Readers Writers

```
readcount = 0
sem_init(mutex, 1)
sem_init(writer_or_readers, 1)
sem_init(service, 1)
```

```
void writer () {
  while(1){
    sem_wait(service)
    sem_wait(writer_or_readers)
    sem_signal(service)
    write(file, data)
    sem_signal(writer_or_readers)
  }
}
```

```
void reader () {
  while(1){
    sem_wait(service)
    sem_wait(mutex)
    readcount += 1;
    if (readcount == 1)
      sem_wait(writer_or_readers)
    sem_signal(service)
    sem_signal(mutex)
    data:=read(file)
    sem_wait(mutex)
    readcount -= 1;
    if (readcount == 0)
      sem_signal(writer_or_readers)
    sem_signal(mutex)
```
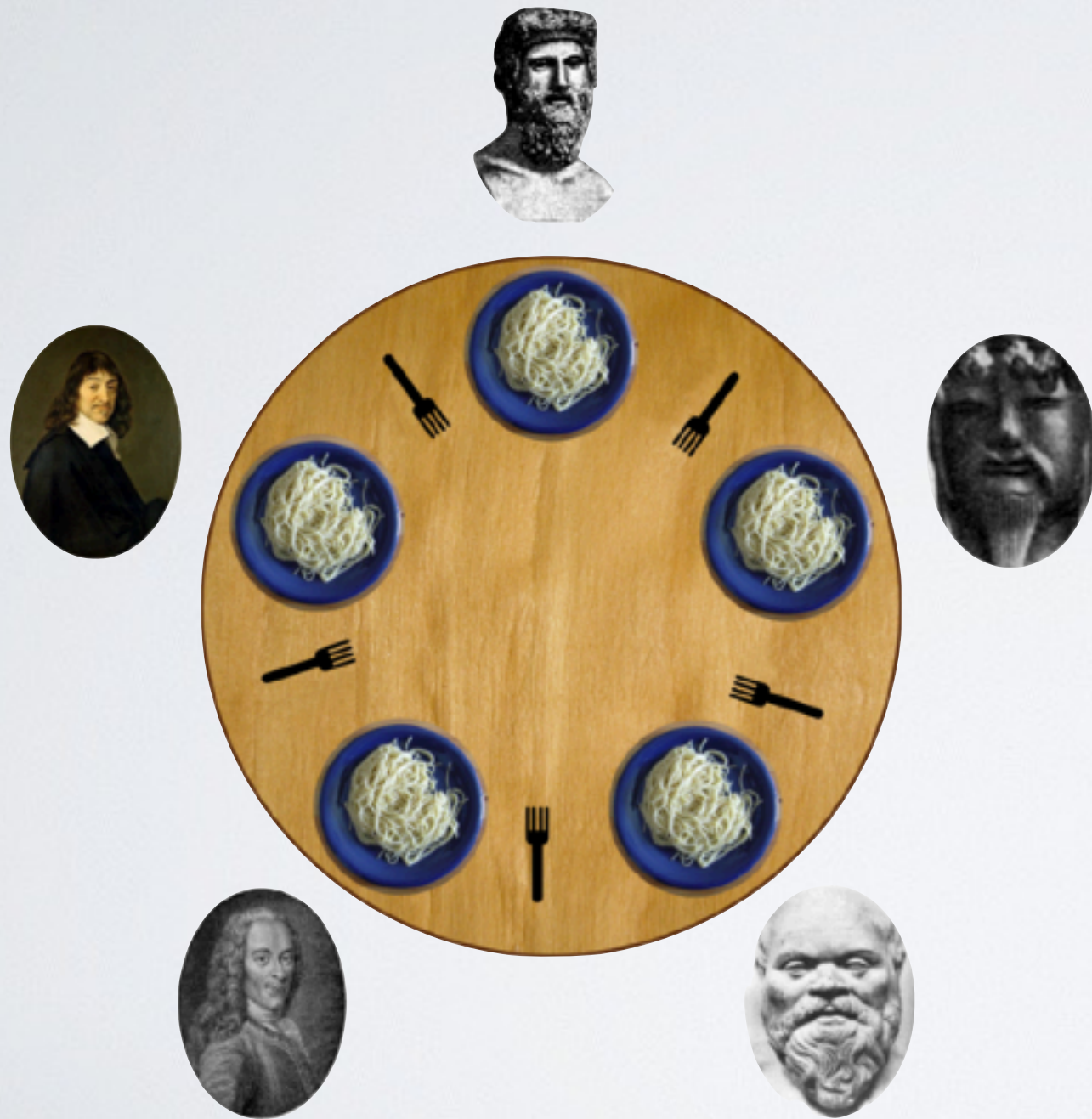
Dining Philosophers

image from *wikipedia*