CS354 p4B Worksheet: For given cach config, determine hits (H) and misses (M) for each instruction in the trace

```
csim-ref [-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 miss
 L 1,1 hit
 L 2,1 hit
 L 3,1 hit
 S 4,1 hit
 L 5,1 hit
 S 6,1 hit
 L 7,1 hit
 S 8,1 hit
 L 9,1 hit
 S a,1 hit
 L b,1 hit
 S c,1 hit
 L d,1 hit
 S e,1 hit
 M f,1 hit hit
```

```
./csim -s 4 -E 1 -b 4 -t traces/trace2
 L 10,1   miss
 M 20,1   miss hit
 L 22,1   hit
 S 18,1   hit
 L 110,1  miss
 L 210,1  miss
 M 12,1   miss hit
```

```
./csim -s 2 -E 3 -b 3 -t traces/trace3
 L 10,4 miss
 S 18,4 miss
 L 20,4 miss
 S 28,4 miss
 S 50,4 miss
```

```
./csim -s 3 -E 4 -b 5 -t traces/trace4 (this only partical list of trace4)
 S 00600aa0,1    miss
I  004005b6,5
 S 7ff000398,8   miss
I  0040051e,1
 S 7ff000390,8   hit
I  0040051f,3
I  00400522,4
 S 7ff000378,8   miss
I  00400526,4
 S 7ff000370,8   miss
I  0040052a,7
 S 7ff000384,4   hit
I  00400531,2
I  00400581,4
 L 7ff000384,4   hit
```

Draw memory diagram of cache with S=4 and E=2.
Label memory type of each mem location: cache_line_t, cache_set_t, cache_t

cache_t

cache_set_t

0
1
2
3

0   cache_line_t

1   cache_line_t

0   cache_line_t

1   cache_line_t

0   cache_line_t

1   cache_line_t

0   cache_line_t

1   cache_line_t