(1) seeds 1, 2, 3

python3 relocation.py -s 1

Base : 13884, Limit : 290

VA0: 782 → Segmentation Violation

VA1 : 261 → Valid (13884+261 = 14145)

VA2 : 507 → Seg. Violation

VA3 : 460 → ''

VA4 : 667 → ''

seed 2

Base : 15529 (decimal)

Limit : 500

VA0 : 57 → Valid (15529+57)

VA1 : 86 → Valid (15529+86)

VA2 : 855 → Seg. violation

VA3 : 753 → ''

VA4 : 685 → ''

seed 3

Base : 8916

Limit : 316

VA0: 378 → Seg. violation
VA1: 618 → " "
VA2: 640 → "
VA3: 67 → Valid (896+67)
VA4: 13 → Valid (896+13)

② -s 0 -n 10
↳ no. of virtual addresses to generat

```
Virtual Address Trace
  VA  0: 0x00000308 (decimal:  776) --> PA or segmentation violation?
  VA  1: 0x000001ae (decimal:  430) --> PA or segmentation violation?
  VA  2: 0x00000109 (decimal:  265) --> PA or segmentation violation?
  VA  3: 0x0000020b (decimal:  523) --> PA or segmentation violation?
  VA  4: 0x0000019e (decimal:  414) --> PA or segmentation violation?
  VA  5: 0x00000322 (decimal:  802) --> PA or segmentation violation?
  VA  6: 0x00000136 (decimal:  310) --> PA or segmentation violation?
  VA  7: 0x000001e8 (decimal:  488) --> PA or segmentation violation?
  VA  8: 0x00000255 (decimal:  597) --> PA or segmentation violation?
  VA  9: 0x000003a1 (decimal:  929) --> PA or segmentation violation?
```

setting limit to just greater than largest (929) = 930.

⑤ -s 1 -n 10 -l 100

Max. base can be set to, such that the address space fits into physical memory

Physical memory 16 k = 16kb
= 16 x 1024
= 16384

So maximum base
16384 - limit = 16284

```
Base-and-Bounds register information:

  Base   : 0x00003f9d (decimal 16285)
  Limit  : 100

Error: address space does not fit into physical memory with those base/bounds values.
Base + Limit: 16385   Psize: 16384
```

④ With larger address spaces and physical memories.

-s 1 -a 2k -p 32k

VA0 : 1564 Seg. violation
VA1 : 522 Valid
VA2 : 1014 seg. violation
VA3 : 920 "

VA 4 : 1334 "

Above with -l 1000, makes 920 also valid

-s 0 -n 10 -a 2k -p 32k

Value of Limit, just greater than highest VA to make all valid.

1860

-s 1 -n 10 -a 2k -p 32k -l 100

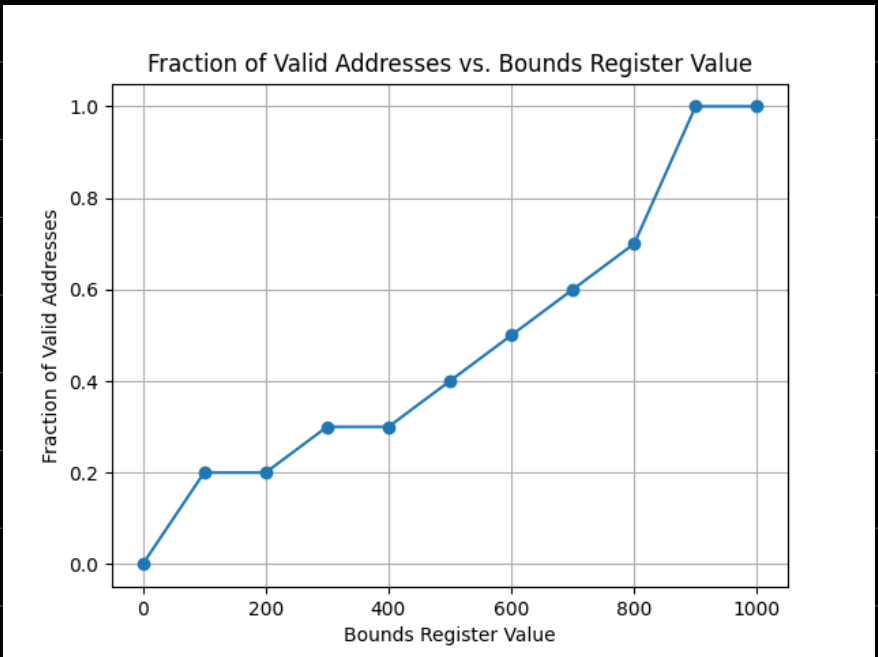
base = 32x1024 - limit = 32668

(5) Graph - Fraction of valid addresses vs limits from 0 to address space size

↓

1K

seed = 1



seeds = 0, 1, 2, 3, 4