```
Untitled1.cpp
Project Classes Debug
                             #include<stdio.h>
                             #include<stdlib.h>
                             #include<pthread.h>
                             #include(semaphore.h>
                              #include<unistd.h>
                              sem_t room;
                              sem t chopstick[5];
                              void * philosopher(void *);
                        10
                              void eat(int);
                        11
                              int main()
                        12
                        13日 (
                                  int i,a[5];
                        14
                        15
                                  pthread_t tid[5];
                         16
                                   sem_init(&room,0,4);
                         17
                         18
                                   for(i=0;i<5;i++)
                         19
                                      sem_init(&chopstick[i],0,1);
                         20
                         21
                                   for(i=0;i<5;i++){
                         22日
                                       a[i]=i;
                         23
                                       pthread_create(&tid[i],NULL,philosopher,(void *)&a[i]);
                         24
                         25
                                   for(i=0;i<5;i++)
                         26
                                       pthread_join(tid[i],NULL);
                         27
                         28
                         29
                               void * philosopher(void * num)
                         30
                         31日 (
                                   int phil=*(int *)num;
                          32
                          33
                                    sem_wait(&room);
                          34
                                   printf("\nPhilosopher %d has entered room",phil);
                          35
                                   sem_wait(&chopstick[phil]);
sem_wait(&chopstick[(phil+1)%5]);
                          36
                          37
                         38
                                    eat(phil);
                          39
                                    sleep(2);
                          40
                                    printf("\nPhilosopher %d has finished eating",phil);
                          41
                                   ile Lag Debug G Find Results
```

```
22 🖨
                                  for(i=0;i<5;i++){
                        23
                                      a[i]=i;
                        24
                                      pthread_create(&tid[i],NULL,philosopher,(void *)&a[i]);
                        25
                        26
                                  for(i=0;i<5;i++)
                        27
                                      pthread_join(tid[i],NULL);
                        28
                        29
                        30
                              void * philosopher(void * num)
                        31 □ {
                        32
                                 int phil=*(int *)num;
                        33
                        34
                                  sem_wait(&room);
                        35
                                  printf("\nPhilosopher %d has entered room",phil);
                        36
                                  sem_wait(&chopstick[phil]);
                        37
                                  sem wait(&chopstick[(phil+1)%5]);
                        38
                        39
                                  eat(phil);
                        40
                                  sleep(2);
                        41
                                  printf("\nPhilosopher %d has finished eating",phil);
                        42
                        43
                                  sem_post(&chopstick[(phil+1)%5]);
                        44
                                  sem_post(&chopstick[phil]);
                        45
                                  sem_post(&room);
                        46
                        47
                        48
                             void eat(int phil)
                        49 □ {
                                  printf("\nPhilosopher %d is eating",phil);
Compiler Resources ( Compile Log Debug  Find Results
Line: 47
             Col: 1
                          Sel: 0
                                      Lines: 51
                                                    Length: 910
                                                                    Insert
                                                                                Done parsing in 0.016 seconds
   95°F
Mostly sunny
                                                                                                                                                                              A O ENG PO
```

21

```
Philosopher 0 has entered room
   Philosopher 0 is eating
Projephilosopher 2 has entered room
   Philosopher 1 has entered room
   Philosopher 3 has entered room
   Philosopher 2 is eating
   Philosopher 0 has finished eating
   Philosopher 2 has finished eating
   Philosopher 4 has entered room
   Philosopher 3 is eating
   Philosopher 1 is eating
   Philosopher 3 has finished eating
   Philosopher 1 has finished eating
   Philosopher 4 is eating
   Philosopher 4 has finished eating
   -----
   Process exited after 12.78 seconds with return value 0
   Press any key to continue . . .
                              sem_walt(&cnopstick[(pnl1+1)%5]);
                     38
                              eat(phil);
                     39
                     40
                              sleep(2);
                              printf("\nPhilosopher %d has finished eating",phil);
                     41
                     42
                     43
                              sem_post(&chopstick[(phil+1)%5]);
                     44
                              sem_post(&chopstick[phil]);
```