Practical 6 – Week 6
Inheritance & Polymorphism

1. Download `Practical06.zip` (only available in week 6) from Blackboard. Unzip the file and import the project into your workspace. Amend the `PersonApp.java`, in package `q1`, to do the following:
   a) Create 3 student objects and 2 lecturer objects, using your own data.
   b) Store the objects into 1 `ArrayList`.
   c) Using a `for` loop, display the information of the student or lecturer on the screen. Refer to sample output in Practical 6 Question 1.
   d) Add a static method, `calAvgMark`, to take in an `ArrayList` of `Person` and return the average marks of the students.

2. The program, `PersonMain.java` in package `q2`, searches for the top student in the `ArrayList` of students. Walkthrough the codes and clarify any doubts with your tutors if necessary. Using the same approach, add another static method to search for the lecturer who earns the highest salary. You may use the data shown below:

Name	Nric	Staff Id	Total Teaching Hours
Phoon Lee Kien	1234567A	1234A	30
Andrea Tan	7654321B	5678B	40
Aloysius Thong	1122334C	1212C	20
Lim Soo Khim	7897890D	8899D	15

   Did you notice that the logic for `getTopStudent` and `getTopLecturer` is similar? Only the input data is different. In the next question, you will see the power of polymorphism which allows us to write flexible code to cater for similar situations.

3. In the package 3, write a Java interface, `Measurable`, with one abstract method, `getMeasure`, which returns a double. Amend the Student class and Lecturer class to implement the Measurable interface. The `getMeasure` method in the Student class will return the final marks of a student and that in the Lecturer class will return the computed salary of a lecturer.

   Compile all the programs and run the `InterfaceDemo.java` provided. Walkthrough the codes and clarify doubts with the tutor if necessary.

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