

## OBJECT ORIENTED PRINCIPLES.

### A02\_Part2: Encapsulation, Inheritance and Polymorphism.

On this second part of A02 a Java application covering the topics of encapsulation, inheritance and polymorphism is proposed.

- The folder **src** contains the code of the Java application.
  - o MyMain.java => This class tests the functionality of A02\_Part2. This class is provided completed, so you must not modify it.
  - o Language.java => This class models a language. You must complete this class.
  - o ProgrammingLanguage.java => This class models a specific type of language, a programming language.. You must complete this class.
  - o ProgrammingLanguage.java => This class models a specific type of programming language, an Object Oriented Programming-based language. You must complete this class.
  - o CompanySoftwareProject.java => This class models a company software project. You must complete this class.
- The folder **javadoc** contains the documentation of the Java application.
  - o MyMain.html => This file contains the description of the class MyMain.java.
  - o Language.html => This file contains the description of the class Language.java. Use this file to guide you in completing the code of the file Language.java.
  - o ProgrammingLanguage.html => This file contains the description of the class ProgrammingLanguage.java. Use this file to guide you in completing the code of the file ProgrammingLanguage.java.
  - o OOPLanguage.html => This file contains the description of the class OOPLanguage.java. Use this file to guide you in completing the code of the file OOPLanguage.java.
  - o CompanySoftwareProject.html => This file contains the description of the class CompanySoftwareProject.java. Use this file to guide you in completing the code of the file CompanySoftwareProject.java.
- The folder **results** contains the expected results of the Java application.
  - o result\_option\_1.txt => This file contains the output obtained from running the lecturer's solution when using <option = 1> in the main method of MyMain.java. That is, when the Java application is used to test the functionality of the class Language.
  - o result\_option\_2.txt => This file contains the output obtained from running the lecturer's solution when using <option = 2> in the main method of MyMain.java. That is, when the Java application is used to test the functionality of the class ProgrammingLanguage.

- result\_option\_3.txt => This file contains the output obtained from running the lecturer's solution when using <option = 3> in the main method of MyMain.java. That is, when the Java application is used to test the functionality of the class OOPLanguage.
- result\_option\_4.txt => This file contains the output obtained from running the lecturer's solution when using <option = 4> in the main method of MyMain.java. That is, when the Java application is used to test the functionality of the class CompanySoftwareProject.

**Actions:**

1. Complete the classes Language.java, ProgrammingLanguage.java, OOPLanguage.java and CompanySoftwareProject.java.  
The classes must follow the description given by the Javadoc files Language.html, ProgrammingLanguage.html, OOPLanguage.html and CompanySoftwareProject.html.

**Submission Details:**

- Submit the folder scr with the completed Java classes to Canvas before Sunday 13<sup>th</sup> of November, 11.59pm.
- Please ensure your code matches the expected output provided in results.txt (see rubric below).

**Rubric:**

- Fields => 2 marks.
- Constructors => 3 marks.
- get methods => 2 marks.
- set methods => 2 marks.
- computeSalary methods => 5 marks.
- computeProjectCost method => 1 mark.