

QuickCheck 2.4.2 Cheat Sheet

Model-Based Testing
DIT848/GU and TDA260/Chalmers

Running tests

- $quickCheck :: Testable\ prop \Rightarrow prop \rightarrow IO\ ()$

Tests a property and prints the results to *stdout*.

- $verboseCheck :: Testable\ prop \Rightarrow prop \rightarrow IO\ ()$

Tests a property and prints the results and all test cases generated to *stdout*.

Properties

- $(==>) :: Testable\ prop \Rightarrow Bool \rightarrow prop \rightarrow Property$

Implication for properties: The resulting property holds if the first argument is *False*, or if the given property holds.

- $forAll :: (Show\ a, Testable\ prop) \Rightarrow Gen\ a \rightarrow (a \rightarrow prop) \rightarrow Property$

Explicit universal quantification: uses an explicitly given test case generator.

- $expectFailure :: Testable\ prop \Rightarrow prop \rightarrow Property$

Modifies a property so that it is expected to fail for some test cases.

Generator combinators

- $choose :: Random\ a \Rightarrow (a, a) \rightarrow Gen\ a$

Generates a random element in the given inclusive range.

- $suchThat :: Gen\ a \rightarrow (a \rightarrow Bool) \rightarrow Gen\ a$

Generates a value that satisfies a predicate.

- $oneof :: [Gen\ a] \rightarrow Gen\ a$

Randomly uses one of the given generators. The input list must be non-empty.

- $frequency :: [(Int, Gen\ a)] \rightarrow Gen\ a$

Chooses one of the given generators, with a weighted random distribution. The input list must be non-empty.

- $elements :: [a] \rightarrow Gen\ a$

Generates one of the given values. The input list must be non-empty.

- $listOf :: Gen\ a \rightarrow Gen\ [a]$

Generates a list of random length. The maximum length depends on the size parameter.

- $listOf1 :: Gen\ a \rightarrow Gen\ [a]$

Generates a non-empty list of random length. The maximum length depends on the size parameter.

- $sample :: Show\ a \Rightarrow Gen\ a \rightarrow IO\ ()$

Generates some example values and prints them to *stdout*.