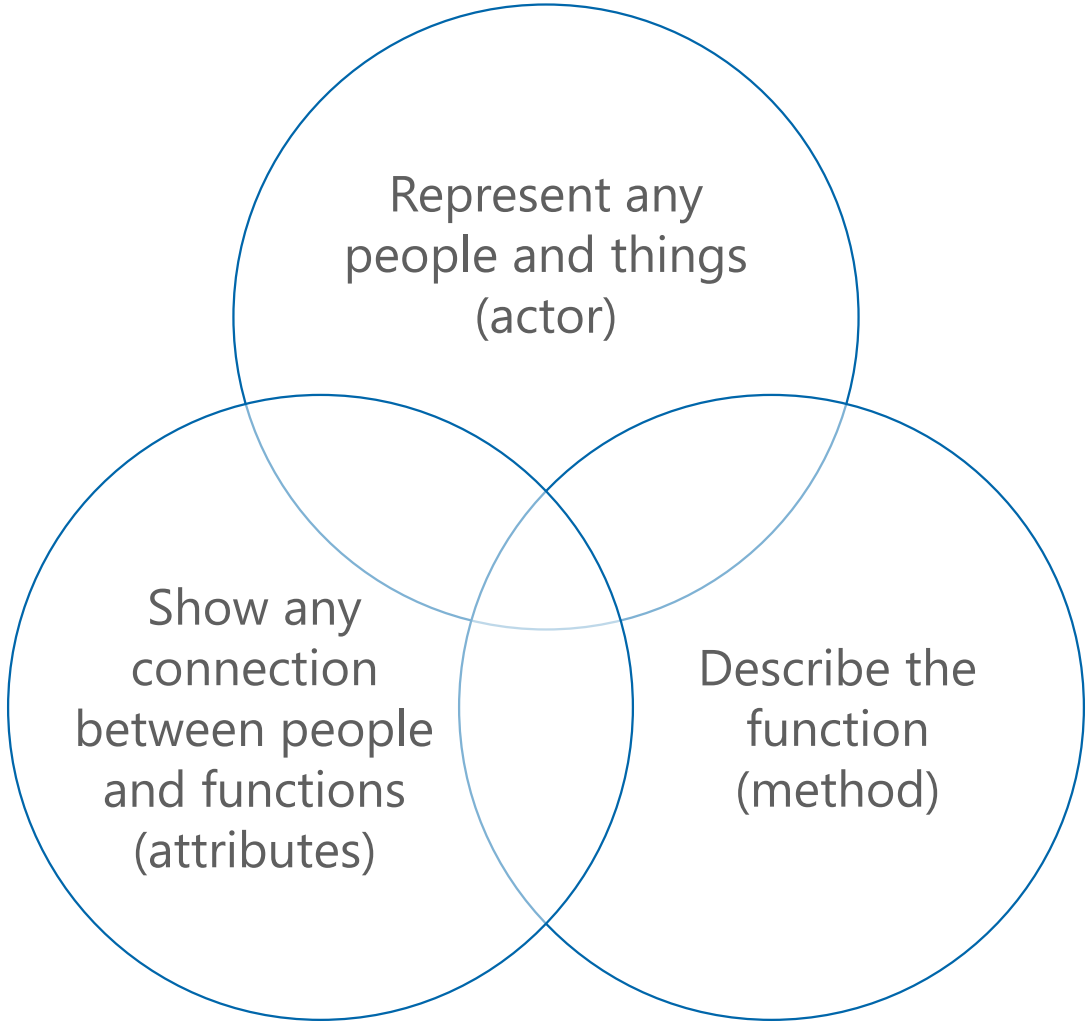


Objects model

- Entity Name
  - Things, abstractions or concept
  - may be defined as a thing which is recognized as being capable of an independent existence
- Attribute
  - Entity characteristics
- Operations
  - Capability and functions



Object Oriented Model Should



Others Diagram

Entity Relationship Diagram

Activity Diagram

Component Diagram

Software Deployment Diagram

Busines Process Modelling Notation

Demo

Implementing OO Model in UML Diagram

Why OOAD

Software Complexity is increasing

Algorithm is multifaceted

Distributed but Connected

Object Oriented Analysis

What is OO Analysis

Method of analysis that examines the requirements from the perspectives the classes & objects found in the vocabulary of the problem domain

Grady booch-

Examples of Verbatim Requirements

Member request book in the library. Member can ask the librarian or look for himself. Member ask the book to the librarian. Librarian will tell the location and the availability of the book. Member will confirm to rent the book. Librarian will note the rent date return. Member should return the book based on the rent date return. Memberi will have maximum ten books.

