

Script generated by TTT

Title: Seidl: Functional Programming and Verification (09.11.2018)

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2.2 Expressions

```
# 3+4;;  
- : int = 7  
# 3+  
  4;;  
- : int = 7  
#
```

- At `#`, the interpreter is waiting for input.
- The `;;` causes evaluation of the given input.
- The result is computed and returned together with its type.

Advantage: Individual functions can be tested without re-compilation !

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Another definition of `seven` does **not** assign a new value to `seven`, but creates a **new** variable with the name `seven`.

```
# let seven = 42;;  
val seven : int = 42  
# seven;;  
- : int = 42  
# let seven = "seven";;  
val seven : string = "seven"
```

The old variable is now **hidden** (but still there)!

Apparently, the new variable may even have a **different type**.

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Simultaneous Definition of Variables

```
# let (x,y) = (3,4.0);;  
val x : int = 3  
val y : float = 4.  
# let (3,y) = (3,4.0);;  
val y : float = 4.0
```

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Simultaneous Definition of Variables

```
# let (x,y) = (3,4.0);;  
val x : int = 3  
val y : float = 4.
```

```
# let (3,y) = (3,4.0);;  
val y : float = 4.0
```

$\{7+2\}$ $\{1\}$
unit

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Records: Example

```
# type person = {given:string; sur:string; age:int};;  
type person = { given : string; sur : string; age : int; }  
# let paul = { given="Paul"; sur="Meier"; age=24 };;  
val paul : person = {given = "Paul"; sur = "Meier"; age = 24}  
# let hans = { sur="kohl"; age=23; given="hans"};;  
val hans : person = {given = "hans"; sur = "kohl"; age = 23}  
# let hans_i = {age=23; sur="kohl"; given="hans"}  
val hans_i : person = {given = "hans"; sur = "kohl"; age = 23}  
# hans=hans_i;;  
- : bool = true
```

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Remark

- ... Records are tuples with named components whose ordering, therefore, is irrelevant.
- ... As a new type, a record must be introduced before its use by means of a `type` declaration.
- ... Type names and record components start with a `small` letter.

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