p4B_worksheet.pdf: For given cache config, determine hits (H) and misses (M) for each instruction in the trace. All addresses are in hexadecimal. All sizes are 1,2,4, or 8 bytes.

```
./csim [-hv] -s <s> -E <E> -b <b> -t <tracefile>
-h: Optional help flag that prints usage info
-v: Optional verbose flag that displays trace info
-s <s>: Number of s bits for set index
-E <E>: number of lines per set (associativity)
-b <b>: Number of b bits for block offsets
-t <tracefile>: Name of the valgrind trace to replay
./csim -s 4 -E 2 -b 4 -t traces/trace1
operation address,size
L 0,1    0000 0000   M
L 1,1    0000 0001   H
L 2,1    00 00 0010  H
L 3,1    0000 0011   H
S 4,1    0000 0100   H
L 5,1    0000 0101   H
S 6,1    0000 0110   H
L 7,1    0000 0111   H
S 8,1    0000 1000   H
L 9,1    0000 1001   H
S a,1    0000 1010   H
L b,1    0000 1011   H
S c,1    0000 1100   H
L d,1    0000 1101   H
S e,1    0 000 1110  H
M f,1    0 000 1111  H
./csim -s 4 -E 1 -b 4 -t traces/trace2
L 10,1   M
M 20,1   M
L 22,1   H
S 18,1   H
L 110,1  M
L 210,1  M
M 12,1   H
./csim -s 2 -E 3 -b 3 -t traces/trace3
L 10,4   0 01010   M
S 18,4   0 10010   M
L 20,4   01 0100   H
S 28,4   01 1100   M
S 50,4   11 0010   M
./csim -s 3 -E 4 -b 5 -t traces/trace4 (this only partical list of trace4)
S 00600aa0,1   1010 0000   M
I 004005b6,5   1011 0110   M
S 7ff000398,8  1001 1000   M
I 0040051e,1   0001 1110   M
S 7ff000390,8  1001 0000   H
I 0040051f,3   0001 1111   H
I 00400522,4   0010 0010   M
S 7ff000378,8  0111 1000   M
I 00400526,4   0010 0110   H
S 7ff000370,8  0111 0000   H
I 0040052a,7   0010 1010   H
S 7ff000384,4  1000 0100   H
I 00400531,2   00 11 0001  H
I 00400581,4   1000 0001   M
L 7ff000384,4  1000 0100   H
```
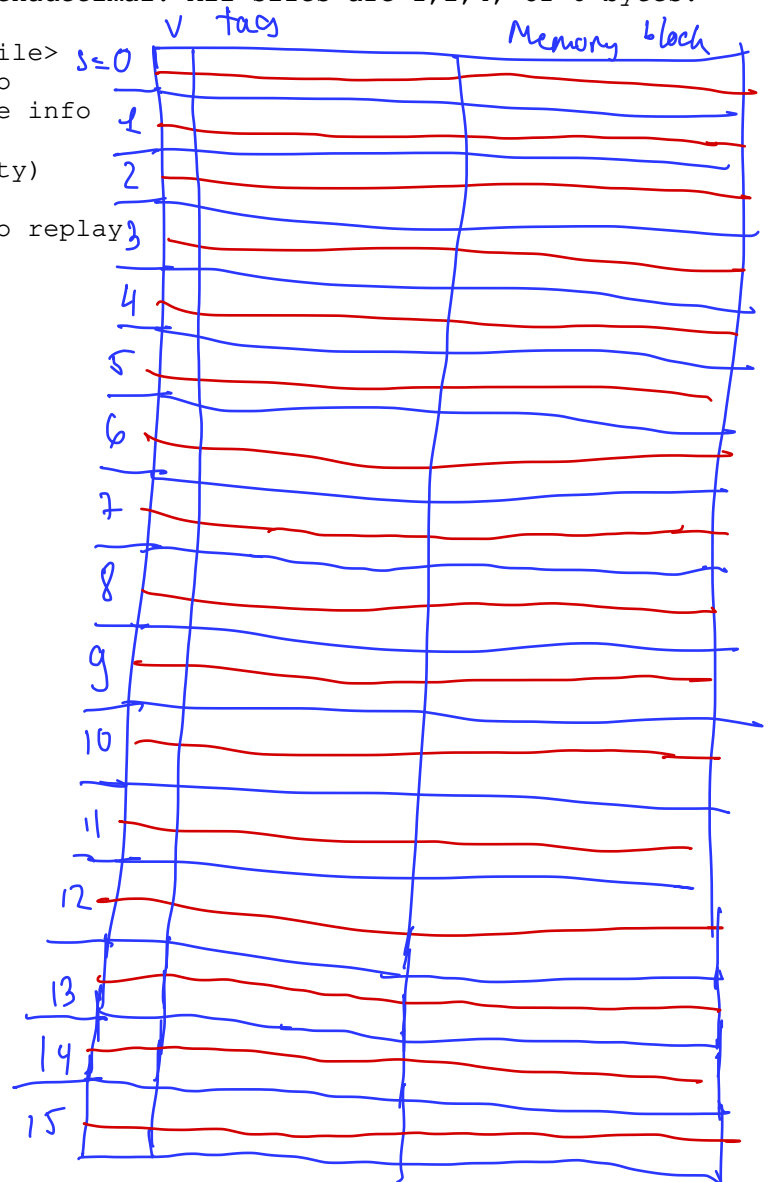

Draw memory diagram (in whitespace above) of a cache with S=4 and E=2.
Label struct members of cache_line_t and memory type of each mem location:
    cache_line_t, cache_set_t, cache_t