**Swift Programming – Fall 2017**

**READ CAREFULLY ENTIRE ASSIGNMENT DESCRIPTION**

**(see your instructor in case of questions or clarifications)**

The class diagram-1 shows **Payroll System** which you should develop as an assignment

There are some differences though:   
  
Class **Vehicle** is now a superclass of classes **Car** and **Motorcycle**;

Class **PartTime** is now a superclass of **CommissionBasedPartTime** and **FixedBasedPartTime**

**What to do:**

Refactor the original Payroll System available on Moodle to reflect this new class diagram. You should take the following into account:

1. Methods and Properties shown in the new class diagram MUST remain exactly as they are;
2. You are free to add new methods (polymorphic or not) and/or properties to ANY class(es);
3. You must create a swift protocol (**IPrintable**) containing one single method:

***func printMyData() -> String;***

1. Every class MUST adopt the IPrintable protocol and return a printable version of their properties;
2. You must add any properties and/or methods to the Classes Car and Motorcycle (at least 2 properties per class).
3. You MUST use Swift “Set” and/or “Get” to expose ONLY what needs to be exposed by each class (hint: all properties MUST be private and accessed only via swift Get and Set methods.
4. You must consider that classes Employee, Vehicle and PartTime are ABSTRACT classes
5. In order to test the output, you must create at least 2 objects of each non\_abstract class
6. You are free to design how your system will print each object’s data if every single data is printed out.

**Sample of valid output:**

Name: John

Year of Birth: 1997

Employee has a Motorcycle

* Make
* Plate
* Additional Attribute 1
* Additional Attribute 2

Employee is PartTime / Commissioned

* Rate: 30
* HoursWorked: 10
* Commission: 20%
* Earnings: 360.00 (300 + 20% of 300)

Name: Cindy

Year of Birth: 1979

Employee has a Car

* Make
* Plate
* Additional Attribute 1
* Additional Attribute 2

Employee is PartTime / Fixed Amt

* Rate: 30
* HoursWorked: 10
* Fixed Amt: 40.00
* Earnings: 340.00 (300 + 40.00)

Name: Matthew

Year of Birth: 1995

Employee has no Vehicle registered

Employee is Intern

* SchoolName: Sheridan College
* Earnings: 1,000

TOTAL PAYROLL: 1,700 Canadian Dollars

You are free to assume anything if it does not violate requirements 1 to 9 above. Provide a ReadMe.txt file (explaining your assumptions) to be submitted along with a zipped version of your project  
  
  
  
  
  
  
  
  
  
Class Diagram (fig.1)

CommissionBasedPartTime

Name

Age

calcBirthYear { return 2017 – age }

calcEarnings {return 1000}

Is\_a

Is\_a

Is\_a

Is\_a

Is\_a

Is\_a

Is\_a

Has\_a

Make

Plate

FixedAmmount

calcEarnings {

return (rate \* hoursWorked) +  
 FixedAmount  
}

CommissionPerc

calcEarnings {

return (rate \* hoursWorked) +  
 commission  
}

Salary

Bonus

calcEarnings{  
 return salary +  
 bonus  
}

Rate

HoursWorked

SchoolName

FixedBasedPartTime

Employee

Motorcycle

Car

Intern

PartTime

FullTime

Vehicle