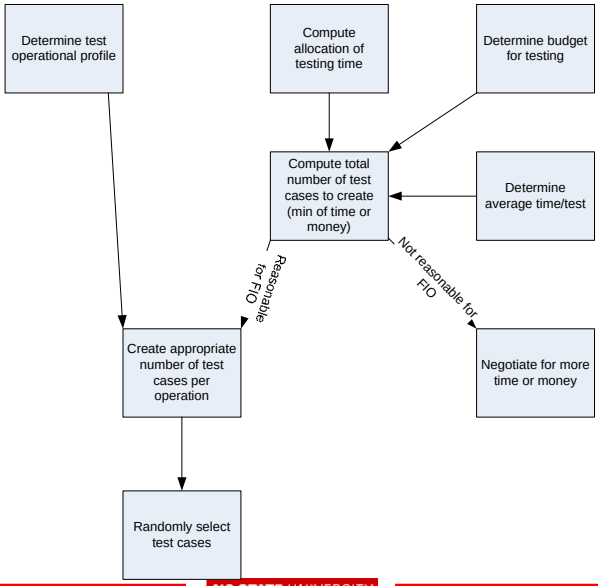
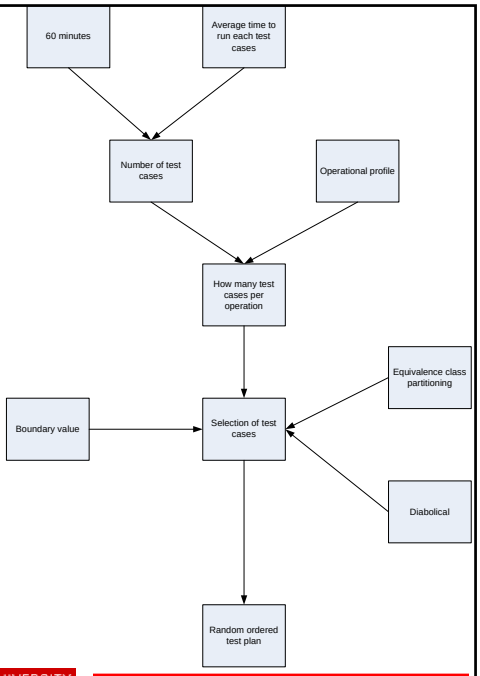
SRE Summary

- Determine operational profile [chapter 2]
  - Drives test case planning [and other resource planning]
- Determine failure intensity objective & choose strategies to meet that failure intensity objective [chapter 3]
  - Operational profile-driven "early" system test has a failure intensity reduction of about 8
- Determine how many test cases should be written & plan early system test according to this constraint and the operational profile [chapter 4]

Creating suite of tests [Chapter 4/5]



Final Load Test Plan



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Reliability models [Chapter 6]

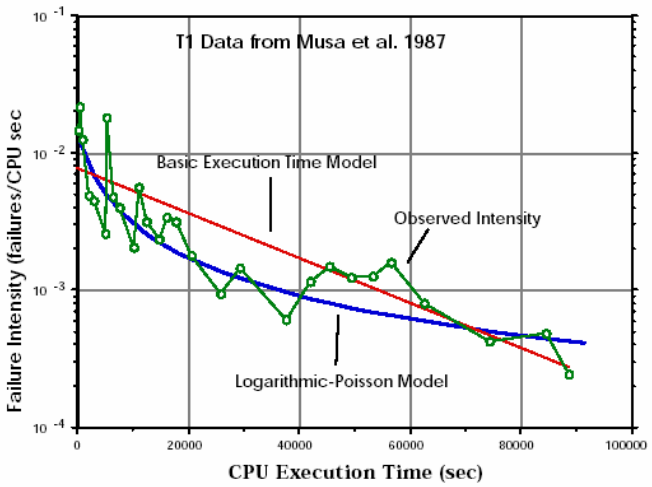

Figure 1. Empirical and modeled failure intensity.

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Figure from Vouk, M. Software Reliability Engineering, 2000 Annual Reliability and Maintainability Symposium

Key points from CASRE exercise

- There are models that underlie reliability prediction
  - Key is to understand the assumptions
  - Pick a model that is as simple as possible
  - Pick a model that is "mature" (has been validated via empirical studies)
  - Understanding the math behind the model not as important for practical use
- You need enough data to predict
- The best reliability model may change throughout system test
- Tracking the FI/FIO during test . . .
  - When to stop testing
  - Is the trend going in the wrong direction?

Tracking FI/FIO

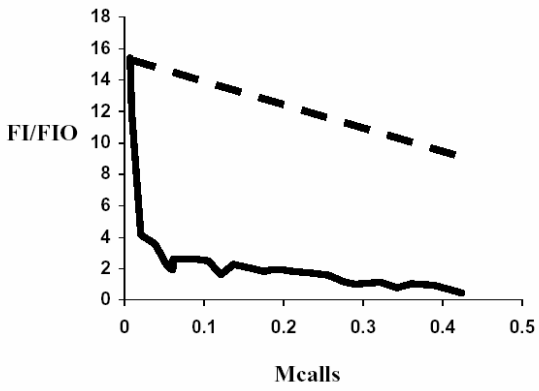

Figure 6.1 FI / FIO plot for Fone Follower

Sharp drop is typical when you drive test with the operational profile – invoke most frequently-used operations first and remove these faults efficiently.

Dotted line more typical of system test when all operations are tested with equal probability.