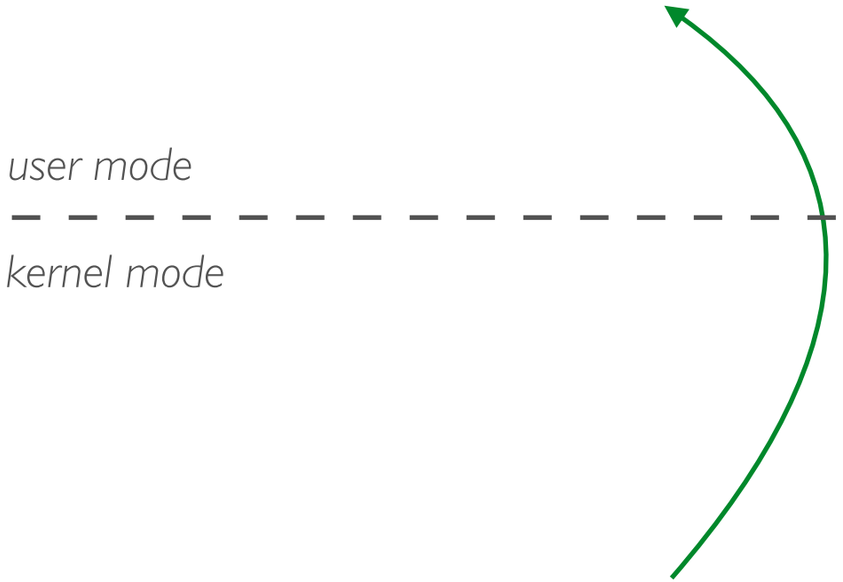
# Definition of the process and system calls

**principle 3**: process can access resources through kernel system-calls

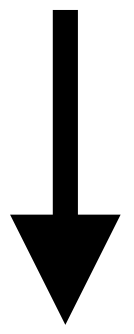
**principle 2**: the kernel has privileged access to the entire memory (kernel mode)



