

Definition : Monoid

A monoid is a binary associative operation with an identity. Follows 2 laws: associativity and identity.

Integer form a monoid under summation and multiplication. Lists form a monoid under concatenation.

Orphan instances

Writing orphan instances should be avoided *at all costs*.

An orphan instance is when an instance is defined for a datatype and typeclass, but not in the same module as either the declaration of the typeclass or the datatype. If not own a typeclass, newtype it!

1. Put the instance in the same module as the type.
2. Put the instance in the same module as the typeclass definition.
3. Neither the type nor the typeclass are our, then newtype.

Definition : Semigroup

Semigroup provides a binary associative operation.