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CIT 260 – 04

W11 Exercise: Assignment 11 (program 11.1)

Task:

Design a parent class named Employee. Your Employee class should include:

- A String, *name*, that holds the employee's name.
- an integer *serialNumber*, that holds the employee's serial number.
- A no-arg constructor that initializes *name* to "none" and *serialNumber* to 0.
- A parameterized constructor that initializes *name* and *serialNumber* using arguments passed to the constructor.
- Getters for *name* and *serialNumber*.
- A method named *getGrossPay( )* that returns a zero;
- A method named *getFedWithholding( )* that returns a zero.
- A method named *getStateWithholding( )* that returns a zero.

Design a class named Hourly that inherits from Employee. Your Hourly class should include:

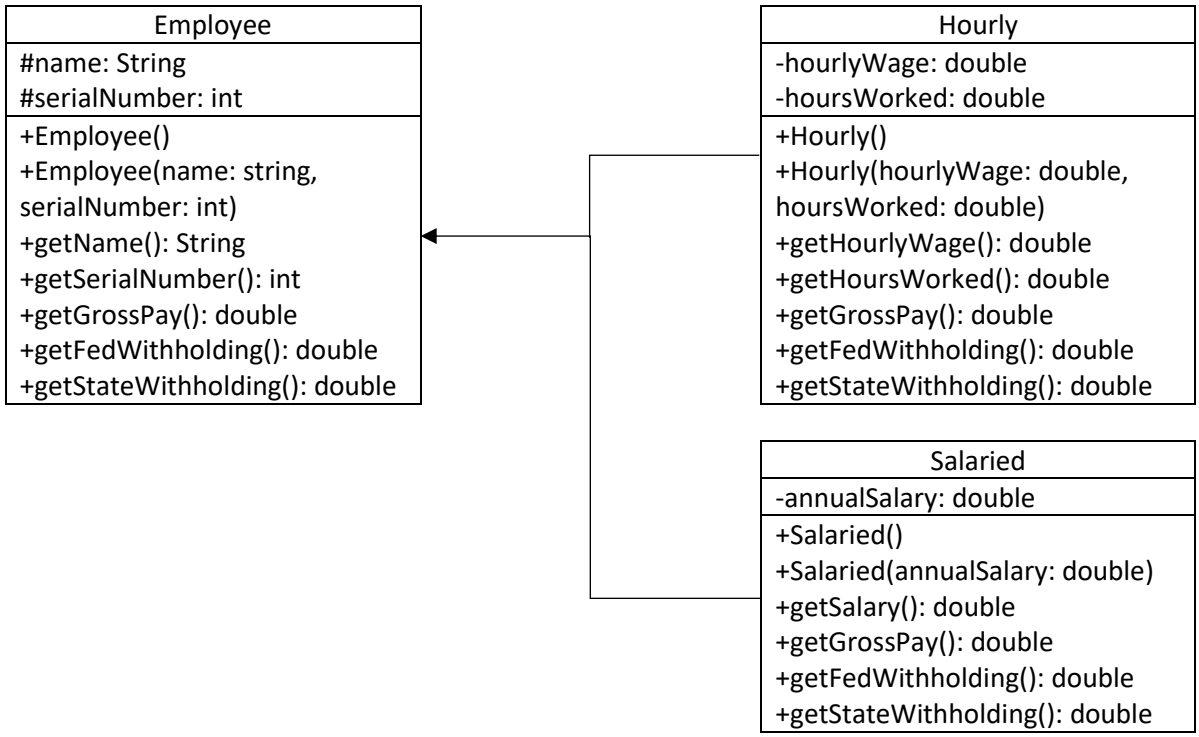
- A double, *hourlyWage*, that holds this person's hourly wage.
- A double, *hoursWorked*, that holds the number of hours this person worked.
- An appropriate no-arg constructor.
- An appropriate parameterized constructor.
- Getters for *hourlyWage* and *hoursWorked*.
- Override the *getGrossPay( ), getFedWithholding( )* and *getStateWithholding( )* methods from the Employee class. The gross pay for an Hourly employee is calculated as *hoursWorked* x *hourlyWage*. Use a state tax rate of 0.07 and a federal tax rate of 0.15.

Design a class named Salaried that inherits from Employee. Your Salaried class should include:

- A double, *annualSalary*, that holds the annual salary for this person.
- An appropriate no-arg constructor.
- An appropriate parameterized constructor.
- A Getter for *salary*.
- Override the *getGrossPay( ), getFedWithholding( )* and *getStateWithholding( )* methods from the Employee class. The gross pay for a Salaried employee is calculated as *annualSalary / 52*. Use a *state tax rate of 0.07* and a *federal tax rate of 0.15*.

Create a UML diagram that documents your class design. Show the Employee, Hourly and Salaried classes in your diagram. Include your diagram when you submit your assignment. The preferred format is a .PDF file.

UML diagram:


Employee
#name: String
#serialNumber: int
+Employee()
+Employee(name: string, serialNumber: int)
+getName(): String
+getSerialNumber(): int
+getGrossPay(): double
+getFedWithholding(): double
+getStateWithholding(): double
Hourly
-hourlyWage: double
-hoursWorked: double
+Hourly()
+Hourly(hourlyWage: double, hoursWorked: double)
+getHourlyWage(): double
+getHoursWorked(): double
+getGrossPay(): double
+getFedWithholding(): double
+getStateWithholding(): double
Salaried
-annualSalary: double
+Salaried()
+Salaried(annualSalary: double)
+getSalary(): double
+getGrossPay(): double
+getFedWithholding(): double
+getStateWithholding(): double