

Developer Hiring Exam

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303 Wyman Street Suite 300

Waltham, Massachusetts

ZIP Code: 02451

Phone: +1 (508) 455 - 5000

www.teracode.com

General Notes

The code does not need to compile, code just what is necessary for us to understand the relationships and communication between objects.

All code must be delivered in Java and assume that the user will not always input the correct information.

Requested diagrams can be done on paper and attached as pictures.

Exercise One

Create a domain model implementing the concepts of hierarchy, having as example a school's structure where we find different types of people.

Examples of possible entities are: Principal, Employee, Student and Janitor. Try to implement the concepts of Abstract class and Interface.

Having this model created:

- A) Implement a method that returns a list of all students grouped by the first letter of their last name.
- B) Implement a method that returns a list of students taking a subject. Consider that a same student cannot be signed to a subject more than once, use the necessary Java utilities and methods to provide this list.
- C) Create different database structure diagrams with the possible implementations of the created domain.
- D) Consider that I want to query all the people in the database and the engine is taking too long to respond. Which are the possible solutions? How would you determine the problem?
- E) I want to query all the students which ages are between 19 and 22. How would you optimize this query?
- F) I want to delegate the saving process to the database engine instead of having it on the application side, which database utility would you use?

Exercise Two

Create the domain model of a conference room schedule where meetings are booked. Bookings should contain a list of participants and only the organizer can modify them.

Incorporate all attributes and methods you consider needed for each domain entity.

Have into account that bookings cannot overlap and cannot last less than 15 minutes and no longer than 3 hours.

Create a diagram of how the user interface would look like and how a booking flow should be.