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Code coverage goal: 80% and no less!

by Alberto Savoia

I first posted this article a few years ago on the [Artima Developer](http://www.artima.com/weblogs/viewpost.jsp?thread=204677) [<http://www.artima.com/weblogs/viewpost.jsp?thread=204677>] website; but the question of what's adequate code coverage keeps coming up, so I thought it was time for a repost of [Testivus wisdom](http://www.scribd.com/doc/69769/TheWayOfTestivus) [<http://www.scribd.com/doc/69769/TheWayOfTestivus>] on the subject.

Testivus on Test Coverage

Early one morning, a young programmer asked the great master:

"I am ready to write some unit tests. What code coverage should I aim for?"

The great master replied:

"Don't worry about coverage, just write some good tests."

The young programmer smiled, bowed, and left.

Later that day, a second programmer asked the same question.

The great master pointed at a pot of boiling water and said:

"How many grains of rice should I put in that pot?"

The programmer, looking puzzled, replied:

"How can I possibly tell you? It depends on how many people you need to feed, how hungry they are, what other food you are serving, how much rice you have available, and so on."

"Exactly," said the great master.

The second programmer smiled, bowed, and left.

Toward the end of the day, a third programmer came and asked the same question about code coverage.

"Eighty percent and no less!" Replied the master in a stern voice, pounding his fist on the table.

The third programmer smiled, bowed, and left.

After this last reply, a young apprentice approached the great master:

“Great master, today I overheard you answer the same question about code coverage with three different answers. Why?”

The great master stood up from his chair:

“Come get some fresh tea with me and let’s talk about it.”

After they filled their cups with smoking hot green tea, the great master began:

“The first programmer is new and just getting started with testing. Right now he has a lot of code and no tests. He has a long way to go; focusing on code coverage at this time would be depressing and quite useless. He’s better off just getting used to writing and running some tests. He can worry about coverage later.

The second programmer, on the other hand, is quite experienced both at programming and testing. When I replied by asking her how many grains of rice I should put in a pot, I helped her realize that the amount of testing necessary depends on a number of factors, and she knows those factors better than I do – it’s her code after all. There is no single, simple, answer, and she’s smart enough to handle the truth and work with that.”

“I see,” said the young apprentice, *“but if there is no single simple answer, then why did you tell the third programmer ‘Eighty percent and no less’?”*

The great master laughed so hard and loud that his belly, evidence that he drank more than just green tea, flopped up and down.

“The third programmer wants only simple answers – even when there are no simple answers ... and then does not follow them anyway.”

The young apprentice and the grizzled great master finished drinking their tea in contemplative silence.

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