

Languages-beta:  
OC-L-11-Module-Implementations

# The P<sub>PlanCompS</sub> Project

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Language "OCaml Light"

## 11 Module implementations

*Syntax UI* : unit-implementation ::= (semicolon-pair\* module-items semicolon-pair\*)?

```
MIS : module-items ::= definition  
                        | expr  
                        | module-items semicolon-pair* module-item
```

$$MI : \text{module-item} ::= \text{definition} \mid \text{semicolon-pair expr}$$

```
D : definition ::= let-definition
                  | type-definition
                  | exception-definition
```

*Lexis SCP* : semicolon-pair ::= ; ;

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

Semantics `interpret`  $\llbracket UI : \text{unit-implementation} \rrbracket : \Rightarrow \text{environments}$

Rule `interpret`  $\llbracket \rrbracket =$

`map` ( )

Rule `interpret`  $\llbracket SCP_1^* MIS SCP_2^* \rrbracket =$

`handle-thrown`(`scope`(`ocaml-light-core-library`,  
    `accumulate`(`define-or-evaluate-items`  $\llbracket MIS \rrbracket$ )),  
    `sequential`(`print`("Uncaught exception: ",  
        `ocaml-light-to-string` given,  
        "\n"),  
    `map` ( )))

Semantics `define-or-evaluate-items`  $\llbracket _ : \text{module-items} \rrbracket : (\Rightarrow \text{envs})^+$

Rule `define-or-evaluate-items`  $\llbracket LD \rrbracket =$

`ocaml-light-define-and-display` `define-values`  $\llbracket LD \rrbracket$

Rule `define-or-evaluate-items`  $\llbracket TDS \rrbracket =$

`define-types`  $\llbracket TDS \rrbracket$

Rule `define-or-evaluate-items`  $\llbracket ED \rrbracket =$

`define-exception`  $\llbracket ED \rrbracket$

Rule `define-or-evaluate-items`  $\llbracket E \rrbracket =$

`ocaml-light-evaluate-and-display` `evaluate`  $\llbracket E \rrbracket$

Rule `define-or-evaluate-items`  $\llbracket MIS SCP^* D \rrbracket =$

(`define-or-evaluate-items`  $\llbracket MIS \rrbracket$ ,  
  `define-or-evaluate-items`  $\llbracket D \rrbracket$ )

Rule `define-or-evaluate-items`  $\llbracket MIS SCP^* SCP E \rrbracket =$

(`define-or-evaluate-items`  $\llbracket MIS \rrbracket$ ,  
  `define-or-evaluate-items`  $\llbracket E \rrbracket$ )