

In-class Test 1

MSC/ICY SOFTWARE WORKSHOP 1

Assessed In-class Test: 10% of the continuous assessment mark.

Submission: Friday, 1 November 2013, 10:45 hours
No late submission

Usual examination conditions apply. You may not use any material during this in-class test.

Exercise 1: (Basic, 30%)

What does the following program fragment print exactly for the three different values, `x == 1`, `x == -1`, and `x == 0`?

```
if (x > 0) {  
    System.out.println("1");  
}  
if (x <= 0) {  
    System.out.println("2");  
}  
if (x == 0) {  
    System.out.println("3");  
}
```

<code>x == 1</code>	
<code>x == -1</code>	
<code>x == 0</code>	

Exercise 2: (Medium, 40%)

A `Company` is characterized by its `name`, its `address`, and its `products`. Assume a class `Product` to be given.

Write the following parts of the class `Company`:

(a) field variables (with appropriate types and `public/private` modifiers):

(b) `getter` for `name`:

(c) A method `addProduct` for adding a new product to the product list of the company:

(d) A `toString` method, listing the name, the address, and the products:

Exercise 3: (Advanced, 30%)

The following program fragment is given:

```
int n = 10;
int i = n;
result = 1;
while (i > 0) {
    result = result * i;
    i--;
}
```

- (a) What does the loop do? Why?

- (b) What is the loop invariant? Why?

- (c) For which values of **n** (in **int**) does the loop terminate? Why?