Analysis Characteristics

- Highest level of abstraction
- Obtain the objects until uniquely identified
- The Objects should be abstracted
- More investigation than solution

Exercise

Try writing your requirement and do noun-verb analysis

Object Oriented Design

What is OO Design

Method of design encompassing the process of OO Decomposition for depicting both logical dan physical as well as static and dynamic model

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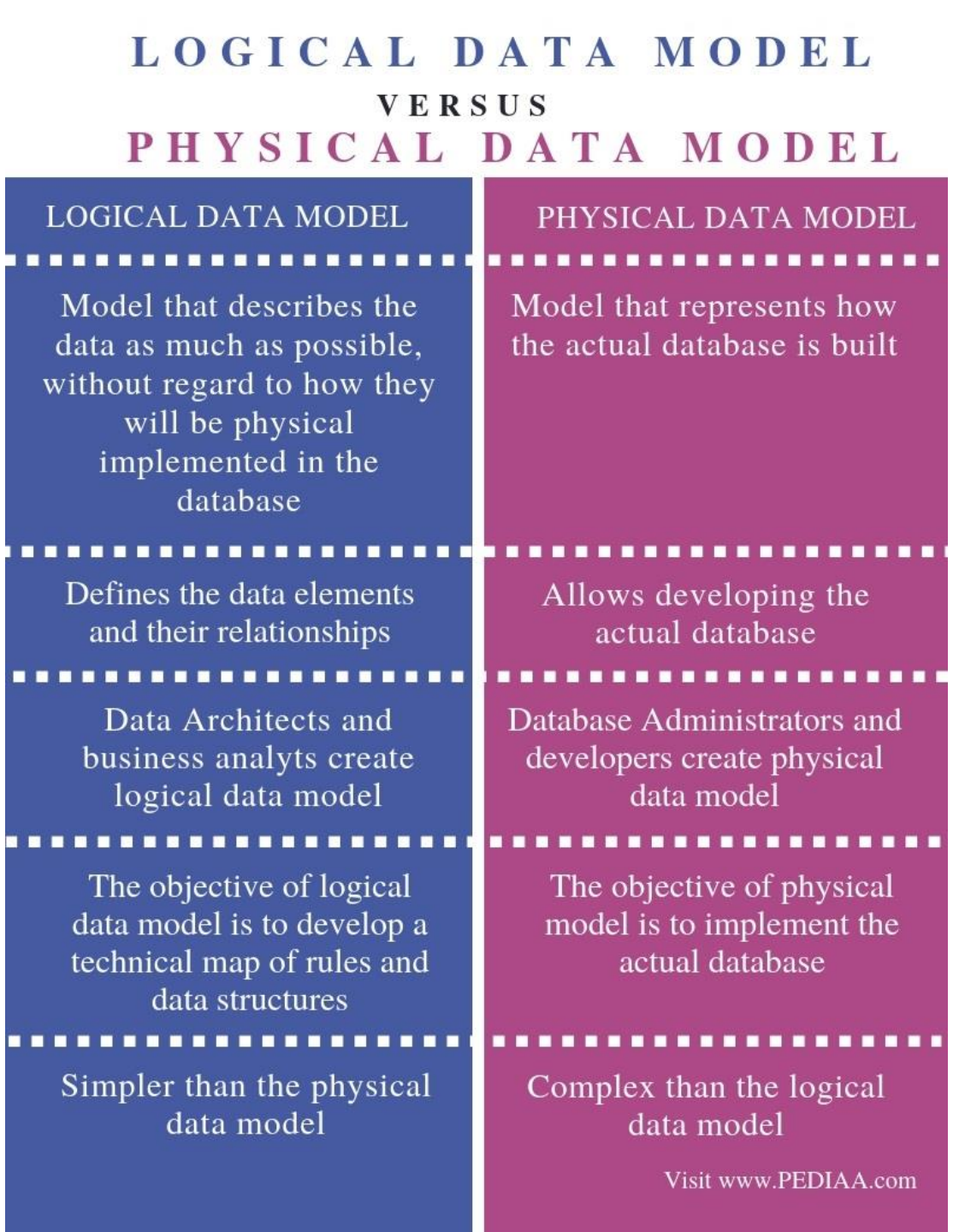
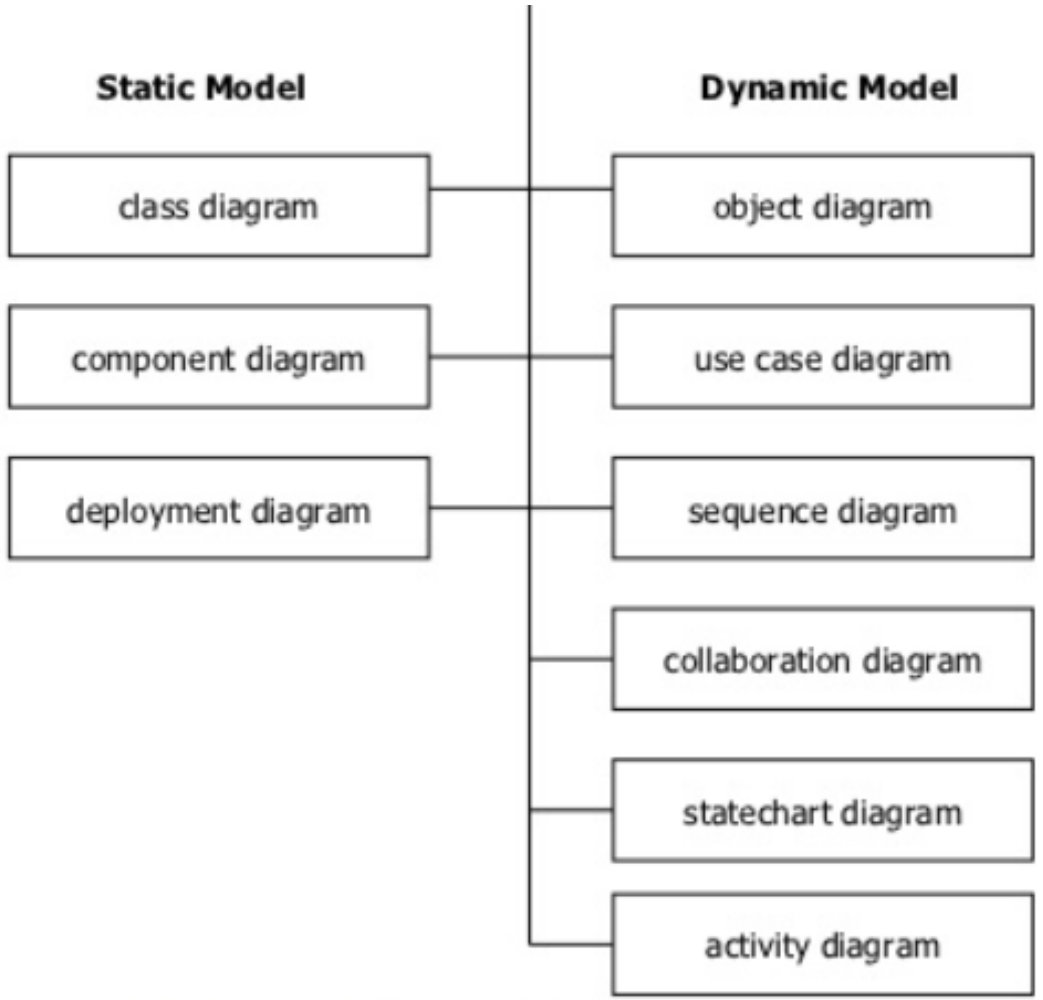
Logical vs Physical



