

Funcons-beta: Breaking *

The PPlanCompS Project

Breaking.cbs | PLAIN | PRETTY

Breaking

```
[ Datatype  breaking
  Funcon    broken
  Funcon    finalise-breaking
  Funcon    break
  Funcon    handle-break ]
```

Meta-variables $T <: \text{values}$

Datatype `breaking` ::= `broken`

`broken` is a reason for abrupt termination.

Funcon `finalise-breaking`($X : \Rightarrow T$) : $\Rightarrow T$ | `null-type`
 \rightsquigarrow `finalise-abrupting`(X)

`finalise-breaking`(X) handles abrupt termination of X due to executing `break`.

Funcon `break` : \Rightarrow `empty-type`
 \rightsquigarrow `abrupt`(`broken`)

`break` abruptly terminates all enclosing computations until it is handled.

Funcon `handle-break`($_ : \Rightarrow \text{null-type}$) : $\Rightarrow \text{null-type}$

`handle-break`(X) terminates normally when X terminates abruptly for the reason `broken`.

Rule
$$\frac{X \xrightarrow{\text{abrupted}(_)} X'}{\text{handle-break}(X) \xrightarrow{\text{abrupted}(_)} \text{handle-break}(X')}$$

Rule
$$\frac{X \xrightarrow{\text{abrupted}(\text{broken})} _}{\text{handle-break}(X) \xrightarrow{\text{abrupted}(_)} \text{null-value}}$$

Rule
$$\frac{X \xrightarrow{\text{abrupted}(V:\sim \text{breaking})} X'}{\text{handle-break}(X) \xrightarrow{\text{abrupted}(V)} \text{handle-break}(X')}$$

Rule
$$\text{handle-break}(\text{null-value}) \rightsquigarrow \text{null-value}$$

*Suggestions for improvement: plancomps@gmail.com.
Reports of issues: <https://github.com/plancomps/CBS-beta/issues>.