

Last login: Mon Feb 26 13:23:13 on ttys007

carbon:\$ utop

Welcome to utop version 2.0.2 (using OCaml version 4.06.0)!

Type #utop_help for help about using utop.

```
-( 13:51:51 )-< command 0 >-----{ counter: 0 }-
utop # #use "arithmetic.ml";;
type expr =
  Plus of expr * expr
  | Mult of expr * expr
  | Neg of expr
  | Int of int
val eval : expr -> int = <fun>
val e1 : expr = Plus (Int 1, Mult (Int 2, Int 3))
-( 13:51:52 )-< command 1 >-----{ counter: 0 }-
utop # e1 ;;
- : expr = Plus (Int 1, Mult (Int 2, Int 3))
-( 13:51:55 )-< command 2 >-----{ counter: 0 }-
utop # eval e1 ;;
- : int = 7
-( 13:51:58 )-< command 3 >-----{ counter: 0 }-
utop # #use "arithmetic.ml";;
type expr =
  Plus of expr * expr
  | Mult of expr * expr
  | Sub of expr * expr
  | Div of expr * expr
  | Neg of expr
  | Int of int
val eval : expr -> int = <fun>
val e1 : expr = Plus (Int 1, Mult (Int 2, Int 3))
val e2 : expr = Div (Mult (Int 2, Sub (Int 5, Int 3)), Int 2)
-( 13:52:00 )-< command 4 >-----{ counter: 0 }-
utop # eval e2 ;;
- : int = 2
-( 13:54:59 )-< command 5 >-----{ counter: 0 }-
utop # #use "arithmetic.ml";;
type expr =
  Plus of expr * expr
  | Mult of expr * expr
  | Sub of expr * expr
  | Div of expr * expr
  | Neg of expr
  | Int of int
val eval : expr -> int = <fun>
val e1 : expr = Plus (Int 1, Mult (Int 2, Int 3))
val e2 : expr = Div (Mult (Int 2, Sub (Int 5, Int 3)), Int 2)
-( 13:55:05 )-< command 6 >-----{ counter: 0 }-
```

```

utop # #use "expr_let.ml";;
type expr =
  Plus of expr * expr
| Mult of expr * expr
| Sub of expr * expr
| Div of expr * expr
| Neg of expr
| Int of int
| Let of string * expr * expr
| Id of string
val lookup : string -> (string * int) list -> int = <fun>
val eval : expr -> (string * int) list -> int = <fun>
val e3 : expr =
  Plus (Int 3, Let ("x", Plus (Int 4, Int 5), Mult (Id "x", Int 5)))
-( 14:10:10 )-< command 7 >-----{ counter: 0 }-
utop # eval e3 ;;
- : (string * int) list -> int = <fun>
-( 14:10:19 )-< command 8 >-----{ counter: 0 }-
utop # eval e3 [] ;;
- : int = 48
-( 14:10:26 )-< command 9 >-----{ counter: 0 }-
utop #

```

Arg	Array	ArrayLabels	Assert_failure	Bigarray	Buffer	Bytes	BytesLabels	Callbac
-----	-------	-------------	----------------	----------	--------	-------	-------------	---------