

## Address space layout

A typical x86 32-bit address-space layout for C programs:

0xffff ffff

...
stack – downwards-growing (perhaps starting at 0x7fff ffff)
...
heap – upwards-growing (perhaps starting at 0x0020 0000)
...
static variables (perhaps starting at 0x0010 0000)
C program executable code (perhaps starting at 0x0000 8000)
...
Memory locations starting at 0x0000 0000 are often ( <u>but not always!</u> ) memory-mapped into “illegal address” to cause a trap if accessed – a form of poor-man’s “NullPointerException”.

0x0000 0000

[See example code `layout.c`]