Asynchronní a paralellní programování v .NET(core)

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Sequential

Figure 1.2 Typical sequential coding involving a consecutive, progressively ordered execution of processes

Sequential

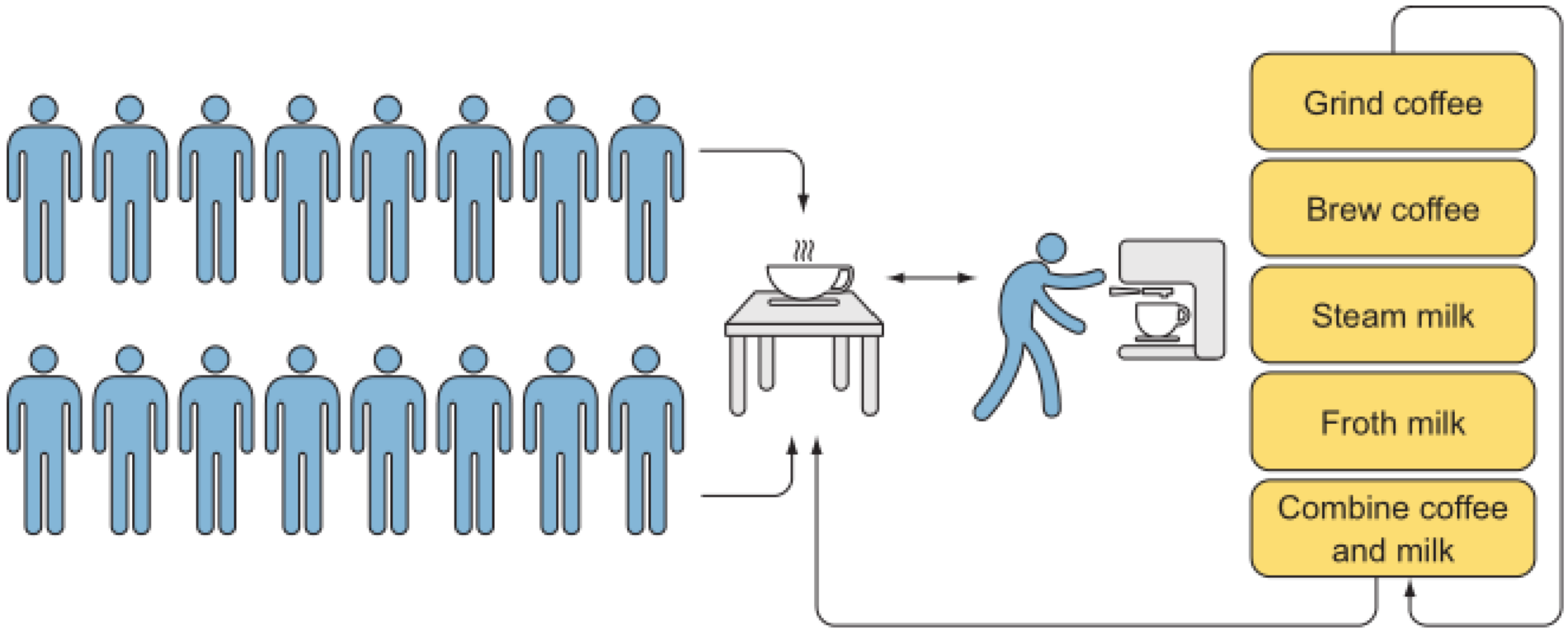

Figure 1.1 For each person in line, the barista is sequentially repeating the same set of instructions (grind coffee, brew coffee, steam milk, froth milk, and combine the coffee and the milk to make a cappuccino).

