Small Model Sieve Program

The Sieve of Erosthostenes is a program that calculates

Prime numbers. It is a standard benchmark used to determine

the relative speed of different computers or the efficiency

of the code generated for the same computer by different

compilers.

The sieve algorithm was developed in ancient Greece and is

one of a number of methods used to find prime numbers.

The sieve works by a process of elimination using an array

that starts with 2 and keeps all the numbers in position.

The process is:

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

Starting after 2, eliminate all multiples of 2.

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

X X X X XX XX XX XX XX XX XX XX

Starting after 3, eliminate all multiples of 3.

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

X X X X X XX XX XX XX XX XX XX XX XX XX

Starting after 5, eliminate all multiples of 5.

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

X X X X X XX XX XX XX XX XX XX XX XX XX XX

Continue until the next remaining number is greater than

the square root of the largest number in the original series.

In this case, the next number, 7, is greater than the square

root of 25, so the process stops. The remaining numbers are all

prime!

The SIEVE program is available in different targets:

Simulator: Small Model: SIEVE example in SMALL model

for Simulation

Simulator: Large MOdel: SIEVE example in LARGE model

for Simulation