

1. Create a bean Calculator for doing the arithmetic operations like Add, Subtract, Divide and Calculate. The methods must be overloaded to perform operations on all different data types. The methods are as mentioned below:

- a. `int add(int num1, int num2)`
- b. `double add(double num1, double num2)`
- c. `String add(String str1, String str2)`
- d. `int subtract(int num1, int num2)`
- e. `double subtract(double num1, double num2)`
- f. `int multiply(int num1, int num2)`
- g. `double multiply(double num1, double num2)`
- h. `int divide(int num1, int num2)` throws `ArithmeticException`
- i. `double divide(double num1, double num2)`

Create Pointcuts for all 4 operations and implement logging using spring AOP. The log must maintain the values passed to the methods.

1. Implement `AfterAdvice` for `add()` methods.
 2. Implement `BeforeAdvice` for `subtract()` methods
 3. `AfterReturningAdvice` for `multiply()` methods
 - a. The logger logs the return value as well
 4. `AfterThrowingAdvice` for `divide()` method which throws `ArithmeticException`
 - a. The logger logs the Error occurred and the reason for the same.
2. Implement Logger with the help of Spring AOP in the application developed during Day 3 as mentioned below:
- a. Use `AroundAdvice` while registering a customer. If the age of the customer is less than 21 years, the customer must not get registered, and the control of the program returns from the advice back to the calling method. If age is greater than or equal to 21 years, the customer gets registered.
 - b. Use `BeforeAdvice` while printing the list of all the customers.
 - c. Use `AfterAdvice` while updating existing customer record.
 - d. Use `AfterThrowingAdvice` while searching a particular customer by giving a `customerId`. If the customer is not available, the thrown exception along with the customer Id must be maintained in the log file.
 - e. Use `AfterReturnAdvice` in the same method. The returned customer's id must be maintained in the log file.
 - f. Use All the 5 advices while calling `getCustomerByName()` method.

Important Points:

1. Implement log4j framework.
2. Log must be maintained in a log file and maintain the date and time of the method execution.
3. Make the same application using both Annotations and XML AOP configuration.