```
Last login: Fri Jan 19 13:18:03 on ttys006
carbon:$ ssh csel-kh1260-05.cselabs.umn.edu
evw@csel-kh1260-05.cselabs.umn.edu's password:
------------------------------------------------------------------------
        COLLEGE OF SCIENCE AND ENGINEERING WORKSTATION
If you are not authorized to access this system, disconnect now.

        YOU SHOULD HAVE NO EXPECTATION OF PRIVACY

By continuing, you agree to the terms outlined in the Acceptable Use
Policy (AUP) governing use of this workstation.  The AUP may be found
online at

        https://cseit.umn.edu/knowledge-help/acceptable-use-policy

As a user of this system, it is YOUR responsibility to be familiar
with the information contained in the AUP.

Users requiring assistance should talk to the operator on duty:
They can be reached by any of the following means:
        email: operator@cselabs.umn.edu
        or call 612-625-0876  The phones in the labs directly call operator.
        You may also visit them in Keller Hall 1-201

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Last login: Fri Jan 19 13:17:29 2018 from 10.128.129.144
csel-kh1260-05:~ evw$ cd csci2041/
csel-kh1260-05:csci2041 evw$ utop
        Welcome to utop version 1.18.1 (using OCaml version 4.02.3)!

Type #utop_help for help about using utop.

-( 13:38:08 )-< command 0 >-------------------------------------{ counter: 0 }-
utop # 1 + 2 ;;
- : int = 3
-( 13:38:08 )-< command 1 >-------------------------------------{ counter: 0 }-
utop # 1 + 2 * 3 ;;
- : int = 7
-( 13:38:42 )-< command 2 >-------------------------------------{ counter: 0 }-
utop # 3 -4 ;;
- : int = -1
-( 13:39:14 )-< command 3 >-------------------------------------{ counter: 0 }-
utop # 5 < 3 + 4 ;;
- : bool = true
-( 13:39:20 )-< command 4 >-------------------------------------{ counter: 0 }-
utop # 3.14 ;;
- : float = 3.14
-( 13:39:31 )-< command 5 >-------------------------------------{ counter: 0 }-
utop # 3.14 + 2.1 ;;
Error: This expression has type float but an expression was expected of type
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         int
-( 13:39:45 )-< command 6 >-------------------------------------{ counter: 0 }-
utop # 3.14 +. 2.1 ;;
- : float = 5.24
-( 13:39:56 )-< command 7 >-------------------------------------{ counter: 0 }-
utop # 3.0 *. 2.0 ;;
- : float = 6.
-( 13:40:18 )-< command 8 >-------------------------------------{ counter: 0 }-
utop # "Hello" ;;
- : bytes = "Hello"
-( 13:40:33 )-< command 9 >-------------------------------------{ counter: 0 }-
utop # "Hello"  ^ " class !";;
- : bytes = "Hello class !"
-( 13:41:13 )-< command 10 >------------------------------------{ counter: 0 }-
utop # 'c' ;;
- : char = 'c'
-( 13:41:29 )-< command 11 >------------------------------------{ counter: 0 }-
utop # 4 /2 ;;
- : int = 2
-( 13:41:35 )-< command 12 >------------------------------------{ counter: 0 }-
utop # 4 / 0 ;;
Exception: Division_by_zero.
-( 13:42:09 )-< command 13 >------------------------------------{ counter: 0 }-
utop # Char.uppercase 'c' ;;
- : char = 'C'
-( 13:42:12 )-< command 14 >------------------------------------{ counter: 0 }-
utop # let x = 3 in x + 4 ;;
- : int = 7
-( 13:43:23 )-< command 15 >------------------------------------{ counter: 0 }-
utop # let x = 4 in let y = 6 in x + y ;;
- : int = 10
-( 13:45:05 )-< command 16 >------------------------------------{ counter: 0 }-
utop # let x = 8 ;;
val x : int = 8
-( 13:45:29 )-< command 17 >------------------------------------{ counter: 0 }-
utop # x + 4 ;;
- : int = 12
-( 13:45:58 )-< command 18 >------------------------------------{ counter: 0 }-
utop # let y : int = 9 ;;
val y : int = 9
-( 13:46:10 )-< command 19 >------------------------------------{ counter: 0 }-
utop # let y : float = 9 ;;
Error: This expression has type int but an expression was expected of type
         float
-( 13:48:22 )-< command 20 >------------------------------------{ counter: 0 }-
utop # let x = 10 ;;
val x : int = 10
-( 13:48:55 )-< command 21 >------------------------------------{ counter: 0 }-
utop # x ;;
- : int = 10
-( 13:50:24 )-< command 22 >------------------------------------{ counter: 0 }-
utop # let y : float = 9.0 ;;
val y : float = 9.
