

```

1 import argparse
2
3 # Constants for the cache configuration
4 NUM_SETS = ... # Configure number of sets
5 ASSOC = ... # Configure cache associativity
6 BLOCK_SIZE = 64 # 64 bytes as block size
7
8 # Define the arrays for the cache simulation
9 tag_array = [[0 for _ in range(ASSOC)] for _ in range(NUM_SETS)]
10 lru_position = [[0 for _ in range(ASSOC)] for _ in range(NUM_SETS)]
11 dirty = [[False for _ in range(ASSOC)] for _ in range(NUM_SETS)]
12
13 # Variables to maintain the simulation statistics
14 Hit = 0
15 Miss = 0
16
17 def update_lru(address):
18     # Logic for updating LRU policy
19     pass
20
21 def update_fifo(address):
22     # Logic for updating FIFO policy
23     pass
24
25 def simulate_access(op, address):
26     set_idx = (address // BLOCK_SIZE) % NUM_SETS
27     tag = address // BLOCK_SIZE
28
29     for i in range(ASSOC):
30         if tag == tag_array[set_idx][i]:
31             global Hit
32             Hit += 1
33             # Choose policy (LRU or FIFO) based on the configuration
34             if ...: # LRU policy is chosen
35                 update_lru(address)
36             else:
37                 update_fifo(address)
38         else:
39             global Miss
40             Miss += 1
41             # Handle the miss scenario here
42
43 if __name__ == "__main__":
44     # Setting up the argument parser
45     parser = argparse.ArgumentParser(description="Cache Simulation using Trace Files")
46
47     # Adding an argument to specify the trace file
48     parser.add_argument("trace_file", type=str, help="Path to the trace file")
49
50     # Parsing the command line arguments
51     args = parser.parse_args()
52
53     # Using the provided trace file path from the parsed arguments
54     with open(args.trace_file, 'r') as file:
55         for line in file:
56             op, address = line.split()
57             address = int(address, 16)
58             simulate_access(op, address)
59
60     # Print out the statistics
61     print(f"Hits: {Hit}")
62     print(f"Misses: {Miss}")

```