Lecture 16 - Address spaces

July 8, 2019 10:32 AM

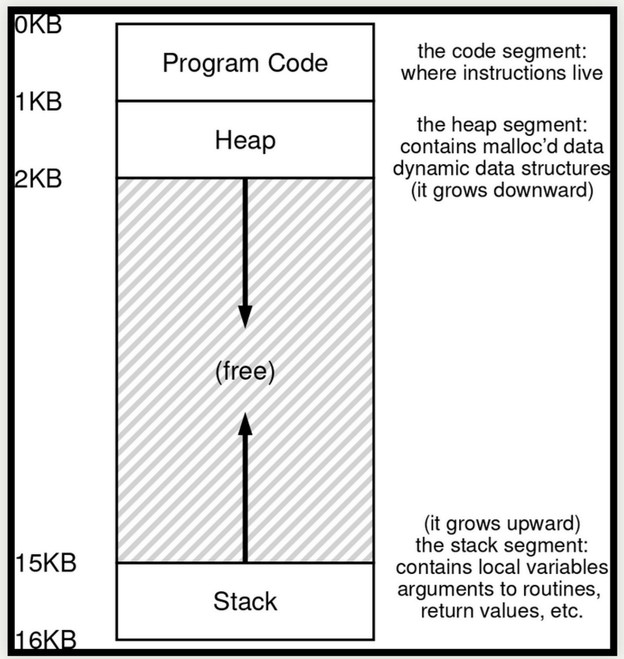
Changes to A4 ✓

cluster size should reported in bytes ✓

clarify what should be done with the file retrieved from get command.

Why might it be organized **this** way?

- What benefits are there for the OS?



- Translation from virtual to physical is not expensive.
- Segments let us save space, we don't have to map unused / free in the middle.

- Don't have to care about which way the stack or heap grow

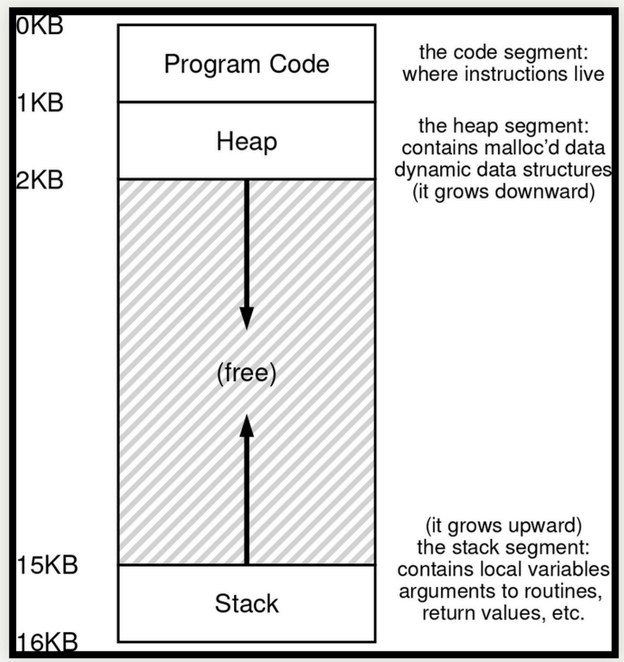
- We don't have to worry about stack clobbering heap.

- If this is physical, programs/processes can be physically next to each other in memory and they won't grow toward each other.

Why might it be organized **this** way?

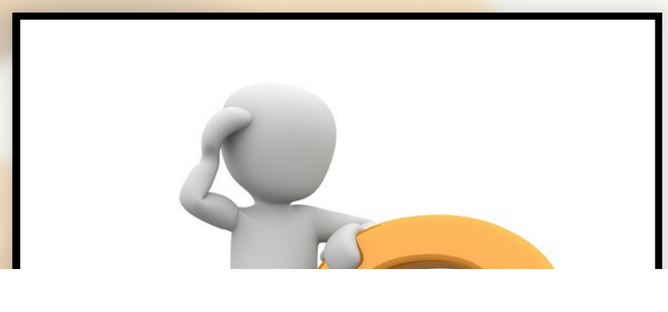
- What benefits are there for the OS?
- What benefits are there for the programmer?

– Abstraction
– Let the OS handle segment sizes, I don't have to think about it



- you can assume the OS will slap your hand (Segmentation fault) if you try to access memory that isn't yours
- inertia — it's always been this way.

Think about it ⏳: Based on what you've read so far (and other courses like COMP 2280), who or what has the responsibility of managing the *contents*



Think about it ⏳: Based on what you've read so far (and other courses like COMP 2280), who or what has the responsibility of managing the *contents* of:

1. The **code segment**? The OS
2. The **stack**? — Program + compiler + hardware

The heap?
- depends on the language (JavaScript?)
- vs (programmer) malloc and free → Standard library.