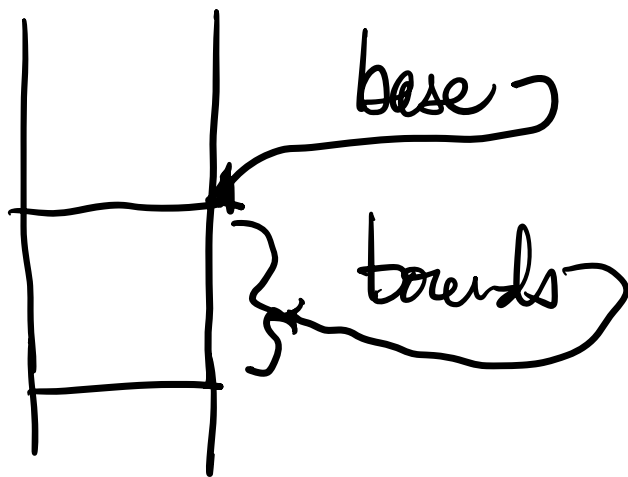


Segmentation

So far: processes can be dynamically relocated. Permits swapping. time
Permits N procs at same

→ explain this Permits ISOLATION

But a Process ^{is} ~~also~~ still all in one package. Individual sections cant resize / grow.



Common CS thought:

If one Foo is good,
More Fools are better.

→ Derives from Mack Sennett
Keystone Studios
Keystone Kops

If one Fat man falling down is
funny, two Fat Men falling down
is twice as funny
— see Fatty ~~Amickle~~

Hence segmentation

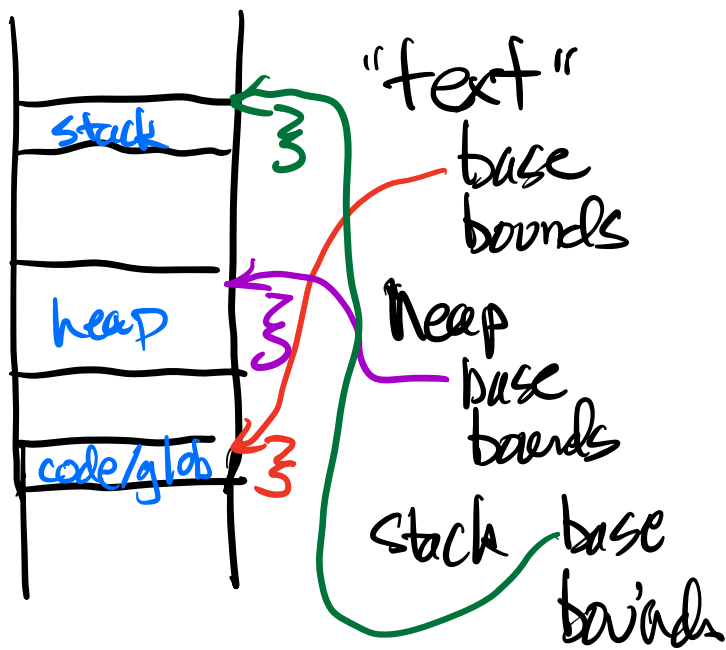
Three segments

code globals

heap

stack

EACH gets their own base & trends



Big benefits

- * regions can grow!
- * fitting segments into holes in Ram easier

But how do you know which pair of registers to use?

Explicit:

Take top 2 bits of all Virtual addresses.

00 code globals

01 heap

10 stack

11 - Bad

} easy bit divider VA

Implicit

* How is the address generated.

By Program Counter?
use code b/b pair

From stack pointer?
use stack B/B pair

else use heap pair.

question - what about globals?

BTW: Segmentation violation

Note stack offsets are Negative.

All of a segment must still
reside in RAM

Permit sharing of segments

Need
permissions
bits

