

# Static

## Methods, Attributes

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Lecture #2 out of 10

90 minutes

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## Theory

Chapter #1:

Theory

## What static methods are for?

```
1 class Circle {  
2     public float radius;  
3 }  
4 class GeometryUtils {  
5     static float calcSquare(Circle c) {  
6         return c.radius * c.radius * 3.14;  
7     }  
8 }
```

```
1 class Circle {  
2     public float radius;  
3     float square() {  
4         return radius * radius * 3.14;  
5     }  
6 }
```

Most notable Java examples: FileUtils, IOUtils, and StringUtils from Apache Commons; Files from JDK7; Iterators from Google Guava.

## What's wrong with “Utils”?

- 1) They are unbreakable dependencies
- 2) They are eager, not lazy
- 3) They are not cohesive

[ Purpose Problems [Coupling](#) Eagerness Cohesion ]

## Tight Coupling

```
1 void paintIt(Circle c) {  
2     float s = GeometryUtils.calcSquare(c);  
3     float p = s * 5.55;  
4     // paint it using the "p"  
5 }
```

```
1 void paintIt(Circle c) {  
2     float s = c.square();  
3     float p = s * 5.55;  
4     // paint it using the "p"  
5 }
```

Which snippet is easier to test? Try to write a test for the first one, expecting `s` to be equal to `42.0`.

[ Purpose Problems Coupling [Eagerness](#) Cohesion ]

Imperative, not Declarative

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Low Cohesion