CPE_Group9 CPE106L/B3

Engr. Dionis Padilla April 29, 2024

# LABORATORY EXERCISE #3

## Object Oriented Design and Implementation

**PreLab**

METIS #1:

Systems Analysis and Design: An Object Oriented Approach with UML

Alan Dennis, Barbara Haley Wixom, David Tegarden

Edition 5

ISBN: 9781119561217

Wiley Global Education US

2015

- Chapter 4, pp 121 - 130 (Use case Diagram)

- Chapter 5, pp 176 - 185 (Class Diagram)

METIS #2:

Fundamentals of Python: First Programs

Kenneth A. Lambert

Edition 2

ISBN: 9781337671019

Cengage Learning US

2019

- Chapter 9: Design with Classes

Readings, Insights, and Reflection:

- Torres, Nicole Allyson B.
    - Fundamentals of Python: First Programs (Chapter 9 - Design with classes)

    - Chapter 9 of "Fundamentals of Python: First Programs" by Kenneth A. Lambert is a helpful guide for designing programs with classes in Python. The chapter explains crucial object-oriented design principles like encapsulation, inheritance, and polymorphism and is an excellent resource for beginners. The chapter describes creating custom classes in Python and defining attributes and methods to represent object characteristics and behaviors. It also explores how different classes can work together effectively within a program. The chapter introduces common design patterns like Singleton, Factory, and Observer, which encourage best code reusability and maintainability practices. Overall, Chapter 9 equips learners with the skills to effectively design robust and scalable Python programs using object-oriented principles and design patterns.

- Pangilinan, Cromuel
    -

- Gavino, Karl Ignatius G.
    - In the second edition of "Fundamentals of Python: First Programs" by Kenneth A. Lambert, readers are provided with a comprehensive grasp of Python programming, highlighting Chapter 9: "Design with Classes." The author carefully explained the properties and different uses of object-oriented programming (OOP) principles, equipping us students with a solid groundwork for crafting and deploying classes to encapsulate functionality. Emphasizing the significance of inheritance, polymorphism, and abstraction, this chapter enhanced us with essential tools for constructing dependable Python applications. The book enables novice programmers to cultivate skills in writing structured and coherent code, while also fostering a deeper comprehension of software architecture and design patterns—essential assets for tackling complex programming endeavors.

- Alonzo, Xavier
    -

Answer to Questions:

1. A
2. C
3. B
4. B
5. B
6. B
7. A
8. B
9. B
10. A