



Java Basics

Training Assignments

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RECORD OF CHANGES

No	Effective Date	Change Description	Reason	Reviewer	Approver
1.	01/Oct/2018	Create new	Draft	DieuNT1	VinhNV
2.	01/Jun/2019	Fsoft template	Update	DieuNT1	VinhNV

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	CODE:	JAVA.M.A301
	TYPE:	MEDIUM
	LOC:	200
	DURATION:	120 MINUTES

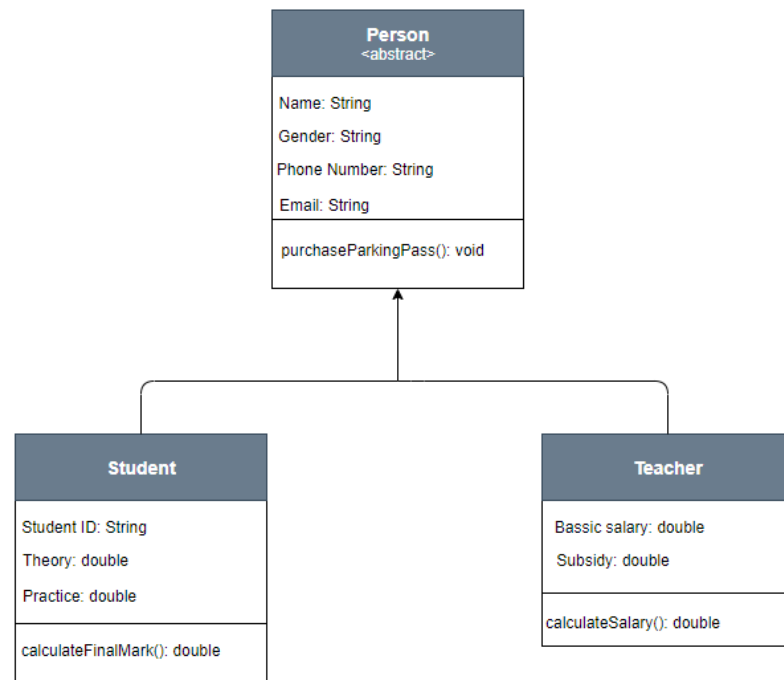
Day 4. Assignment 3: Advance OOP

Objectives:

- » Understand and practise with Classes, Objects, Inheritance, Encapsulation.
- » Understand and practise with Polymorphism, Abstraction.

Assignment Specifications:

For the class hierarchy is as follows, the trainee let's create the java classes install this class diagram to be able to relationship between it.



- » The **Person** is an abstract superclass and has four fields: *fullName*, *gender*, *phone*, *email*.
- » The **Student** is a concrete subclass of **Person** and adds 3 new fields: *studentId*, *theory*, *practice*. Provide **calculateFinalMark()** method to calculate the final mark of a student by an average of theory and practice.
- » The **Teacher** also is a concrete subclass of **Person** and adds two new fields: *basicSalary*, *subsidy*. Provide method **calculateSalary()** to calculate the teacher's salary by recipe:

Salary = Basic salary + Subsidy.

Business Rules:

- » *birthDate*: correct date format (dd/MM/yyyy).
- » *email*: correct email format.
- » *theory*, *pactice*: in the range from 0 to 10.

Problem Descriptions:

Create a class named **PersonManage** that contains the main method will be using the Person class and its subclasses allow selecting the functions as follows:

- a. **Input data from the keyboard**: create an array of 10 Person of all types as mentioned above.
- b. **Update student**: update student info by entering studentId.
- c. **Display teacher**: displays information about teachers, who has a salary higher than 1000\$.
- d. **Report**: display all students and their final mark, who qualify to pass the course (final mark >= 6).

Guidelines:

Create a project named **Java.M.A301**:

- Package ***fa.training.entities*** that contains **Person**, **Student** and **Teacher** class.
- Package ***fa.training.utils*** that contains **Validator** class for validation.
- Create a new package named ***fa.training.main*** contains **PersonManage** class.

--THE END--