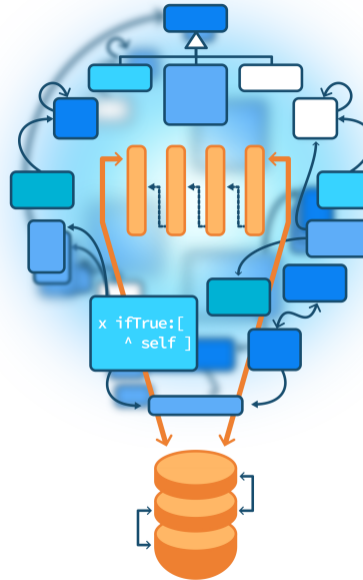


# Parametrized Tests

Getting more tests out of test cases

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# Goals

- How to **reuse** test logic with specific value sets?
- How can we run tests with **all** possible combinations?
- Use a naive example to stress the essence



# Problem one

```
MyDullTest >> testSum  
self assert: (2/3) + (1/3) equals: 1
```

- How to generalize it?
- How can we reuse test logic with specific values?



# Using a collection

```
MyDullTest >> testSum
```

```
{ {2 . 1 . 3} . {2/3 . 1/3 . 1} }
```

```
do: [ :each |
```

```
  self
```

```
    assert: each first + each second
```

```
    equals: each third ]
```

- What if I want to have **another** test **reusing** some or all these values?
- Not nice to have to duplicate the loop.



# Use a parametrized test

Inherit from `ParametrizedTestCase`, add instance variables, and setters.

```
ParametrizedTestCase << #MyDullTest  
  slots: { #number1 . #number2 . #result}
```

Use instance variables:

```
MyDullTest >> testSum  
  self assert: number1 + number2 equals: result
```



# Declare cases

```
MyTest class >> testParameters
```

```
  ^ ParametrizedTestMatrix new
```

```
    addCase: { #number1 -> 2. #number2 -> 1.0. #result -> 3 };
```

```
    addCase: { #number1 -> (2/3). #number2 -> (1/3). #result -> 1 };
```

```
    yourself
```



# Benefits

We can add new tests that use the variables

```
MyDullTest >> testSum  
self assert: result - number2 equals: number1
```

We can execute tests

- with a specific configuration
- add a new configuration



## Problem two

Imagine we have a test and we would like to apply it to other collections.

```
MyTest >> testAdd
```

```
| aCollection |
```

```
aCollection := Bag new.
```

```
aCollection add: 'a'.
```

```
self assert: (aCollection includes: 'a').
```

```
self assert: aCollection size equals: 1.
```





Introduce a setter for the class and use it.

```
MyTest >> testAdd
```

```
| aCollection |
```

```
aCollection := collectionClass new.
```

```
aCollection add: 'a'.
```

```
self assert: (aCollection includes: 'a').
```

```
self assert: aCollection size equals: 1.
```



# Inherit from ParametrizedTestCase

```
ParametrizedTestCase << #MyTest  
  slots: {#collectionClass};  
  package: 'MyTests'
```



# Declare test parameters

```
MyTest class >> testParameters
```

```
  ^ ParametrizedTestMatrix new  
  forSelector: #collectionClass  
  addOptions: { Set . Bag . OrderedCollection }
```

We run all the tests with Set, Bag, and OrderedCollection.



# We want more

We would like to have **different items** to add and to check with all the collections.



# Easy

Introduce an instance variable and setter for one item and use it.

```
ParametrizedTestCase << #MyTest  
  slots: { #collection . #item };  
  package: 'MyTests'
```

```
MyTest >> testAdd  
  
| aCollection |  
aCollection := collection class new.  
aCollection add: item.  
self assert: (aCollection includes: item).  
self assert: aCollection size equals: 1.
```



# Declare test parameters

```
MyTest class >> testParameters
```

```
  ^ ParametrizedTestMatrix new  
    forSelector: #item addOptions: { 1 . 'a' . $c };  
    forSelector: #collectionClass addOptions: { Set . Bag . OrderedCollection }
```

- collectionClass and item will take the values from the options
- Tests are then run with all possible combinations of item and collectionClass



# Conclusion

- Parametrized tests are handy
- You can get more tests out of your test case



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