

CS 544 (Spring 2026): Hand-In Worksheet 2 (Threads)

Full Name: _____

Student ID Number: _____

Directions:

- fill your name and student ID on this side of the page. Then, flip it over and fix the code on the other side.
- To fix the code, cross out lines, or write new lines as necessary.
- Keep the code structure similar. For example, don't cross everything out and rewrite the program from scratch.
- Do not do anything that changes the indentation level of the code written. For example, using "with" would be a good idea with this code in practice, but don't use it here because the indentation changes would be confusing to grade.
- For performance reasons, do NOT hold a lock when doing I/O, unless necessary for correctness.

```
import sys
import threading

lock = threading.Lock()
work_queue = []
next_work_queue_idx = 0
total = 0

def worker():
    global next_work_queue_idx, total
    while True:
        lock.acquire()
        if next_work_queue_idx >= len(work_queue):
            lock.release()
            return
        path = work_queue[next_work_queue_idx]
        lock.release()

        next_work_queue_idx += 1

        with open(path) as f:
            value = int(f.read().strip())

        total += value

def main():
    global work_queue
    work_queue = sys.argv[1:]

    t1 = threading.Thread(target=worker)
    t2 = threading.Thread(target=worker)

    t1.start()
    t2.start()

    print(f"Total: {total}")

if __name__ == "__main__":
    main()
```