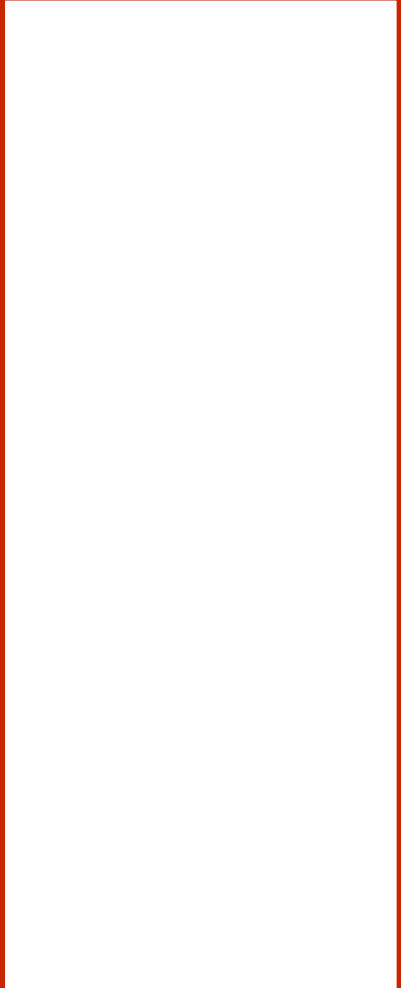


Running multiple programs concurrently



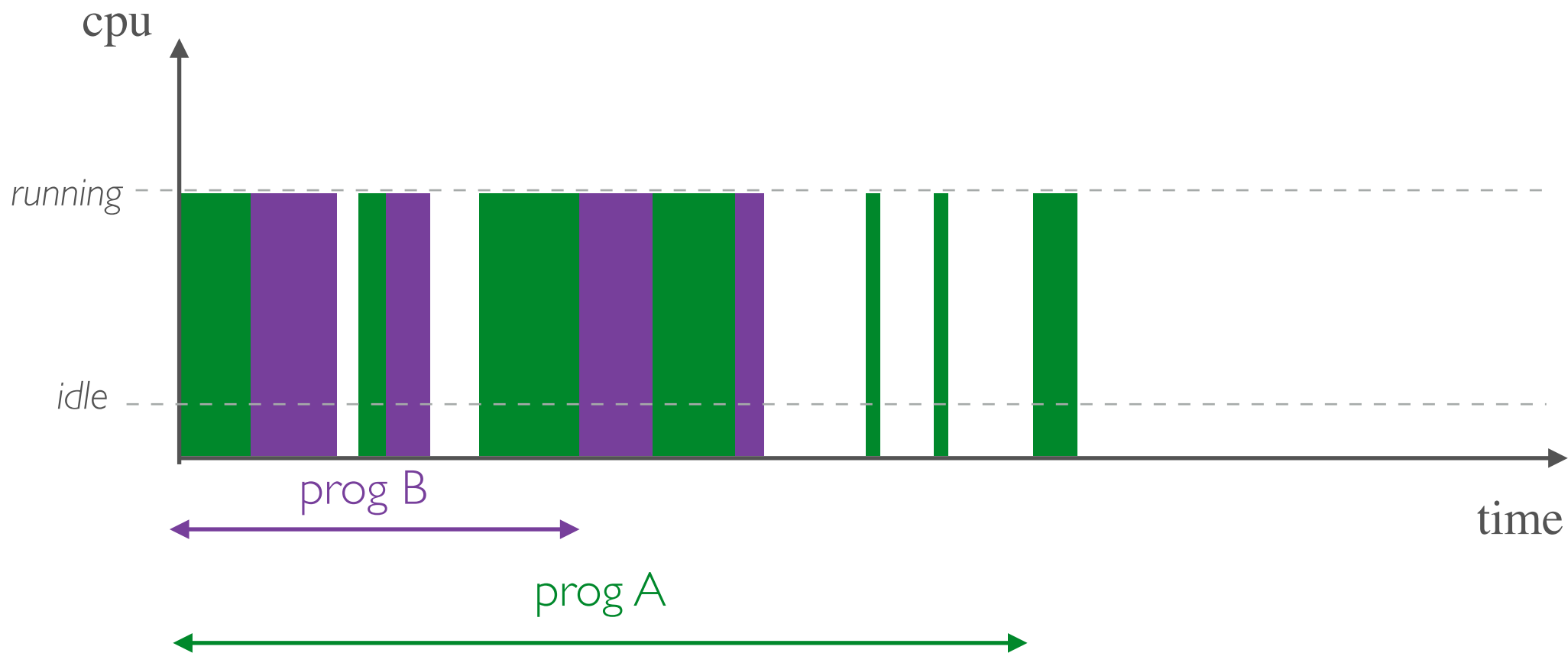
prog A

stack A

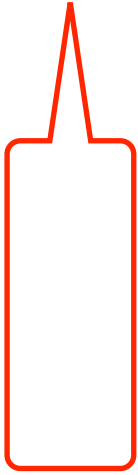
heap A



prog B



Problem: what if the program does not do any IO and use the CPU for a long time (a.k.a starvation problem)



