PAMPI A01

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1 Amdahl scaling law

Amdahl law assumes scalable resources, so we only consider the points at process counts of 20,40,60, and 80

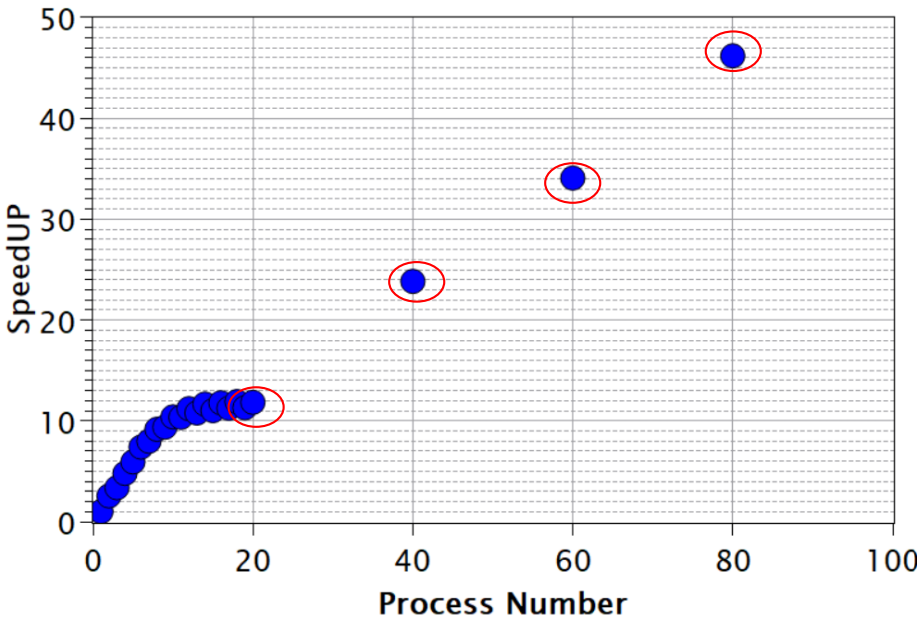

Figure 1: Image with shapes drawn on top.

$$S(N) = \frac{T(1)}{T(N)} = \frac{1}{1 + \frac{1-s}{N}} \tag{1}$$

we can observe that

$$S(N) \propto \frac{1}{T(N)} \tag{2}$$

process count	Speedup
20	12
40	24
60	34
80	46

Table 1: process count with respective speedup

resulting in

$$\frac{S(N)}{S(1)} = \frac{1}{s + \frac{1-s}{N}} \tag{3}$$

$$\frac{46}{12} = \frac{1}{s + \frac{1-s}{4}}$$

$$s = \frac{1}{69} = 1.44\%$$

the serial fraction is around 1.44%