Alphabetic List of Existential Paths

Standard Dictionary for Path Semantics

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Binary Operators

$\exists(< k) <=>$ if k == 0 { id } else { $true_1$ }
$\exists\exists(< k) <=>$ if k == 0 { $true_1$ } else { id }
$\exists(<= k) <=> true_1$
$\exists(> k) <=> true_1$
$\exists(>= k) <=>$ if k == 0 { id } else { $true_1$ }
$\exists\exists(>= k) <=>$ if k == 0 { $true_1$ } else { id }
$\exists(+ k) <=> \exists add(k)$
$\exists(\cdot\ k) <=> \exists mul_{\mathbb{N}}(k)$
$\exists(\% k) <=> (< k)$

A

$\exists add <=> true_1$
$\exists add\{[even]\ a, [even]\ b\} := \backslash(x) =$ if x == 0 { a $\wedge$ b } else { (a == b) == even(x) }
$\exists\exists add\{[even]\ \_, [even]\ \_\} <=> true_1$
$\exists add\{[odd]\ a, [odd]\ b\} := \backslash(x) = \neg$if x == 0 { a $\wedge$ b } else { (a == b) == even(x) }
$\exists\exists add\{[odd]\ \_, [odd]\ \_\} <=> true_1$
$\exists add(k) <=> \exists(+ k) <=> (>= k)$
$\exists\exists add(k) <=> \exists\exists(+ k) <=>$ if k == 0 { id } else { $true_1$ }
$\exists and <=> true_1$

D

$\exists div <=> (\neg= 0)$
$\exists div(k) <=> (\neg= 0)$

E

$\exists eq <=> true_1$
$\exists eq(k) <=> \exists(= k) <=> true_1$

F

∃false$_1$ <=> not

G

∃ge <=> true$_1$
∃ge(k) <=> ∃(<= k) <=> true$_1$
∃gt <=> true$_1$
∃gt(k) <=> ∃(< k) <=> if k == 0 { id } else { true$_1$ }

I

∃id <=> true$_1$

L

∃le <=> true$_1$
∃le(k) <=> ∃(>= k) <=> if k == 0 { id } else { true$_1$ }
∃len <=> true$_1$
∃lt <=> true$_1$
∃lt(k) <=> ∃(> k) <=> true$_1$

N

∃neg <=> true$_1$
∃not <=> true$_1$
∃mul$_\mathbb{N}$ <=> true$_1$
∃mul$_\mathbb{N}$(k) <=> ∃(· k) <=> \(x) = (x == 0) || (x % k) == 0
∃∃mul$_\mathbb{N}$(k) <=> ∃∃(· k) <=> if k == 0 { true$_1$ } else if k == 1 { id } else { true$_1$ }

O

∃or <=> true$_1$

S

∃sequence(0, 2) <=> even
∃sequence(1, 2) <=> odd
∃sequence(a, b) <=> linear(a, b)
∃sub$_\mathbb{N}$ <=> true$_1$

T

$\exists true_1 <=> id$

U

$\exists unit <=> true_1$

X

$\exists xor <=> true_1$