Practical Exercise

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1 Random numbers

A Using a linear congruential generator, produce a series of 1000 random numbers, where the random series is:

$$X_{i+1} = (a \cdot X_i + c) \mod m \tag{1}$$

where i=0,1,2,... and a=13, $m = 2^6$ and c=1. Calculate the series of random numbers for three seed values $X_0 = 1, 2$ and cpu-time. Convert the random numbers into a series between 0 and 1.

B Do a frequency analysis on the three series of numbers obtained.

C Write a program to calculate the period of the three different seeds.