Object Oriented Programming

Week 07
Polymorphism

Cảm ơn thầy Trần Duy Quang đã cung cấp template cho môn học

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Notes

Create a single solution/folder to store your source code in a week.

Then, create a project/sub-folder to store your source code of each assignment.

The source code in an assignment should have at least 3 files:

- A header file (.h): struct definition, function prototypes/definition.
- A source file (.cpp): function implementation.
- Another source file (.cpp): named YourID_Ex01.cpp, main function. Replace 01 by id of an assignment.

Make sure your source code was built correctly. Use many test cases to check your code before submitting to Moodle.

Name of your submission: **StudentID_W07_YY.zip**. YY: number of assignments you have done. YY: 00 – 99.

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Content

In this lab, we will review the following topics:

1. Apply polymorphism to maintain a list of objects that have the same base class.

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Assignments

A: YY: 01 (class diagram in png format, full of Assignment 1; source code in C++, half of Assignment 1)

H: YY: 02

Draw a class diagram and implement in C++ for each of the following assignments.

Class diagram: https://en.wikipedia.org/wiki/Class_diagram

Use class string and class vector.

3.1. Assignment 1 – Company

Company ABC asks you to build an employee management system.

The system should store the following info for each employee: employ id, full name, hire date, address.

There are 2 types of employees in the company: Office employee and worker.

- Salary of an office employee in a month = number of his/her working days * pay rate per day (300.000 VND/day)
- Salary of a worker in a month = number of items he/she produced in the month * rate pay per item (20.000VND/item)

In this week exercise, you are asked to create 3 classes: Employee, OfficeEmployee and Worker. OfficeEmployee and Worker extends/inherits from Employee.

Then you must define and implement the following methods for each Employee classes.

1. Input the information of an employee
2. Print the information of an employee to console.
3. Compute the salary in a month of an employee
4. Define at least 5 constructors for each of 3 classes.

Then, define another class, Company, store all types of employees in a single array. And write the following methods for class Company:

1. Input a list of employees
2. Print out the info of all employees in the company
3. Print out the total salary the company has to pay in a month
4. Print out all employees whose salaries are the biggest value in the company.

3.2. Assignment 2 – Console

What is printed out?

Write your answer and your explanation to a Markdown file.