stack B

heap B





Problem: the programs and their stacks must co-exists in memory (coming next with virtual memory)

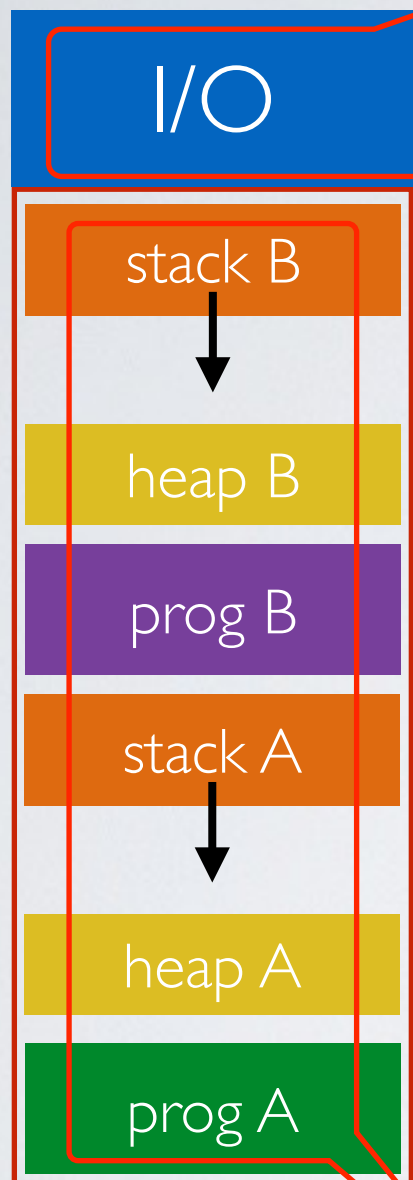
1/0



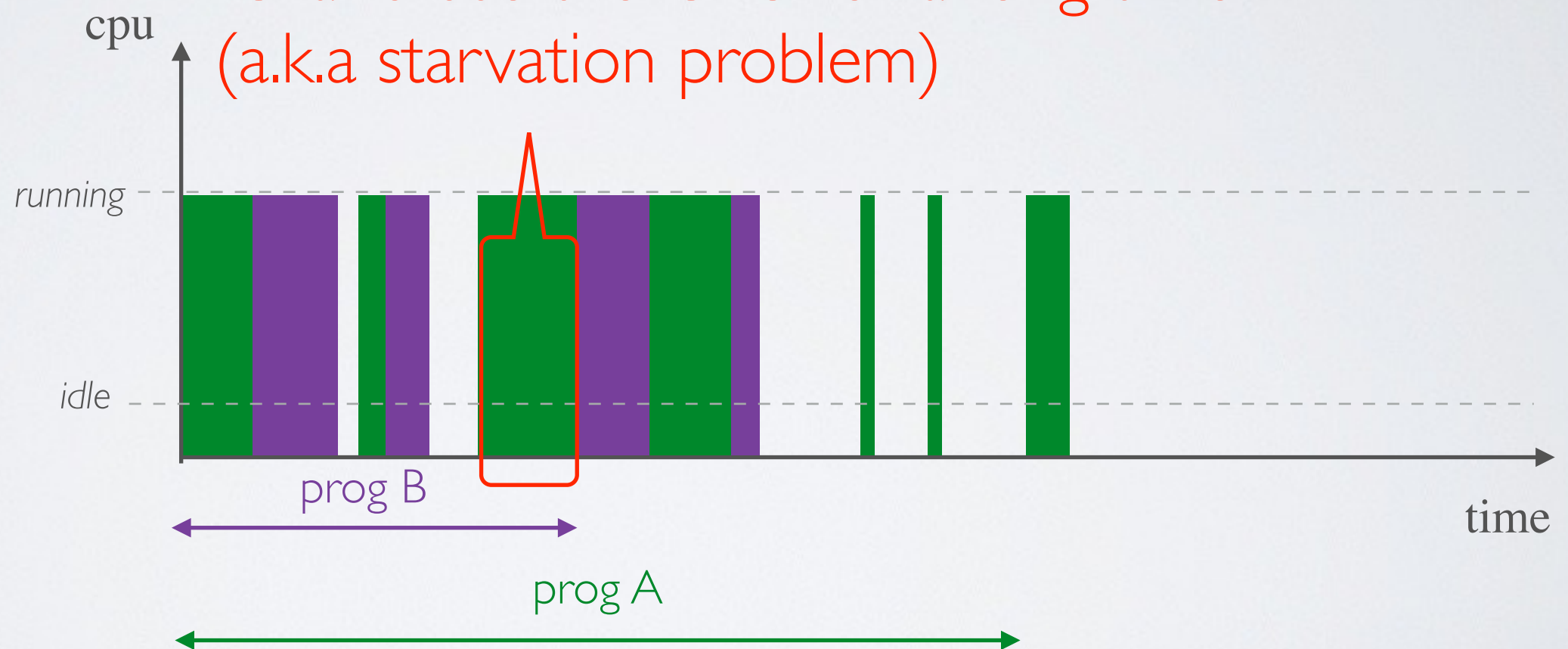
Problem: concurrent access to I/O devices
must be synchronized