# prog A

stack A

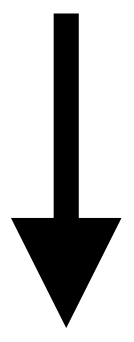
# heap A



# prog B

# stack B

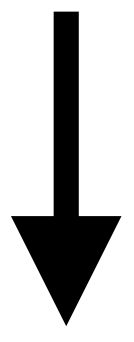
# heap B

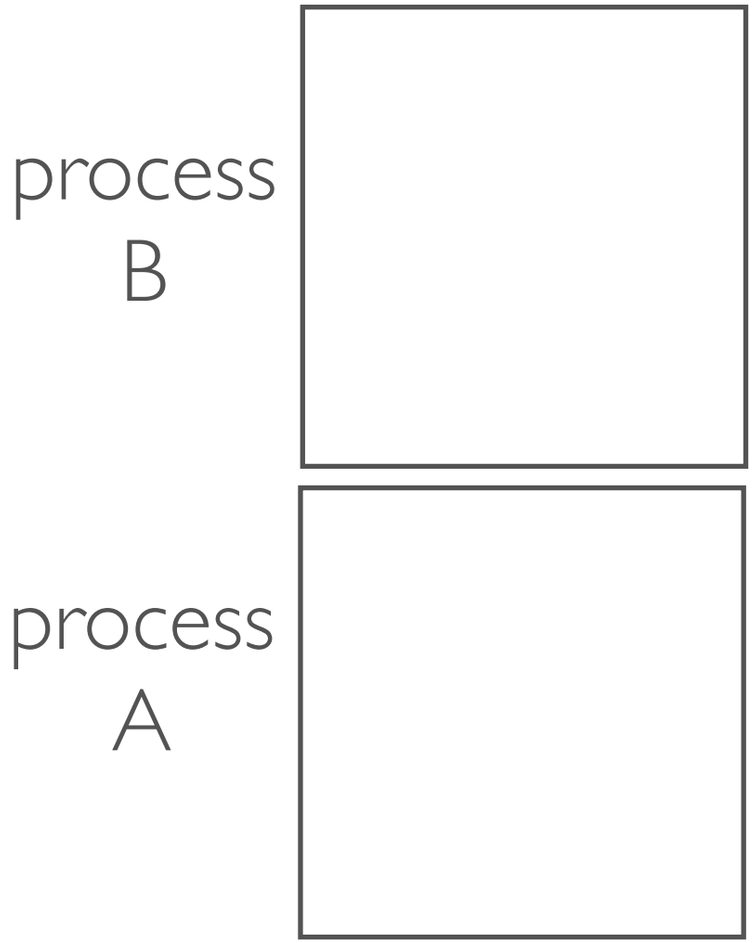


# Kernel

kernel stack

# kernel heap






**principle 1**: user programs are run as processes isolated from each other (user mode)

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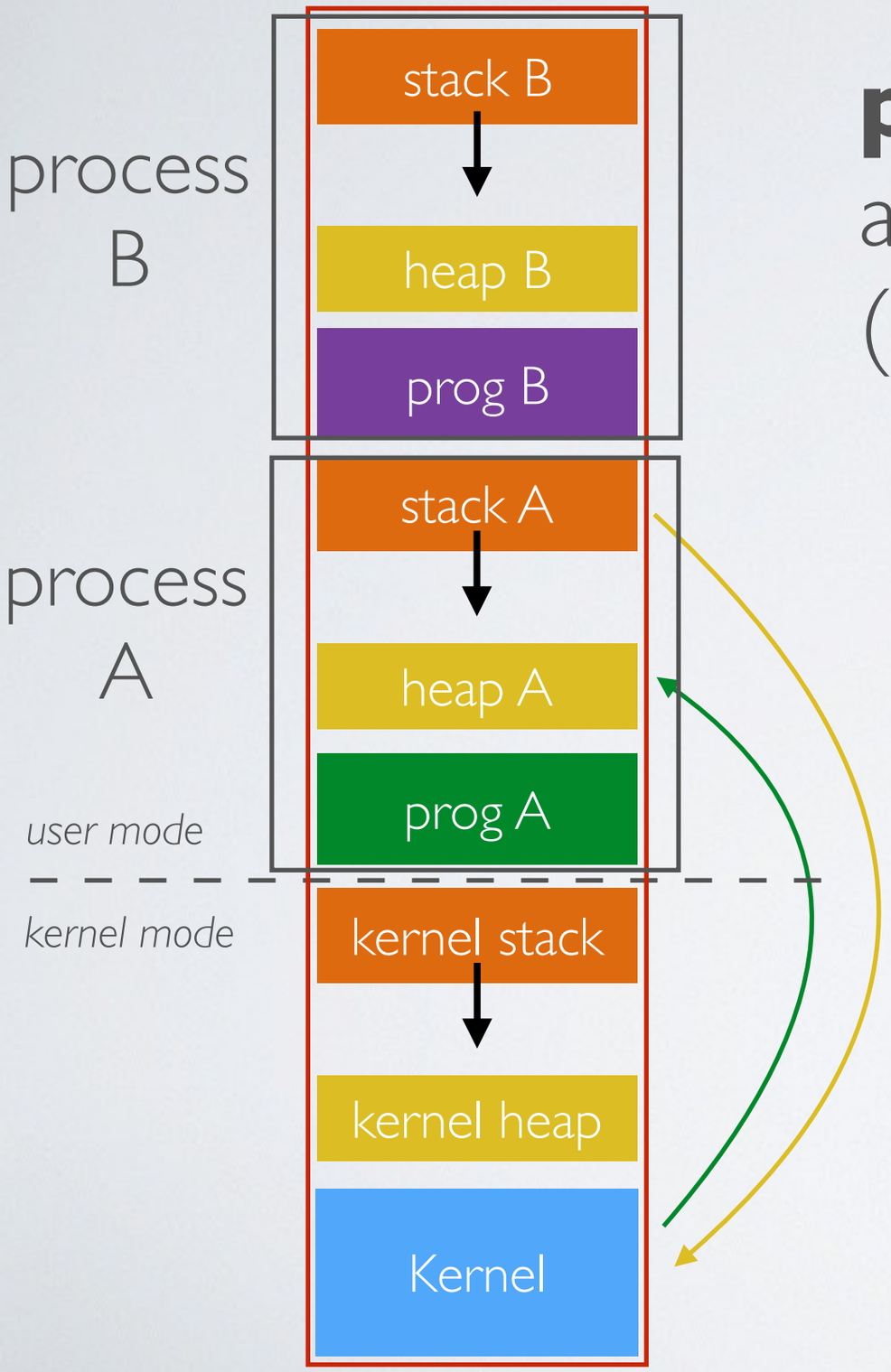


**principle 1**: user programs are run as processes isolated from each other (user mode)

**principle 2**: the kernel has privileged access to the entire memory (kernel mode)

**principle 3**: process can access resources through kernel system-calls

# How can we isolate processes and kernel memory spaces?

➡ The Virtual Memory (coming soon)

## In a nutshell

- User programs do not directly access the memory but the virtual memory (that is somehow mapped onto the real memory)
- The kernel manages the virtual memory for all processes