علیرضا زارع زین ابادی ۹۹۳۱۰۲۲
امیرفاضل کوزه گر کالجی ۹۹۳۱۰۹۹

بخش اول)

در این مسئله باید از shared memory برای شمارنده ها و mutex ها استفاده کنیم تا بین پردازه ها بتوانیم یک هماهنگی ایجاد کنیم به همین منظور از یک ساختار استفاده کردیم تا هم شمارنده ها و هم قفل را نگهداری کنیم.

کد : در پوشه reader_writer

خروجی :

```
azare242@ahora-pc ~/Desktop/os/lab6/reader_writer
$ ./main
shared memory creation process running...

WRITER 26097 STARTS on counter 1

READER 26098 STARTS on counter 1

READER 26099 STARTS on counter 1

READER 26098 STARTS on counter 1

READER 26099 STARTS on counter 1

READER 26098 STARTS on counter 1

WRITER 26097 STARTS on counter 2

READER 26099 STARTS on counter 2

READER 26098 STARTS on counter 2

WRITER 26097 STARTS on counter 3

READER 26099 STARTS on counter 3

READER 26098 STARTS on counter 3

WRITER 26097 STARTS on counter 4

READER 26099 STARTS on counter 4


READER 26098 STARTS on counter 5
WRITER 26097 STARTS on counter 5

READER 26099 STARTS on counter 5
```

علیرضا زارع زین ابادی ۹۹۳۱۰۲۲
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آزمایشگاه سیستم های عامل
گزارشکار آزمایش ۶

بخش دوم)
در این مسئله یک سمافور برای برداشتن و ازاد کردن چنگال ها و یک ارایه از سمافور برای هر چنگال استفاده میکنیم تا هماهنگی بین فیلسوف ها (در برنامه ریسمان) برقرار شود
کد : پوشه philsophers
خروجی بعد از گذشت چند دور از اجرای برنامه:

```
azare242@ahora-pc ~/Desktop/os/lab6/philospher
$ ./main
philsopher number 1 is thinking
philsopher number 2 is thinking
philsopher number 3 is thinking
philsopher number 4 is thinking
philsopher number 5 is thinking
philsopher number 1 is hungry
philsopher number 2 is hungry
philsopher number 3 is hungry
philsopher number 4 is hungry
philsopher number 5 is hungry
philsopher number 5 takes fork 4 and 5
philsopher number 5 is eating
philsopher num 5 releases fork_4 and fork_5
philsopher number 5 is thinking
philsopher number 4 takes fork 3 and 4
philsopher number 4 is eating
philsopher number 1 takes fork 5 and 1
philsopher number 1 is eating
philsopher num 4 releases fork_3 and fork_4
philsopher number 4 is thinking
philsopher number 3 takes fork 2 and 3
philsopher number 3 is eating
philsopher number 5 is hungry
philsopher num 1 releases fork_5 and fork_1
philsopher number 1 is thinking
philsopher number 5 takes fork 4 and 5
philsopher number 5 is eating
philsopher number 4 is hungry
philsopher num 3 releases fork_2 and fork_3
philsopher number 3 is thinking
philsopher number 2 takes fork 1 and 2
philsopher number 2 is eating
philsopher number 1 is hungry
philsopher num 5 releases fork_4 and fork_5
philsopher number 5 is thinking
philsopher number 4 takes fork 3 and 4
philsopher number 4 is eating
philsopher number 3 is hungry
philsopher num 2 releases fork_1 and fork_2
philsopher number 2 is thinking
philsopher number 1 takes fork 5 and 1
philsopher number 1 is eating
philsopher number 5 is hungry
philsopher num 4 releases fork_3 and fork_4
philsopher number 4 is thinking
philsopher number 3 takes fork 2 and 3
philsopher number 3 is eating
philsopher number 2 is hungry
philsopher num 1 releases fork_5 and fork_1
philsopher number 1 is thinking
```