

# Bli av med buggar du inte visste att du hade!

Introduktion till egenskapsbaserad testning

# Agenda



Problem



Solution



Inspiration





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Follow



A QA engineer walks into a bar. Orders a beer. Orders 0 beers. Orders 999999999999 beers. Orders a lizard. Orders -1 beers. Orders a ueicbksjdhd.

First real customer walks in and asks where the bathroom is. The bar bursts into flames, killing everyone.

1:21 PM - 30 Nov 2018

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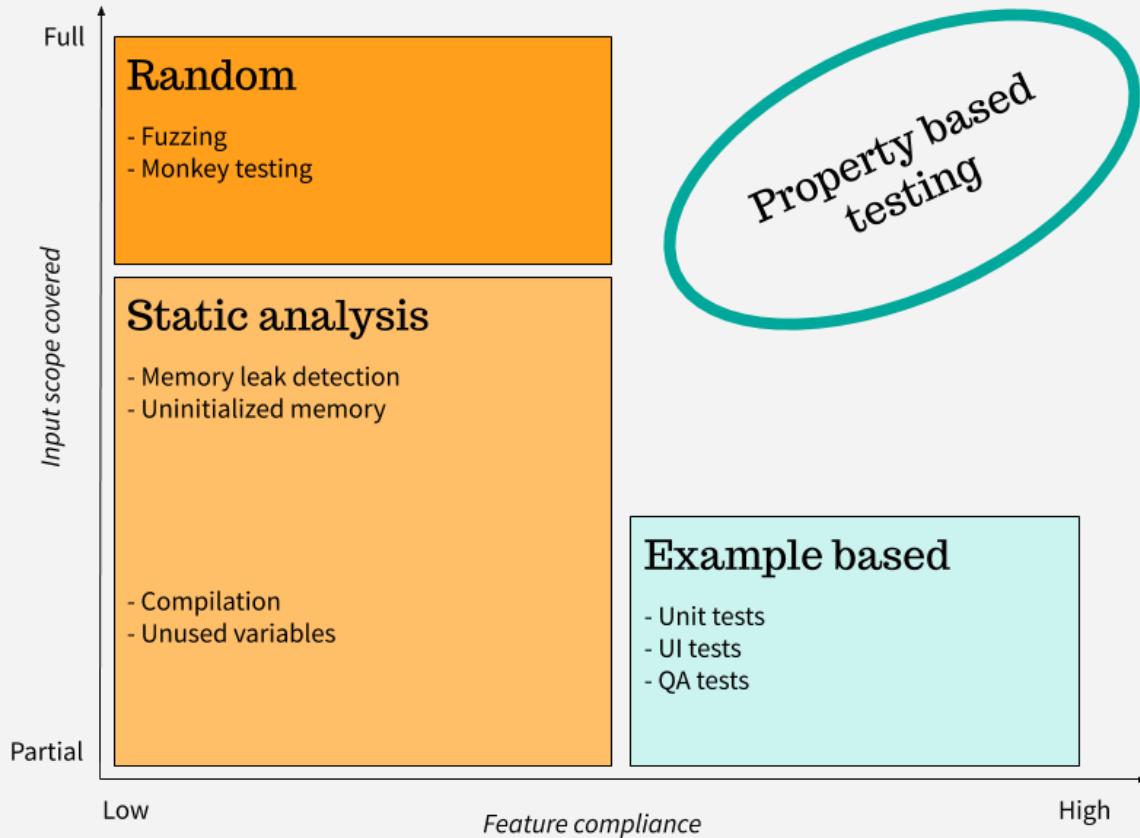
25,423 Retweets 63,258 Likes



477

25K

63K





```
@Test  
sortEmptyList() {  
    test sort(empty()) == empty()  
}
```

```
@Test  
sortList() {  
    test sort(1, 3, 2) == (1, 2, 3)  
}
```

```
@Test  
public void toolsAreSortedFromSmallestToLargest() {  
    qt()  
        .withExamples(100)  
        .forAll(listGenerator(50)) // Returns lists of size 0-50  
        .check(toolsList -> {  
            Collections.sort(toolsList);  
            return isInOrder(toolsList, smallestFirst());  
        });  
}
```

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    .withExamples(100)  
    .forAll(listGenerator(50)) // Returns lists of size 0-50  
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# Generators



A close-up photograph of a vast pile of yellow LEGO minifigure heads. The heads are densely packed, creating a textured, yellowish-orange surface. Each head has a unique black-and-white printed face, such as smiling faces, sad faces, and neutral expressions. The perspective is from above, looking down into the crowd of faces.

# Generators

Lists

A close-up photograph of a vast pile of yellow LEGO minifigure heads. The heads are densely packed, creating a textured, yellowish-orange surface. Each head has a unique black-and-white printed face, ranging from simple expressions like smiley faces and neutral looks to more complex ones like sad faces and faces with accessories. The lighting is bright, highlighting the smooth plastic material of the heads.

# Generators

Lists

Numbers

all()

allPositive()

between(min, max)



# Generators

Lists

Numbers

Strings

`allPossible()`

`ascii()`

`basicLatin()`



# Generators

Lists

Numbers

Strings

`allPossible()`

`ascii()`

`basicLatin()`

`ofLength(len)`

`lengthBetween(min, max)`

`ofCharPoints(min, max)`

A close-up photograph of a vast pile of yellow LEGO minifigure heads. The heads are densely packed, creating a textured, yellowish-orange surface. Each head has a unique black-and-white printed face, such as smiling faces, sad faces, and neutral expressions. The perspective is from above, looking down into the pile.

# Generators

Lists  
Numbers  
Strings  
Custom state

# Generators

Custom state

State that depends on other state

Set up services

Mocking



# Shrinking





*When your phone is locked, try to take a picture and paste ~200 characters to the password field that is shown. The app crashes and you suddenly have full access to the phone.*



*Android 5.1*



*Press play when repeat mode is on. Any new songs added to the playlist will be ignored.*

*Spotify iOS and Android clients*

C	theft
C++	CppQuickCheck
Clojure	test.check
Coq	QuickChick
F#	FsCheck
Go	gopter
Haskell	Hedgehog/QuickCheck
Java	QuickTheories
JavaScript	jsverify
PHP	Eris
Python	Hypothesis
Ruby	Rantly
Rust	Quickcheck
Scala	ScalaCheck
Swift	Swiftcheck