## CALCULATION BASED THINGS

1. physical address = virtual address + base
2. physical address = base + offset.
3. $0 \le$ virtual address $<$ bounds.

| Segment | Base | Size | Grows Positive ? | Protection |
|---|---|---|---|---|
| Code | 32K | 2K | 1 | Read execute |
| Heap | 34K | 2K | 1 | Read-Write |
| Stack | 28K | 2K. | 0 | Read-Write. |

| Segment | Bits |
|---|---|
| Code | 00 |
| Heap | 01 |
| Stack | 10 |

13. PTEAddr = PTBR + (VPN * size of(PTE))
14. header_t *hptr = (void *ptr) − sizeof(header_t)
15. AMAT = $(P_{hit} * T_m) + (P_{miss} * T_D)$ ; $T_m$ → time to access memory, $T_D$ → time to access disk.

4. Virtual Address space is $n$ KB
   $\log_2(n) = x$ bits
   so you'll need $x$ bits of address. (first two bits for segment)
5. Convert the virtual address into binary the left-most ~~two~~ few bits will tell you the segment.
6. To find number of bits for a segment, if there are $n$ segments so,
   $\log_2(n) = x$ bits.
7. Total No of Pages = $\frac{\text{Address Space}}{\text{Page Size}}$. ∴ if 4 bits, 2^4
   Page Size.
8. Offset = $\log_2$ (~~Total Pages~~)
9. VPN # of Bits = ~~VA bits − offset~~ $\log_2$(Total Pages)
10. Page Table Size = No of Pages × Size of each PTE
11. Internal Fragmentation = (No of Pages × Page Size) − Used memory size.
12. Physical Memory = PFN + offset