Topic or concept:

Introduction to Classes(Object Oriented Programming)- Chapter 10

Basic objectives for preparatory work:	Advanced objectives for classwork & after class work:
• Define properties of Object Oriented Programming • Differentiate between Procedural Programming and Object Oriented Programming • Define OOP and its properties • Define a class	• Identify the classes and objects required to solve the problem from a given problem statement • Verify if classes built satisfy the properties of OOP. • Identify the attributes and methods of every class built. • Write an entire solution to problem statement, which includes identifying classes, building algorithms for all the methods, testing

Flipped BEFORE CLASS Work Plan

Basic learning objectives	Activity and Rationale	Instructions to students
• Understanding properties of Object Oriented Programming • Understand the difference between Procedural Programming and Object Oriented Programming • Define OOP and its properties • Define a class	Reading:Read “Introduction to Classes” chapter (Tony Gaddis 7th edition, pp. 280-320) https://www.youtube.com/watch?v=dfQTXz-Md8o https://www.youtube.com/watch?v=-DP1i2ZU9gk	Read the specified sections of Textbook, and watch videos Also, take a small quiz uploaded on Blackboard before the class. Also, prepare a concept map of your understanding after reading the textbook and upload to Blackboard->Discussion Board.

Flipped AFTER CLASS Work Plan

Advanced learning objective	Activity and rationale	Instructions to students
• Given a problem description, students should be able to identify the classes and objects required to solve the problem. • Be able to verify if classes built satisfy the properties of OOP. • Be able to identify the attributes and methods of every class built. • Be able to write a classes in C++ language and create the objects based on classes. • Test the program to check if it solves the problem.	https://www.youtube.com/watch?v=-DP1i2ZU9gk Watch the link given above and Complete the Assignment4 by October 30th 11:59 pm	Read the problem statement of Assignment4 and follow the steps ■ Identify classes Step a: Find the nouns Read through the problem statement and the associated documentation and highlight the nouns. Parts of speech translate very nicely into object model elements. Nouns translate into classes or objects, attributes, or attribute values. Verbs translate into methods. Step b:Evaluate the nouns to find classes Questions to ask to evaluate nouns to find classes: • Is the term needed within the scope of the project? • If so, then does the noun qualify as a problem domain resource? Think of an appropriate class name for the domain resource to which the noun refers. • Otherwise, is the noun an attribute of a class? What class? Write it down. Step c: Define the purpose Describe why the class is a required resource of the problem domain. ■ Write the classes in C++ language(Sample will be shown in powerpoint slides) ■ Test if the code written works as expected and follows properties of OOP.

GUIDED PRACTICE

Class: Introduction to Classes OOP
Date assigned: October 12th
Date due: October 30th
Time estimate to complete this assignment: 11:59 pm

Overview/Introduction

What is this lesson about? Why do we care?

This is chapter that comes in the middle of the course. Students would have already seen how to give instructions to Computer in C++ language to solve a problem through Procedural Programming approach. This Lesson is about Object Oriented Programming, another programming appoach. This lesson only introduces the approach that helps to solve bigger problem.

OOP integrates multiple problem solutions of the Enterprise Company minimizing the number of programs(lines of code). Features/Properties of OOP such as reusability, encapsulation, inheritance etc helps secure the code, reuse the code, and support hierarchy of the company.

Learning Objectives

Basic objectives

List 3-5 learning objectives that you expect students to be able to master on their own before class.

1. Be able to solve any problem in Procedural Programming.
2. Define properties of Object Oriented Programming
3. Differentiate between Procedural Programming and Object Oriented Programming
4. Define OOP and its properties
5. Define a class

Advanced objectives

List 3-4 learning objectives that you expect students to need help mastering.

1. Identify the classes and objects required to solve the problem from a given problem statement

2. Verify if classes built satisfy the properties of OOP.

3. Identify the attributes and methods of every class built.

4. Write an entire solution to problem statement, which includes identifying classes, building algorithms for all the methods, testing

Preparatory Activities and Resources:

1. Give detailed, action-oriented instructions for completing the Guided Practice assignment. Keep in mind that the activities should be minimal, simple, engaging, productive, and failure tolerant (see Talbert, 2017, pg. 135)

   - Read the specified sections of Textbook, and watch videos
   - Also, take a small quiz uploaded on Blackboard before the class.
   - Also, prepare a concept map of your understanding after reading the textbook and upload to Blackboard->Discussion Board.

2. Give a "playlist" of resources such as readings, videos, audio, or other content delivery methods that provide students the content to work with.

   - Reading:Read "Introduction to Classes" chapter (Tony Gaddis 7th edition, pp. 280-320)
   - Watch Links: https://www.youtube.com/watch?v=dfQTXz-Md8o
     https://www.youtube.com/watch?v=-DP1i2ZU9gk

Exercises: Please complete by OCTOBER 11TH 11:59 PM_____.

- Give a method for students to submit their work online BEFORE the face to face class meeting. Google forms, Surveymonkey, and tools in your LMS will all work. Alternatively, give them instruction on what completed work to bring to class as an entry ticket.
- The submitted work should demonstrate students' mastery of the basic learning objectives.

Submit the Quiz to Blackboard

Submit the concept on Blackboard->Discussion Board.

Questions?

Give a way for students to get help.

Please feel free to email or meet me personally for any questions.

ADVANCED PRACTICE

This is given for students to complete after the class meeting in which they work together.

Class:
Date assigned: October 12
Date due: October 30th
Time estimate to complete this assignment: (Note that this is advanced practice, so is expected to take longer than a preparatory assignment – but not TOO long! Keep it reasonable.) 11:59 pm

Learning Objectives

Advanced objectives

List 3-4 learning objectives that you expect students to need help mastering in class and after class.

- Identify the classes and objects required to solve the problem from a given problem statement
- Verify if classes built satisfy the properties of OOP.
- Identify the attributes and methods of every class built.
- Write an entire solution to problem statement, which includes identifying classes, building algorithms for all the methods, testing

Activities & deliverables

Give detailed, action-oriented instructions for completing the assignment. Make sure to also include a reflective component. Describe what students should turn in, by when.

- Read the problem statement and identify the classes, the attributes and methods of the classes.(This exercise is performed in the class activity)
- Build algorithms for all the methods.
- Build the flow of the program.
- Test if all the requirements are met.

Turn in all the C++ files built, and also the screenshots of your testing. Submit this on Blackboard->CS201->Assignment4.

Assignment Due date is October 30th 11:59 pm

Resources:

- Give a “playlist” of resources to help students complete the assignment.

https://www.youtube.com/watch?v=-DP1i2ZU9gk&t=230s

Questions?

Give a way for students to get help.

Please feel free to reach me through email or meet me in person during my regular office hours or by appointment.