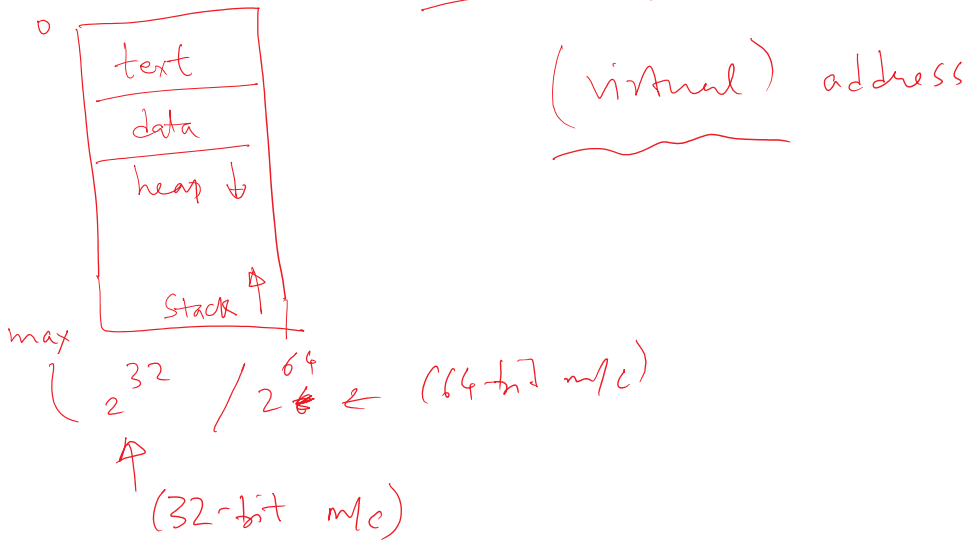


- ① virtualization
 - transparent
 - efficiently
 - isolation.
- ② control & efficiency. of resources.
- ② abstractions the "view" for virtualization.

① memory virtualization

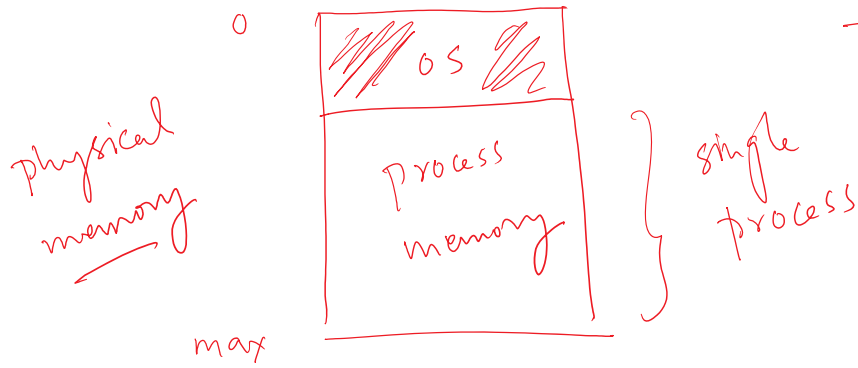
- (a) requirements.
- isolation / protection (from contending usages / users)
 - memory view should be "static"
 - once a ptr., once an memory area, all valid till process leaves.
 - memory layout should be continuous
 - full addressability (all bits on the address range space)
 - flexibility — multi-grain allocation / input.
 - flags. — r/w/execute.

(b) (virtual) address space abstraction.



(c) key enabler for the abstraction is
the address translator — $v \cdot 2^p$
 virtual to physical memory translation.

(d) design 0



multiplexing

disk-based soft.
for save & restore.

pros: v2p overheads \Rightarrow 0
efficient!

-ve: multiplexing overheads
are large.

LARGE

Design 1

