

SOFTWARE EFFORT ESTIMATION

Boehm's equation

$$\text{effort} = c \times (\text{size})^k$$

Variables in Boehm's equation

Effort	measured in person months consisting of 152 working hours
Size	measured in thousands of delivered source code instructions (kdsi)
c and k	The constants, c and k, depended on whether the system could be classified, in Boehm's terms, as "organic", "semi-detached" or "embedded"

Please note: **c and k** are the COCOMO constant values, (also available in the prescribed textbook) and indicated in the table below. These relate to the technical nature of the system and the development environment.

System type	c	k
Organic	2.4	1.05
Semi-detached	3.0	1.12
Embedded	3.6	1.20

EXAMPLE

Five systems with the following estimated lines of code were identified. Identify which can be completed in less than three years.

System	Lines of code	System type
A	23557	Organic
B	18553	Organic
C	17014	Semi-detached
D	10572	Embedded
E	9568	Semi-detached

A	= $2.4 \times [(23557 \div 1000)^{1.05}]$	=	66.21208	person months \div 12	=	5.517673	Years
B	= $2.4 \times [(18553 \div 1000)^{1.05}]$	=	51.52833	person months \div 12	=	4.294027	Years
C	= $3.0 \times [(17014 \div 1000)^{1.12}]$	=	71.71738	person months \div 12	=	5.976448	Years
D	= $3.6 \times [(10572 \div 1000)^{1.20}]$	=	60.99456	person months \div 12	=	5.082880	Years
E	= $3.0 \times [(9568/1000)^{1.12}]$	=	37.63925	person months \div 12	=	3.136604	Years

None will be completed in less than three years.