Perl 6.d (Diwali)

Coming in 2018

New in 6.d: Thread-Safe, Atomic Operations

We now have a new type—`atomicint`—and a new set of atomic routines for it. Atomic operations can be safely performed from multiple threads at the same time, without any locking. The new functions are `atomic-assign`, `atomic-fetch`, `atomic-fetch-inc`, `atomic-fetch-dec`, `atomic-fetch-add`, `atomic-fetch-sub`, `atomic-inc-fetch`, `atomic-dec-fetch`, and `cas`.

Unicode lovers rejoice! These are also available as fancy-Unicode operators that use ⚛ U+269B ATOM SYMBOL: infix ⚛=, prefix ⚛, prefix ++⚛, postfix ⚛++, prefix --⚛, postfix ⚛--, infix ⚛+=, infix ⚛-=, and infix ⚛−=

```
# Regular ops: not thread safe! Wrong result!
my int $total = 0;
await start { for ^20000 { $total++ } } xx 10;
say $total; # OUTPUT: «188758␤»

# Using atomic operations: thread-safe and correct
my atomicint $atotal = 0;
await start { for ^20000 { $atotal⚛++ } } xx 10;
say $atotal; # OUTPUT: «200000␤»
```