```

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-( 13:50:26 )-< command 23 >-----------------------------------------{ counter: 0 }-
utop # let inc = fun x -> x + 1 ;;
val inc : int -> int = <fun>
-( 13:52:43 )-< command 24 >-----------------------------------------{ counter: 0 }-
utop # inc 4 ;;
- : int = 5
-( 13:53:53 )-< command 25 >-----------------------------------------{ counter: 0 }-
utop # let sq = fun x -> x * x ;;
val sq : int -> int = <fun>
-( 13:53:55 )-< command 26 >-----------------------------------------{ counter: 0 }-
utop # sq 6 ;;
- : int = 36
-( 13:54:08 )-< command 27 >-----------------------------------------{ counter: 0 }-
utop # let circle_area = fun r -> 3.1415 *. r *. r ;;
val circle_area : float -> float = <fun>
-( 13:54:10 )-< command 28 >-----------------------------------------{ counter: 0 }-
utop # circle_area 4.5 ;;
- : float = 63.6153750000000073
-( 13:58:50 )-< command 29 >-----------------------------------------{ counter: 0 }-
utop # float_of_int 4 ;;
- : float = 4.
-( 13:59:02 )-< command 30 >-----------------------------------------{ counter: 0 }-
utop # float_of_int ;;
- : int -> float = <fun>
-( 14:00:05 )-< command 31 >-----------------------------------------{ counter: 0 }-
utop # float_of_int ;;
- : int -> float = <fun>
-( 14:00:30 )-< command 32 >-----------------------------------------{ counter: 0 }-
utop # let dec x = x - 1 ;;
val dec : int -> int = <fun>
-( 14:00:52 )-< command 33 >-----------------------------------------{ counter: 0 }-
utop # dec 6 ;;
- : int = 5
-( 14:01:33 )-< command 34 >-----------------------------------------{ counter: 0 }-
utop # let add x y = x + y ;;
val add : int -> int -> int = <fun>
-( 14:01:37 )-< command 35 >-----------------------------------------{ counter: 0 }-
utop # let add = fun x -> fun y -> x + y ;;
val add : int -> int -> int = <fun>
-( 14:02:05 )-< command 36 >-----------------------------------------{ counter: 0 }-
utop # add ;;
- : int -> int -> int = <fun>
-( 14:03:56 )-< command 37 >-----------------------------------------{ counter: 0 }-
utop # add 3 ;;
- : int -> int = <fun>
-( 14:04:01 )-< command 38 >-----------------------------------------{ counter: 0 }-
utop # let f = add 3 ;;
val f : int -> int = <fun>
-( 14:04:10 )-< command 39 >-----------------------------------------{ counter: 0 }-
utop # f 5 ;;
- : int = 8
-( 14:04:22 )-< command 40 >-----------------------------------------{ counter: 0 }-
utop # let i = add ;;
```

```
val i : int -> int -> int = <fun>
-( 14:04:27 )-< command 41 >-------------------------------------{ counter: 0 }-
utop # i 1 ;;
- : int -> int = <fun>
-( 14:08:21 )-< command 42 >-------------------------------------{ counter: 0 }-
utop # add 3 ;;
- : int -> int = <fun>
-( 14:08:25 )-< command 43 >-------------------------------------{ counter: 0 }-
utop # (add 3) 7 ;;
- : int = 10
-( 14:10:41 )-< command 44 >-------------------------------------{ counter: 0 }-
utop # let f = fun x -> let y = 4 in x + y ;;
val f : int -> int = <fun>
-( 14:11:06 )-< command 45 >-------------------------------------{ counter: 0 }-
utop #
```

Arg	Arith_status	Array	ArrayLabels	Assert_failure	Big_int	Bigarray	Buffer	Byte