COMP 360-01 Programming Languages Fall 2025

Project 2
Due Date: November 12

Objective: An object-oriented programming language supports abstraction, encapsulation, inheritance and polymorphism. Inheritance is a means for incrementally building new types from an existing parent type by inheriting, modifying, or adding to both the existing components and operations of the parent type. Inheritance greatly supports reuse in the software development process. Graphical User Interfaces (GUI) is another technique that provides a friendly environment for users. Students will practice these techniques in this project.

Project Assignment

Hua Dong Company is a software development company that has three types of software developers. They are new developers, junior developers, senior developers. An employee has basic information such as last name, first name, and social security number.

Design and implement a Payment System for Hua Dong Company using single inheritance. Basic operations include setting monthly payment rate and calculating annual payment. A new developer's monthly salary is $10,000. A junior developer's monthly salary is $13,000. A senior developer's monthly salary is $15,000. If the team develops a new product that makes a good profit, every developer will receive $5,000 bonus. A junior developer will also receive additional 1% of his or her salary. A senior developer will also receive additional 1% of his or her salary, plus special 100 stocks. An interface should be developed to allow a user to input required information and display output information.

Your team project must satisfy the following requirements:

1) A Graphic User Interface must be developed to allow a user to input required information and display the results.
2) If a user requests annual payment information, a person's last name, first name, social security number and total payment should be displayed. For a junior or senior developer additional information should also be displayed, such as additional 1% payment, and stocks, total payment, etc.
3) Single inheritance must be used to demonstrate the concept of inheritance.
4) Static polymorphic and dynamic polymorphic implementation must be demonstrated.

Requirements:

a) This is a two-person team project.
b) The team should use department programming standards.
c) The program must be executed correctly.
d) Email your program to TA Subhram Dasgupta. His email is: sdasgupta@aggies.ncat.edu