



Monitor Solution to Dining Philosophers

```
monitor DiningPhilosophers
{
    enum { THINKING; HUNGRY, EATING) state [5] ;
    condition self [5];

    void pickup (int i) {
        state[i] = HUNGRY;
        test(i);
        if (state[i] != EATING) self[i].wait;
    }

    void putdown (int i) {
        state[i] = THINKING;
        // test left and right neighbors
        test((i + 4) % 5);
        test((i + 1) % 5);
    }
}
```





Solution to Dining Philosophers (Cont.)

```
void test (int i) {
    if ((state[(i + 4) % 5] != EATING) &&
        (state[i] == HUNGRY) &&
        (state[(i + 1) % 5] != EATING) ) {
        state[i] = EATING ;
        self[i].signal () ;
    }
}

initialization_code() {
    for (int i = 0; i < 5; i++)
        state[i] = THINKING;
}
}
```