Concurrent

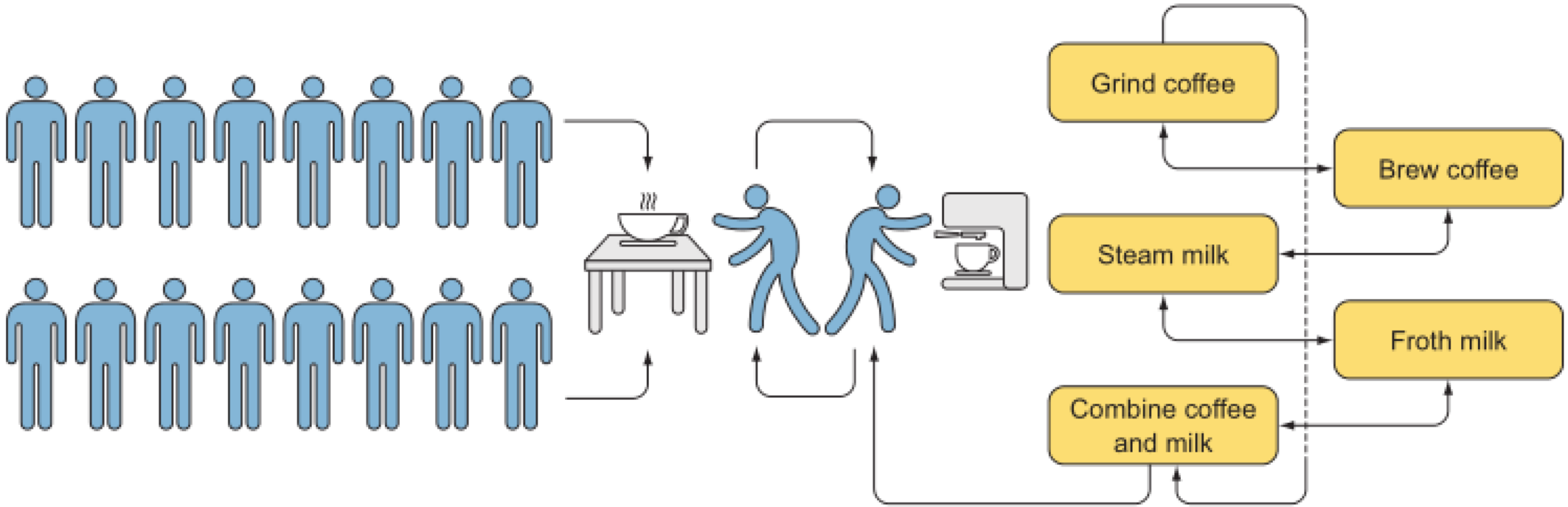

Figure 1.3 The barista switches between the operations (multitasking) of preparing the coffee (grind and brew) and preparing the milk (steam and froth). As a result, the barista executes segments of multiple tasks in an interleaved manner, giving the illusion of multitasking. But only one operation is executed at a time due to the sharing of common resources.

Parallel

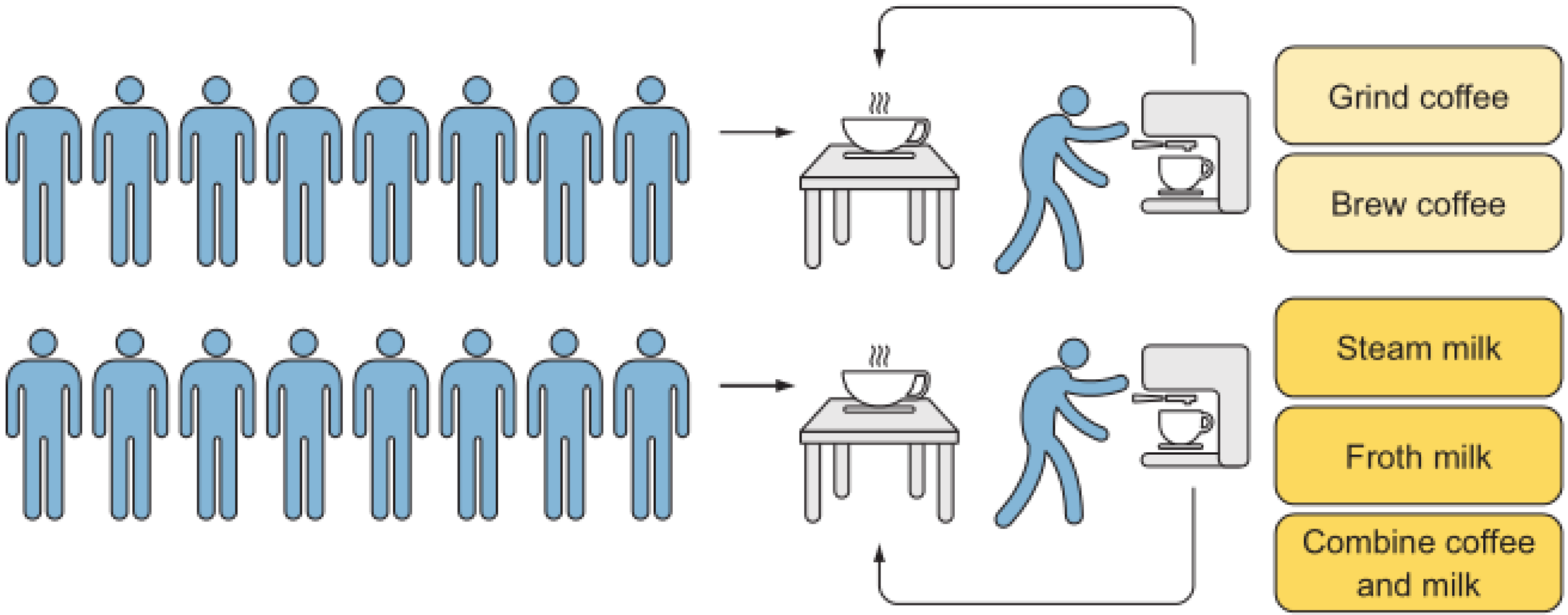

Figure 1.5 The production of cappuccinos is faster because two baristas can work in parallel with two coffee stations.

