

Concurrency

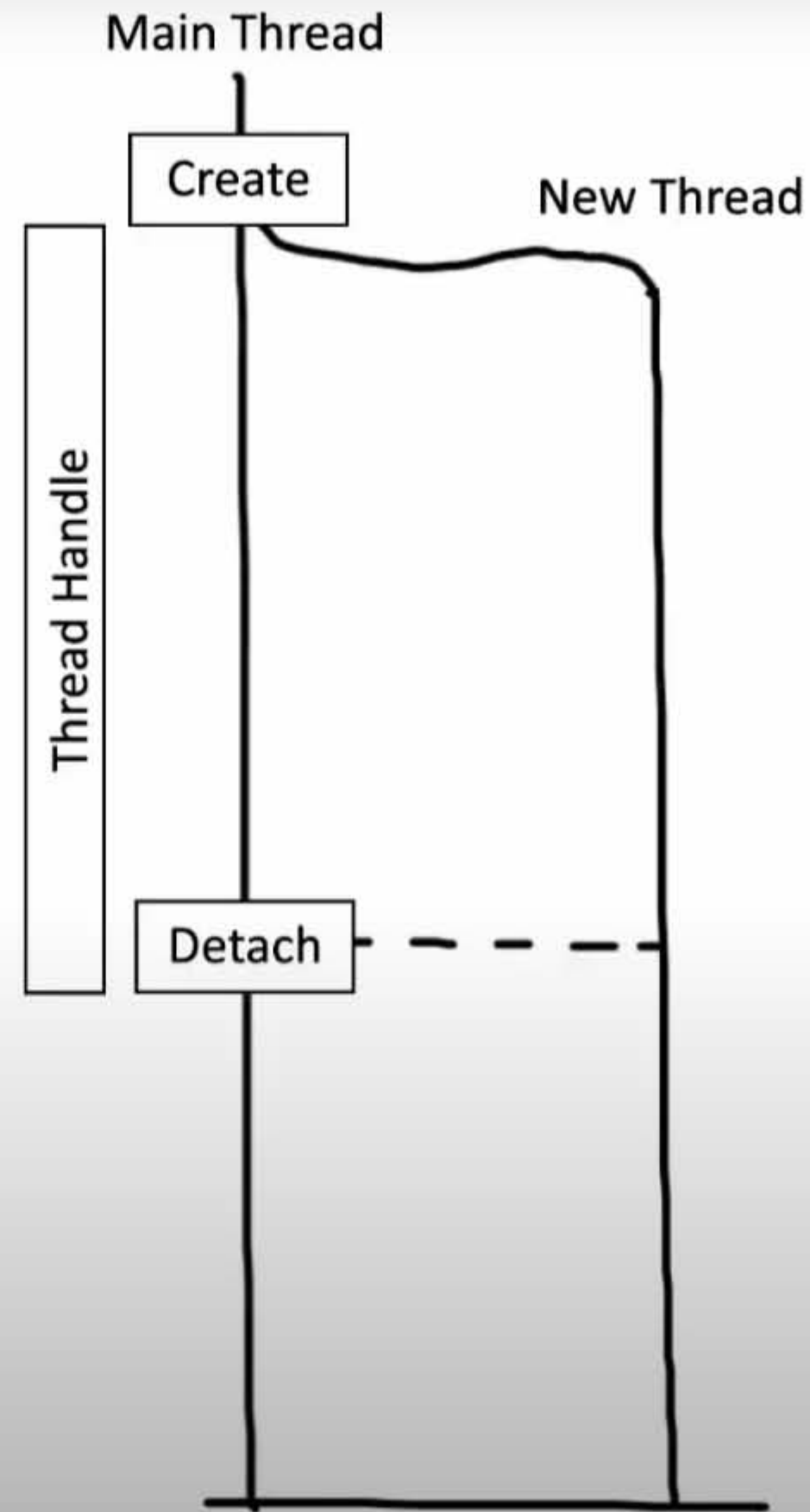
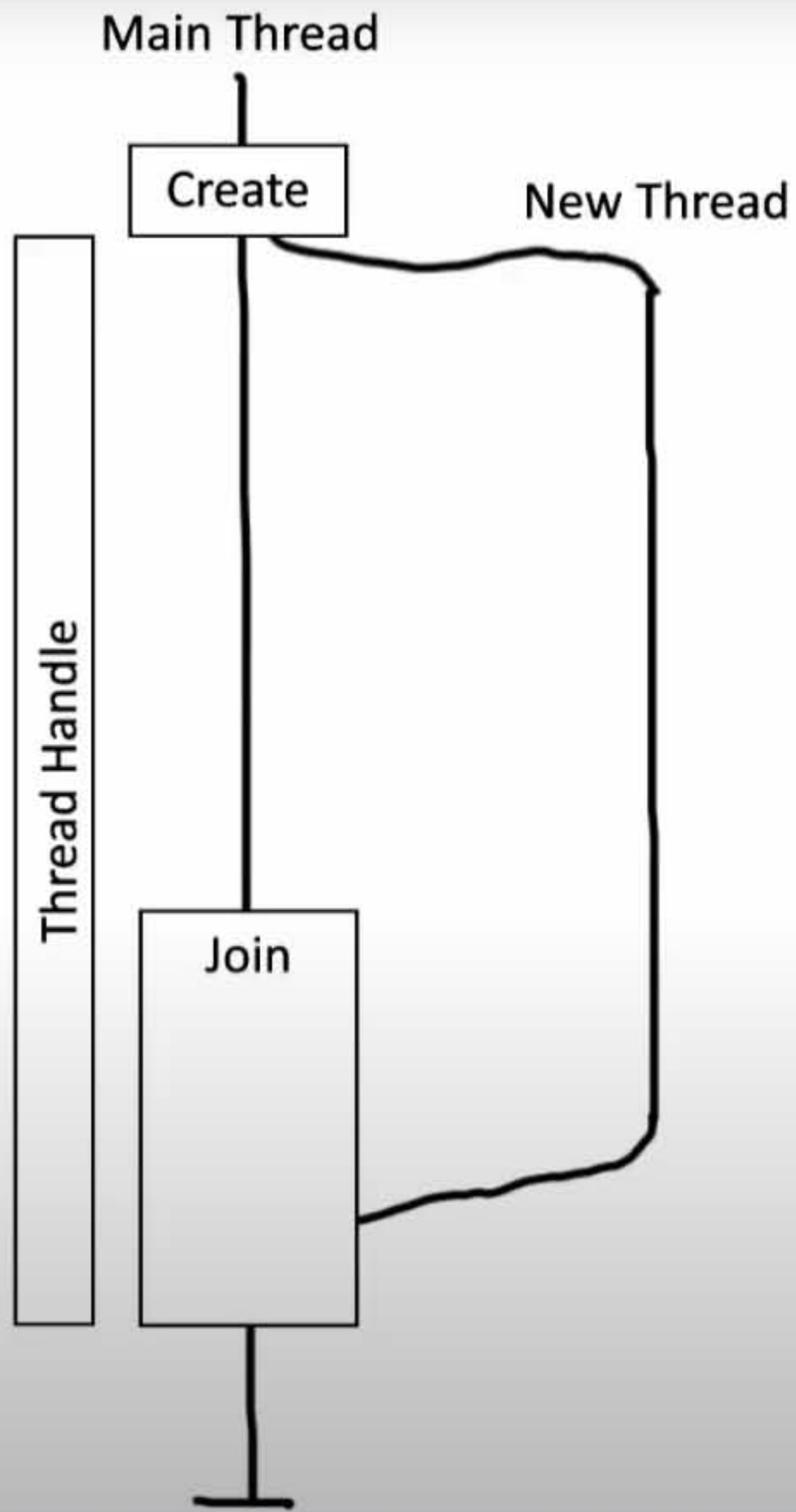


- For performance
 - Dividing a large amount of work into independent chunks to be run in parallel
- For responsiveness
 - Keep program responsive while long-running tasks are blocked in the background
- Asynchronous code
 - Runs in parallel
- Synchronous / Synchronized code
 - Runs in sequence

Threads



- A thread is an execution context.
- Each thread tracks its own
 - Path through the code
 - Stack memory for local variables
- All threads in a single program can access all of that program's memory



Other tools / topics

- `std::atomic`
- `std::mutex` & `std::lock_guard`
- Condition variables
- Thread-safe objects

