Programming Basics – live exercises

Methods

Task 1: Simple methods

Define a method that adds three numbers and then returns the square of the sum.

Task 2: Methods and control structures

a) Define a method `sop` that types System.out.println for you. `sop` expects a String as input and has no return value.

b) Define a method `compoundInterest`, which returns the interest income at a constant interest rate (z = startingBalance * (1+basicInterestRate/100)^investmentYears) and returns the final capital.

c) Populate the `main` method: declare suitable arguments for the starting balance, the investment period in years and the basic interest rate. Call the function `compoundInterest` with the input parameters, and output the result on the screen (using `sop`).

d) Define a method `compoundInterestWithInterestRise`, which calculates the interest income with an annually rising interest rate and returns the final capital. The calculation could look something like this:

z = (K * (p+100%)) / 100%

e) In main, call the function `compoundInterestWithInterestRise` and output the result on the screen (using `sop`).

Task 3: Naming confusion

Consider the following programme. Which values are output at (1), (2) and (3)?

```
public class Names {
	public static void method1(double a, double b) {
		System.out.println(a / b);
	}

	public static void method2(double c, double d) {
		int b = 10;
		System.out.println(c / b);
	}
```

```
      public static void main(String[] args) {
            int a = 4, b = 10, c = 5;
            method1(a, b);  // (1)
            method1(10, a);  // (2)
            method2(b, c);  // (3)
      }
}
```