Parallel

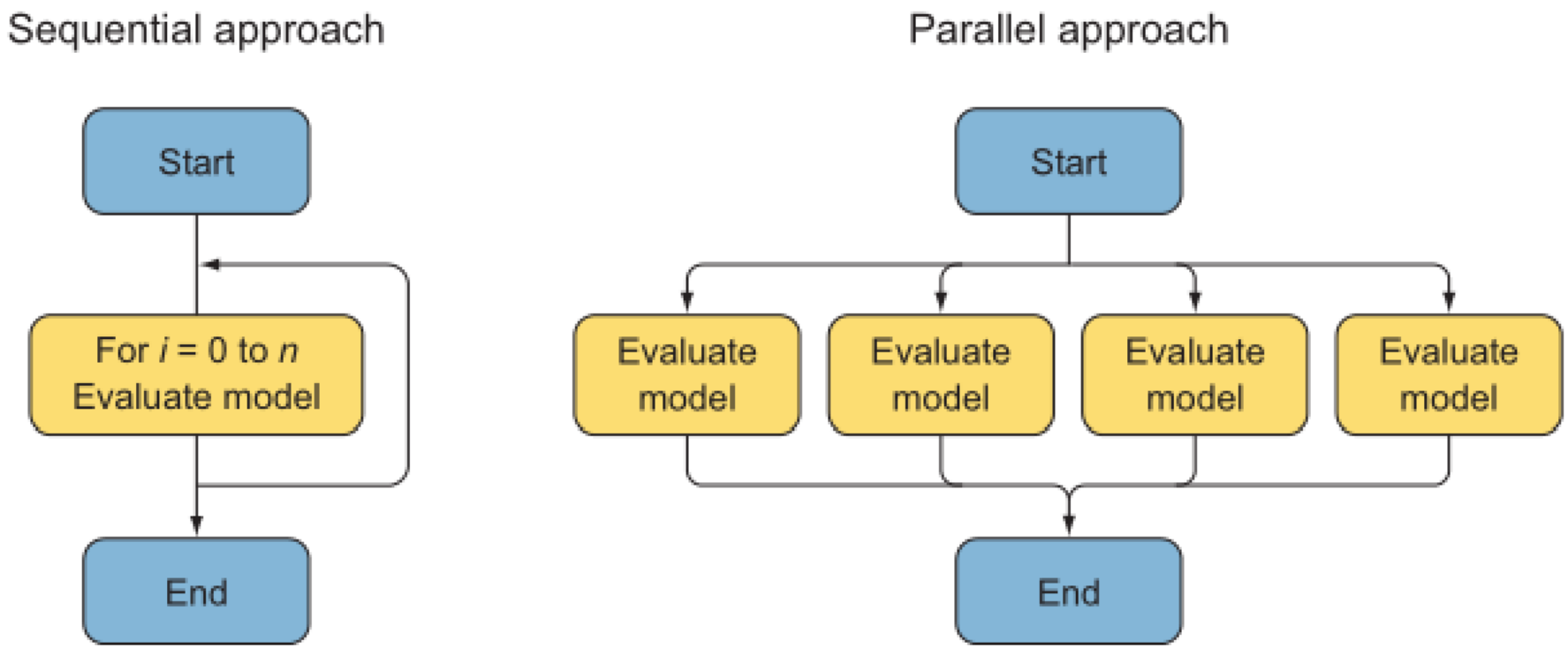

Figure 1.6 Parallel computing is a type of computation in which many calculations are carried out simultaneously, operating on the principle that large problems can often be divided into smaller ones, which are then solved at the same time.

Parallel Programming in .NET

Thread	**Task Parallel Library**
Parallel Extensions	**Parallel LINQ**

Asynchronous Programming in .NET

Traditional	Current
Threading (Low-level)	Task parallel library
Background worker (Event-based asynchronous pattern)	Async and await

Suited for I/O Operations

Disk

Memory

Web/API

Database