

# Languages-beta: OC-L-Funcons-Index \*

The PLaNCompS Project

OC-L-Funcons-Index.cbs | PLAIN | PRETTY

## OUTLINE

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\*Suggestions for improvement: [plancomps@gmail.com](mailto:plancomps@gmail.com).  
Reports of issues: <https://github.com/plancomps/CBS-beta/issues>.

# Computations

## Normal computation

### Flowing

- [ *Funcon* sequential
- Alias* seq
- Funcon* effect
- Funcon* if-true-else
- Alias* if-else
- Funcon* while-true
- Alias* while ]

### Giving

- [ *Funcon* initialise-giving
- Funcon* give
- Funcon* given
- Funcon* left-to-right-map
- Funcon* interleave-map ]

### Binding

- [ *Type* environments
- Alias* envs
- Datatype* identifiers
- Alias* ids
- Funcon* initialise-binding
- Funcon* bound-value
- Alias* bound
- Funcon* scope
- Funcon* accumulate
- Funcon* collateral
- Funcon* recursive ]

### Storing

- [ *Funcon* initialise-storing
- Datatype* variables
- Alias* vars
- Funcon* allocate-initialised-variable
- Alias* alloc-init
- Funcon* assign
- Funcon* assigned ]

### Interacting

#### Input

- [ *Funcon* read ]

#### Output

- [ *Funcon* print ]

## Abnormal computation

### Failing

```
[ Funcon finalise-failing
  Funcon fail
  Funcon else
  Funcon checked
  Funcon check-true ]
```

### Throwing

```
[ Funcon finalise-throwing
  Funcon throw
  Funcon handle-thrown ]
```

## Values

### Value Types

```
[ Type values
  Alias vals
  Funcon is-in-type
  Alias is
  Funcon when-true
  Alias when
  Type ground-values
  Alias ground-vals
  Funcon is-equal
  Alias is-eq ]
```

## Primitive values

### Booleans

```
[ Datatype booleans
  Alias bools
  Funcon true
  Funcon false
  Funcon not
  Funcon and
  Funcon or ]
```

## Integers

[ *Type* integers  
  *Alias* ints  
  *Type* bounded-integers  
  *Alias* bounded-ints  
  *Type* natural-numbers  
  *Alias* nats  
*Funcon* natural-successor  
  *Alias* nat-succ  
*Funcon* integer-add  
  *Alias* int-add  
*Funcon* integer-subtract  
  *Alias* int-sub  
*Funcon* integer-multiply  
  *Alias* int-mul  
*Funcon* integer-divide  
  *Alias* int-div  
*Funcon* integer-modulo  
  *Alias* int-mod  
*Funcon* integer-absolute-value  
  *Alias* int-abs  
*Funcon* integer-negate  
  *Alias* int-neg  
*Funcon* integer-is-less  
  *Alias* is-less  
*Funcon* integer-is-less-or-equal  
  *Alias* is-less-or-equal  
*Funcon* integer-is-greater  
  *Alias* is-greater  
*Funcon* integer-is-greater-or-equal  
  *Alias* is-greater-or-equal  
*Funcon* decimal-natural  
  *Alias* decimal  
*Funcon* integer-sequence ]

## Floats

```
[ Datatype float-formats
  Funcon binary64
    Type floats
  Funcon float-negate
  Funcon float-absolute-value
  Funcon float-add
  Funcon float-subtract
  Funcon float-multiply
  Funcon float-divide
  Funcon float-remainder
  Funcon float-sqrt
  Funcon float-float-power
  Funcon float-floor
  Funcon float-ceiling
  Funcon float-truncate
  Funcon float-log
  Funcon float-log10
  Funcon float-exp
  Funcon float-sin
  Funcon float-cos
  Funcon float-tan
  Funcon float-asin
  Funcon float-acos
  Funcon float-atan
  Funcon float-sinh
  Funcon float-cosh
  Funcon float-tanh
  Funcon float-atan2 ]
```

## Characters

```
[ Type characters
  Alias chars
  Funcon unicode-character
    Alias unicode-char
  Funcon ascii-character
    Alias ascii-char
  Funcon backspace
  Funcon horizontal-tab
  Funcon line-feed
  Funcon carriage-return
  Funcon backslash ]
```

## The null value

```
[ Datatype null-type
  Funcon null-value
  Alias null ]
```

## Composite values

### Sequences of values

```
[ Funcon length  
  Funcon index  
  Funcon reverse  
  Funcon n-of  
  Funcon intersperse ]
```

### Tuples

```
[ Datatype tuples  
  Funcon tuple-elements ]
```

### Lists

```
[ Datatype lists  
  Funcon list  
  Funcon list-elements  
  Funcon list-nil  
  Alias nil  
  Funcon list-cons  
  Alias cons  
  Funcon list-head  
  Alias head  
  Funcon list-tail  
  Alias tail  
  Funcon list-length  
  Funcon list-append ]
```

### Strings

```
[ Type strings  
  Funcon string-append  
  Funcon to-string ]
```

### Vectors

```
[ Datatype vectors  
  Funcon vector  
  Funcon vector-elements ]
```

## Bits and bit vectors

[ *Datatype* bit-vectors  
  *Funcon* bit-vector-not  
  *Funcon* bit-vector-and  
  *Funcon* bit-vector-or  
  *Funcon* bit-vector-xor  
  *Funcon* bit-vector-shift-left  
  *Funcon* bit-vector-logical-shift-right  
  *Funcon* bit-vector-arithmetic-shift-right  
  *Funcon* integer-to-bit-vector  
  *Funcon* bit-vector-to-integer  
  *Funcon* signed-bit-vector-maximum  
  *Funcon* signed-bit-vector-minimum ]

## Sets

[ *Funcon* set  
  *Funcon* set-elements  
  *Funcon* is-in-set ]

## Maps

[ *Type* maps  
  *Funcon* map  
  *Funcon* map-elements  
  *Funcon* map-lookup  
    *Alias* lookup  
  *Funcon* map-domain  
    *Alias* dom  
  *Funcon* map-override  
  *Funcon* map-unite ]

## Records

[ *Datatype* records  
  *Funcon* record  
  *Funcon* record-map  
  *Funcon* record-select ]

## Variants

[ *Datatype* variants  
  *Funcon* variant ]

## Abstraction values

### Generic abstractions

[ *Funcon* abstraction  
  *Funcon* closure ]

## Functions

```
[ Datatype functions  
  Funcon function  
  Funcon apply  
  Funcon curry ]
```

## Patterns

```
[ Datatype patterns  
  Funcon pattern  
  Funcon pattern-any  
  Funcon pattern-bind  
  Funcon pattern-else  
  Funcon pattern-unite  
  Funcon match  
  Funcon match-loosely  
  Funcon case-match ]
```