Semaphore Readers Writers Pattern or Light switch

Synopsis

```
use Semaphore::ReadersWriters;

my Semaphore::ReadersWriters $rw .= new;
$rw.add-mutex-names('shv');
my $shared-var = 10;

# After creating threads ...
# Some writer thread
$rw.writer( 'shv', {$shared-var += 2});

# Some reader thread
say 'Shared var is ', $rw.reader( 'shv', {$shared-var;});
```

```
Shared var is 12
```

Documentation

The Markdown files in this package uses the atom plugin **Markdown Preview Enhanced**. E.g. the synopsis can be run by placing the cursor in the code and type `shift-enter' or, if not possible, look for the readme pdf in doc)

- README pdf
- ReadersWriters pdf

TODO

- Implement other variants of this pattern.
    - Readers priority variant.
    - No writer starvation variant.
    - Document return value restrictions. Only items, no List.

CHANGELOG

See [semantic versioning](). Please note point 4. on that page: *Major version zero (0.y.z) is for initial development. Anything may change at any time. The public API should not be considered stable.*

- 0.2.6
    - Methods `reader` and `writer` returned a failure object when things are wrong. This poses a problem in some situations. Now it will throw an exception.
- 0.2.5
    - Changed last method into check-mutex-names() to test for more than one name.
- 0.2.4
    - Added convenience method check-mutex-name().
- 0.2.3
    - add-mutex-names throws an exception when keys are reused
- 0.2.2
    - Added $.debug to show messages about the actions. This will be deprecated later when I am confident enough that everything works well enough.
- 0.2.1
    - Removed debugging texts to publish class
- 0.2.0

- ◦ Documentation
- ◦ Bugfixes, hangups caused by overuse of same semaphores. Added more semaphores per critical section.
- ◦ Preparations for other variations of this pattern
- • 0.1.0 First tests
- • 0.0.1 Setup

Other info

Perl6 version

Tested on the latest version of perl6 on moarvm

Install

Install package using zef

```
zef install Semaphore::ReadersWriters
```

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