Static and Dynamic

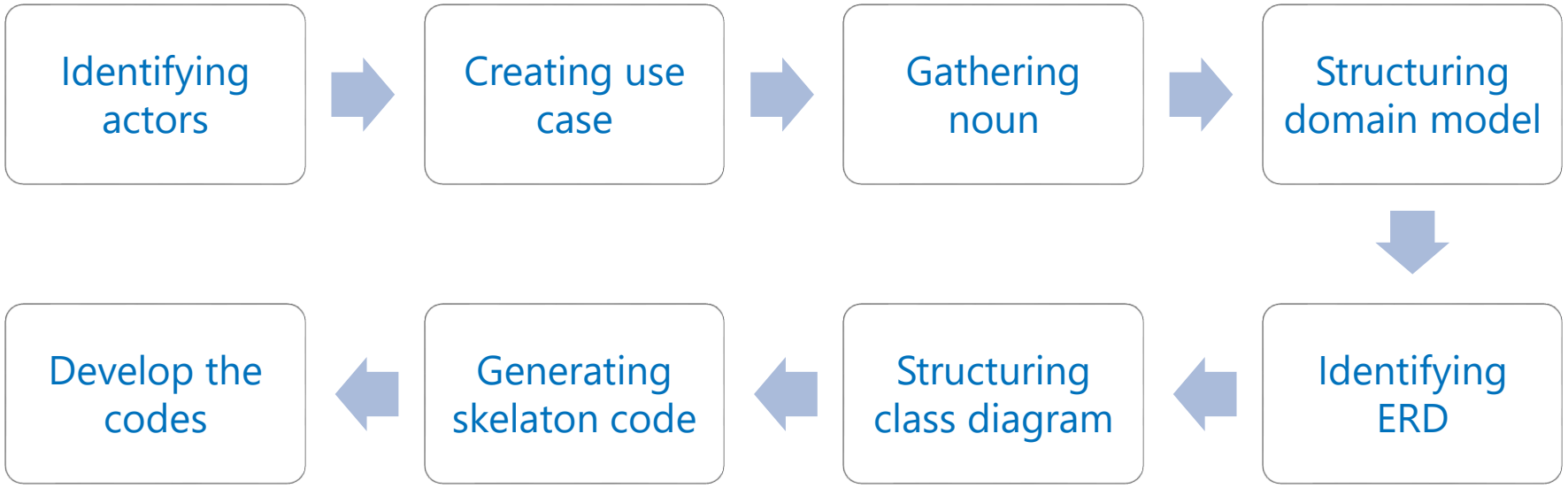


Source: Arlow and Neustadt, *UML and the Unified Process* (Addison-Wesley, 2002), p. 11.

Exercise

Try writing your design in UML

Keypoints


Identifying actors
Creating use case
Gathering noun
Structuring domain model
Identifying ERD
Structuring class diagram
Generating skelaton code
Develop the codes