main.c

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```c
#include <stdio.h>
#include <pthread.h>
#include <semaphore.h>
#define N 5
sem_t chop[N];

void* dine(void* n) {
    int id = *(int*)n;
    sem_wait(&chop[id]); sem_wait(&chop[(id+1)%N]);
    printf("Philosopher %d is eating\n", id);
    sem_post(&chop[id]); sem_post(&chop[(id+1)%N]);
    printf("Philosopher %d is thinking\n", id);
    return NULL;
}

int main() {
    pthread_t p[N]; int i,id[N];
    for(i=0;i<N;i++){ sem_init(&chop[i],0,1); id[i]=i; pthread_create(&p[i],0
        ,dine,&id[i]); }
    for(i=0;i<N;i++) pthread_join(p[i],0);
    return 0;
}
```

Output

```
Philosopher 0 is eating
Philosopher 0 is thinking
Philosopher 2 is eating
Philosopher 2 is thinking
Philosopher 4 is eating
Philosopher 4 is thinking
Philosopher 1 is eating
Philosopher 1 is thinking
Philosopher 3 is eating
Philosopher 3 is thinking


=== Code Execution Successful ===
```