



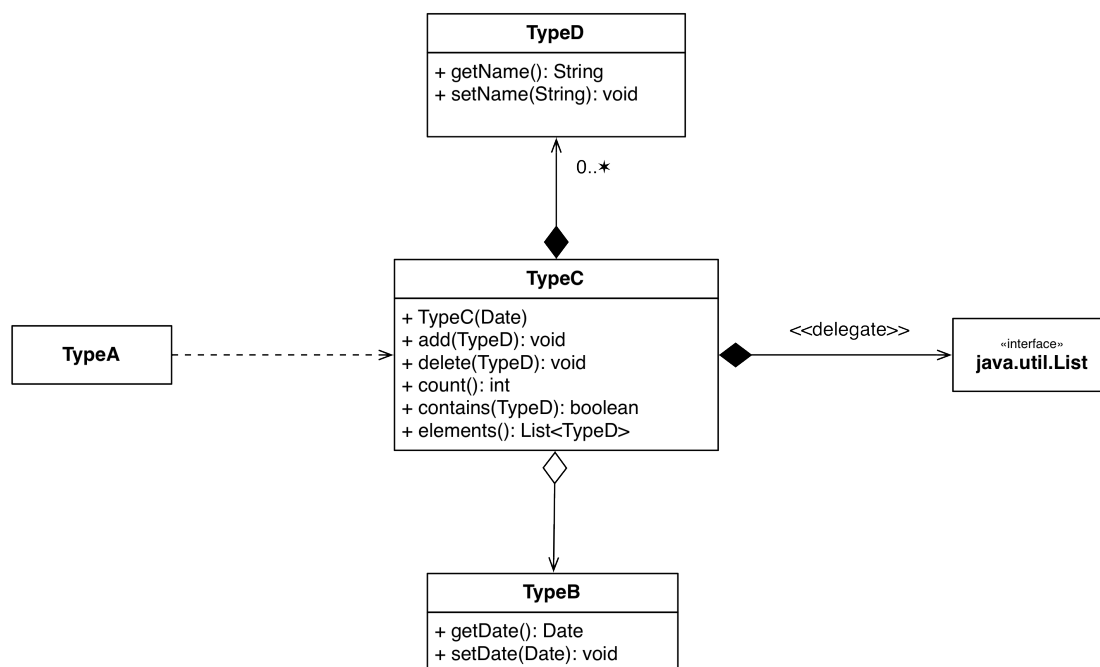
GALWAY-MAYO INSTITUTE OF TECHNOLOGY

Department of Computing & Mathematics

Assessment I: Encapsulation, Delegation & Composition (25%)

Please read the following instructions carefully before starting the assessment. When you have completed the assessment, create a Zip archive of the Java source file (*.java) called `<id>.zip`, where `<id>` is your student number. To submit your assessment, you must log-in to Moodle and click on the “*Assessment I (25%) Upload Solution*” hyperlink. Note that late submission WILL be penalized. Any assessments submitted more than 15 minutes late will be rejected.

The following UML diagram shows the names and relationships of a set of classes in an application.



You are required to implement the design shown in the UML diagram as a set of Java classes. Please note the following:

- Use the package `ie.gmit.computing` for all classes.
- The `main()` method of **TypeA** should create an instance of **TypeC** and exercise all of its methods.
- The **TypeB**, **TypeC** and **TypeD** classes should override the method `finalize()` and output the ID of the object about to be garbage collected.
- The methods exposed by **TypeC** are delegate methods to an instance of `java.util.List` that is used to store encapsulated instances of **TypeD**.
- The instances of **TypeD** passed to the `add()` method of **TypeC** should be fully encapsulated.