

Wednesday Sept. 20

Guest Lecture 2

When does a test method succeed?
@Test

- No exceptions thrown
- No assertions failures } Success

Otherwise (exception or assertion failure) } failure

For utility classes, where everything is static, the order in which you run the test methods matters.

Visualizing a UC

test Increment Twice

increment 0 → 1

1 → 2

test Increment Once

↳ starting value of counter is no longer 0 → (2)

Counter	
MIN	0
MAX	3
value	0 1 2

Test for abnormal scenario

@Test

```
void testDecFromZero() {
```

```
try {
```

```
    counter.value = MIN;
```

expect
IAE
thrown

```
    counter.decrement();
```

```
    fail("IAE not thrown") ← IAE not thrown  
                                → fail
```

```
    catch (IAE e) {
```

```
        * IAE thrown as expected, do nothing */
```

```
    }
```

breakpoints

debugger

↳ put program execution
in slow motion
so you can examine
variables in intermediate
steps.

class vs. object
template instance

```
class Point {  
    int x;  
    int y;  
}
```

template:
every Point instance must have x and y.

```
class PointApp {  
    main(...) {  
  
        Point p1 = new Point  
                    (2, 3);  
  
        Point p2 = new Point  
                    (3, 4);  
  
    }  
}
```

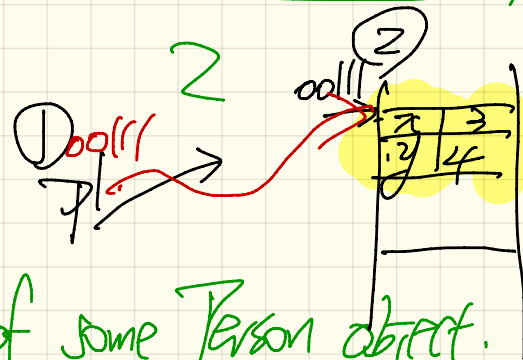
$\text{Point } p1 = \text{new Point}(3, 4);$

1 3

① Declare a variable $p1$.
 $p1$ can store the address of some Person object.

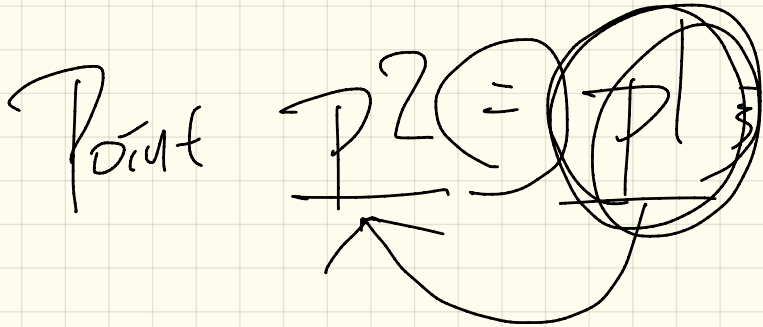
② Allocate space in memory and create a
 Point with $x == 3, y == 4$.

③ Store the address of the new Point object in $p1$.



Point p1 = new Point(2, 3);

Point p2 = p1

A diagram illustrating pointer assignment. The text "Point p2 = p1" is written. Below "p2" is a horizontal line. Below "p1" is a horizontal line. A curved arrow points from the line under "p1" to the line under "p2". The "p1" in the original text is circled.

aliasing

