Assignment 2: Developing Your System

Deadline: 23:59 pm, May 31, 2024

Now, based on your design in Assignment 1, try to realize these classes in Java. The following requirements should be fulfilled:

1. **Abstract Class**: Add at least one abstract class in your design to reflect the abstraction and inheritance relationships of object-oriented design.

2. **Use of Object Class**: Your classes should have the "**toString()**" and "**equals()**" methods. Override the "**toString()**" method to return the string representation of objects, and override the "**equals()**" method to compare the content of two objects for the equality test.

3. **Use of Collocation**: Utilize Java collection classes, like ArrayList, to store and manipulate data in your system.

4. **Use of Interfaces**: Design and implement at least one interface to ensure code flexibility and extensibility. Here, you can use Lambda Expression.

5. **Exception Handling**: Include the necessary exception handling mechanisms in the program to ensure graceful handling of possible exceptions, thereby improving the stability and reliability of the program.

6. **Test Cases**: Write adequate test cases to cover major functionalities and boundary cases to ensure the correctness and stability of the program. You can either add a separate test class with a main method or add a main method in each class.

Note:

Please be sure to follow the Java coding conventions, including naming conventions, indentation, etc.

The submitted assignment file should contain the complete source code and relevant test cases. You'd better use Java 21.

What you need to submit: Package the assignment as a zip file and name it with your ID and name, e.g., "123456-Harry-asg2.zip".

Submission guideline: You should submit the zip file via email to our TA **Mr. Mai Sun (** *mai.sun@mail.nwpu.edu.cn* **)** before the deadline.