

**From your reading of chapter 3 and your own knowledge from other sources, discuss the following:**

Some SW engineers believe that adding people to the late project makes it even later. Some schedule-estimation technique seems to indicate that adding people to a project can shorten development time. Is this a contradiction? Why or Why not?

Frederick Brooks, in his essay *The Mythical Man-Month*, made the following observation about why throwing more programmers at a project fails to reduce the amount of time it takes to complete it:

Men and months are interchangeable commodities only when a task can be partitioned among many workers *with no communication among them*. This is true of reaping wheat or picking cotton; it is not even approximately true of system programming.

When a task cannot be partitioned because of sequential constraints, the application of more effort has no effect on the schedule. The bearing of a child takes nine months, no matter how many women are assigned (Brooks, 1995).

This observation was made in 1975, when most coding was done procedurally, as opposed to an object-oriented fashion. The “nine women can’t make a baby in one month” metaphor works when only one coder can work on the project at time, but OOP allows for multiple programmers to work on numerous aspects of the application at once, first along the lines of dividing work up amongst persistence, business, and presentation layers, and secondly along the lines of constructing reusable objects within those layers.

Our textbook does make an important point that assigning two programmers to the same project does not equate to a 50 percent reduction in time to completion. More programmers means a more work for the project manager, and time is definitely lost to communication and coordination between programmers. While one programmer might have a strategy in his or her head of how all the objects will interact, two programmers have to coordinate and debate competing strategies and resolve their differing expectations in order for their code to synch.

In fact, should personality conflicts arise, adding more programmers to a project could definitely increase the time it takes to complete it.

Brooks, Jr., F.P. (1995) *The Mythical Man-Month: Essays on Software Engineering, 20th Anniversary Edition*. Reading, MA: Addison-Wesley.

<http://www.cs.tau.ac.il/~ohadbr/systems/spring2007/misc/mmm.pdf>