Running multiple programs concurrently

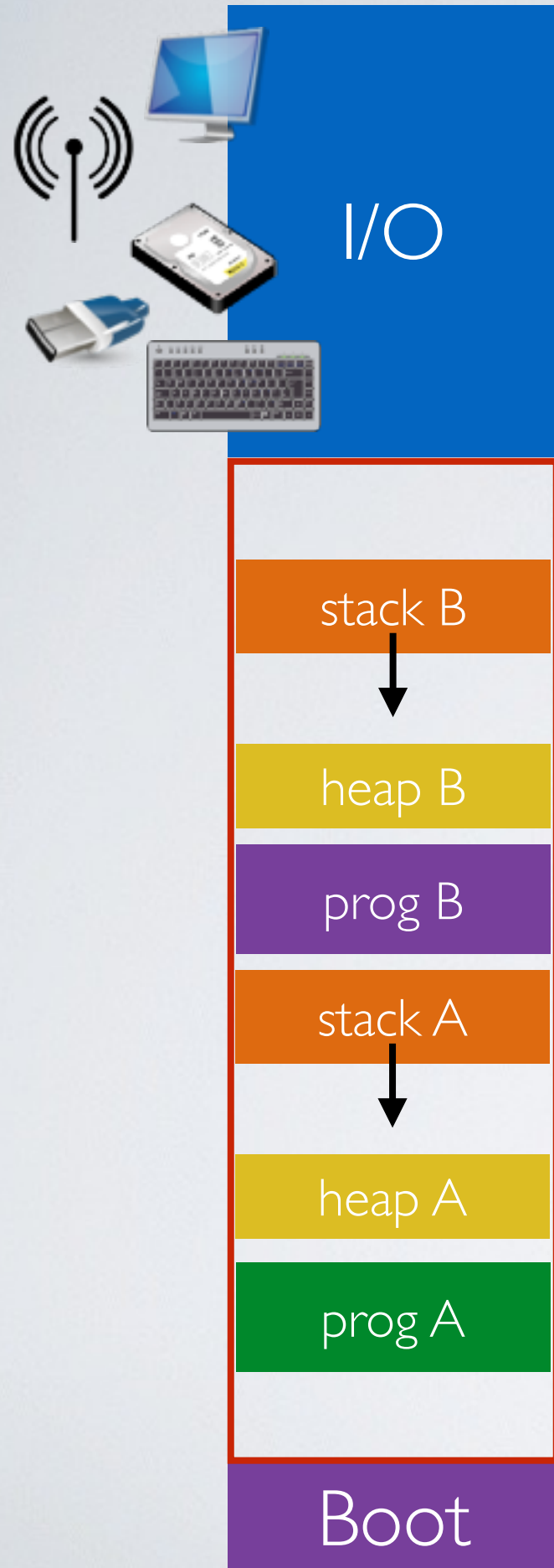
Problem: concurrent access to I/O devices must be synchronized



Problem: what if the program does not do any I/O and use the CPU for a long time (a.k.a starvation problem)



Problem: the programs and their stacks must co-exists in memory (coming next with virtual memory)



Using the clock
to trigger an interrupt

