Benchmarks

The Benchmarks are a collection of standard tests designed to test a computer's performance. Some are designed to be stand-alone tests that attempt to thoroughly exercise the system. Others are intended to be run in conjunction with other tests. Some of the tests in Speedometer are variations of three commonly-used benchmarks: Whetstones, Dhrystones, and the Sieve of Eratosthenes. The rest of the tests are variations on the tests used in a collection of benchmarks called the Stanford Mix. Note that the results you get in Speedometer are really only valid when compared against results from Speedometer. Because of modifications necessaery to run the tests in the Speedometer environment, the tests are not excatly the same as the standard versions.

The results of the tests are presented in two ways. The first column - labelled ABS. - is the time in seconds the test took, or in the cases of KWhetstones and Dhrystones are the actual number of KWhetstones or Dhrystones per second your machine can do. The second column - labelled RAT. - is a ratio of the performance of your system vs. that of a standard Mac Classic. A Classic should score approximately 1.0 in all tests. Obviously, the higher the number you get, the better. The average presented is a straight average and can be taken as an indication of the overall performance of the system across a variety of uses.

Whetstones

The Whetstones test is designed to test the calculation abilities of your computer. It is a floating point test with a heavy emphasis on the transcendental functions. Unlike most of the other benchmarks in Speedometer, the results from this test are not measured in seconds, but in iterations per second. The number of KWhets/Sec is the main result, the number of seconds the test took is primarily for information's sake, and the ratio is provided to make it easy to compare results between two machines.

Dhrystones

The Dhrystones test is designed to test everything else about your system that the Whetstone test doesn't. It focuses heavily on string manipulations as a way of testing the speed with which your computer can access and move memory. Like the Whetstones test, the primary results of this test are presented as the number of iterations per second. Someone once said that the Dhrystones test does nothing, but it does it very well.

DEL

The Towers of Hanoi

This test is actually an example of recursion in action. It solves the famous Towers of Hanoi puzzle for a stack of 14 disks. It serves a simple test of

straight CPU horsepower.

Quicksort

This is a standard QSort algorithm operating on a randomized array of 5,000 elements. It is also a good general test of CPU performance.

Bubble Sort

This is a standard bubble sort of a randomized array of 5,000 elements. A Test of CPU performance. Also, a painfully slow way to sort a list.

The Queens Problem

This is the classic "Eight Queens Problem" solved 250 times. It is a straightforward CPU thrasher.

Puzzle

This is the Puzzle test from the Stanford Mix (a benchmark suite from Stanford University) rewritten for the Mac and using dynamically allocated memory. This test is computationally intensive with a lot of matrix manipulation and integer multiplies. Its performance is tied closely to the CPU's raw speed.

Permutations

This is a heavily recursive test, also from the Stanford Mix. It thrashes a 10x10 matrix by generating all its possible permutations. A good basic measure of CPU performance.

Fast Fourier Analysis

A "real-world" test. Fast Fourier Analysis is heavily recursive, and uses a LOT of floating point math. It is particularly heavy in addition, subtraction, and multiplication. It uses some transcendentals, but not so much as the Whetstones test.

Floating Point Matrix Multiply

This test multiplies two floating point matrices of 40x40 elements. It is a good test of floating point math combined with general CPU performance.

Integer Matrix Multiply

This test multiplies two integer matrices of 40x40 elements. It is a good test of integer math and general CPU performance.

The Sieve of Eratosthenes

This test is a standard benchmark in which a simple, repetetive algorithm is used to find the prime numbers up to 8,190. It is a straighforward exercise of the CPU and its integer math functions.