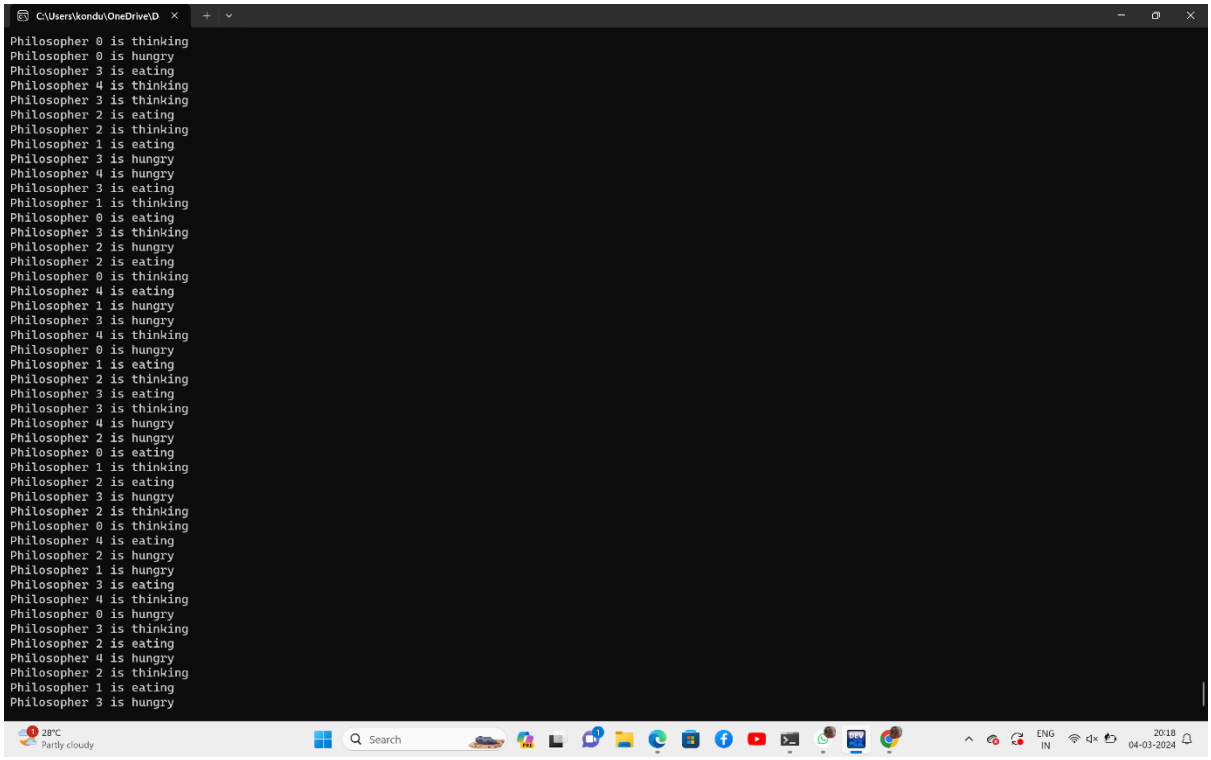
```
#include <stdio.h>
#include <pthread.h>
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>

#define NUM_PHILOSOPHERS 5

pthread_mutex_t chopsticks[NUM_PHILOSOPHERS];

void *philosopher(void *arg) {
    int id = *((int *)arg);
    int left = id;
    int right = (id + 1) % NUM_PHILOSOPHERS;

    while (1) {
        printf("Philosopher %d is thinking\n", id);
        usleep(rand() % 1000000); // thinking

        printf("Philosopher %d is hungry\n", id);

        pthread_mutex_lock(&chopsticks[left]);
        pthread_mutex_lock(&chopsticks[right]);

        printf("Philosopher %d is eating\n", id);
        usleep(rand() % 1000000); // eating

        pthread_mutex_unlock(&chopsticks[left]);
        pthread_mutex_unlock(&chopsticks[right]);
    }
    return NULL;
```

```
}

int main() {
    pthread_t philosophers[NUM_PHILOSOPHERS];
    int philosopher_ids[NUM_PHILOSOPHERS];

    for (int i = 0; i < NUM_PHILOSOPHERS; i++) {
        pthread_mutex_init(&chopsticks[i], NULL);
    }

    for (int i = 0; i < NUM_PHILOSOPHERS; i++) {
        philosopher_ids[i] = i;
        pthread_create(&philosophers[i], NULL, philosopher, &philosopher_ids[i]);
    }

    for (int i = 0; i < NUM_PHILOSOPHERS; i++) {
        pthread_join(philosophers[i], NULL);
    }

    for (int i = 0; i < NUM_PHILOSOPHERS; i++) {
        pthread_mutex_destroy(&chopsticks[i]);
    }

    return 0;
}
```


C:\Users\kondu\OneDrive\D
Philosopher 0 is thinking
Philosopher 0 is hungry
Philosopher 3 is eating
Philosopher 4 is thinking
Philosopher 3 is thinking
Philosopher 2 is eating
Philosopher 2 is thinking
Philosopher 1 is eating
Philosopher 3 is hungry
Philosopher 4 is hungry
Philosopher 3 is eating
Philosopher 1 is thinking
Philosopher 0 is eating
Philosopher 3 is thinking
Philosopher 2 is hungry
Philosopher 2 is eating
Philosopher 0 is thinking
Philosopher 4 is eating
Philosopher 1 is hungry
Philosopher 3 is hungry
Philosopher 4 is thinking
Philosopher 0 is hungry
Philosopher 1 is eating
Philosopher 2 is thinking
Philosopher 3 is eating
Philosopher 3 is thinking
Philosopher 4 is hungry
Philosopher 2 is hungry
Philosopher 0 is eating
Philosopher 1 is thinking
Philosopher 2 is eating
Philosopher 3 is hungry
Philosopher 2 is thinking
Philosopher 0 is thinking
Philosopher 4 is eating
Philosopher 2 is hungry
Philosopher 1 is hungry
Philosopher 3 is eating
Philosopher 4 is thinking
Philosopher 0 is hungry
Philosopher 3 is thinking
Philosopher 2 is eating
Philosopher 4 is hungry
Philosopher 2 is thinking
Philosopher 1 is eating
Philosopher 3 is hungry
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