Université d'Ottawa · University of Ottawa

Faculté de Génie - Faculty of Engineering
ITI1121Z Introduction to Computing II –Assignment 1

Due date: June 3rd, 2023 – 11:30 PM EDT

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Important note: Assignments are individual work. We will use software solutions to automate the process of checking similarity between student submissions for further inspection by the professor. Similarity of your submission with any public solution will also be investigated.

This assignment is composed of only two questions.

1 - A student is a person, and so is an employee. Create a class Person that has the data attributes common to both students and employees (name, social security number, age, gender, address, and telephone number) and appropriate method definitions. A student has a grade-point average (GPA), major, and year of graduation. An employee has a department, job title, and year of hire. In addition, there are hourly employees (hourly rate, hours worked, and union dues) and salaried employees (annual salary). Define a class hierarchy and write an application class that you can use to first store the data for an array of people and then display that information in a meaningful way.

2 - A company has two different kinds of employees: professional and nonprofessional. Generally, professional employees have a monthly salary, whereas nonprofessional employees are paid an hourly rate. Similarly, professional employees have a certain number of days of vacation, whereas nonprofessional employees receive vacation hours based on the number of hours they have worked. The amount contributed for health insurance is also different for each kind of employee. Use an abstract class Employee to store information common to all employees and to declare methods for calculating weekly salary and computing health care contributions and vacation days earned that week. Define subclasses Professional and Nonprofessional. Test your class hierarchy.