```
Last login: Wed Mar 21 13:18:03 on ttys005
carbon:$ pwd
/project/evw/Teaching/18_Spring_2041/carbon-repos
/public-class-repo/Sample Programs/Sec_10_3-35pm
carbon:$ utop
```

```
me to utop version 2.0.2 (using OCaml version 4.0
```

```
Type #utop_help for help about using utop.

-( 15:54:24 )-< command 0 >————{ counter: 0 }—
-( 15:54:24 )-< command 0 >————{ counter: 0 }—
utop # #mod_use "ourList.ml";;
module OurList :
  sig
    val map : ('a -> 'b) -> 'a list -> 'b list
    val filter :
      ('a -> bool) -> 'a list -> 'a list
    val foldr :
      ('a -> 'b -> 'b) -> 'b -> 'a list -> 'b
    val foldl :
      ('a -> 'b -> 'a) -> 'a -> 'b list -> 'a
    val is_elem : 'a -> 'a list -> bool
    val explode : string -> char list
    val implode : char list -> string
  end
-( 15:54:24 )-< command 1 >————{ counter: 0 }—
utop # #use "usingLists.ml";;
val length : 'a list -> int = <fun>
val sum : int list -> int = <fun>
Hello
```

```
10
```
```
utop # #quit ;;
carbon:$ ocamlbuild usingLists.byte
Finished, 5 targets (0 cached) in 00:00:00.
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$ ls
Intervals/              group_by_3.ml
_build/                 higher_order.ml
compare_bintrees.ml     inductive.ml
cond.ml                 lazy.ml
dllist.ml               map.ml
expr/                   ourList.ml
filter.ml               simple.ml
find_and_lookup.ml      usingLists.byte@
fold.ml                 usingLists.ml
generators.py           usingLists.ml~
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
```

```
carbon:$ ./usingLists.byte
Hello
10
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$ ocamlbuild usingLists.native
Finished, 7 targets (4 cached) in 00:00:00.
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$ ./usingLists.native
Hello
10
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$ cd Intervals/
carbon:$ cd v1
```

```
carbon:$
carbon:$
carbon:$
carbon:$ ocamlbuild useIntInterval.byte
Finished, 5 targets (0 cached) in 00:00:00.
carbon:$ ./useIntInterval.byte
An interval: (3, 4)
Another interval: (3, 6)
Their intresection: (3, 4)
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$ ls
_build/                        useIntInterval.byte@
intInterval.ml                 useIntInterval.ml
carbon:$ ls _build/
_digests
_log
intInterval.cmi
intInterval.cmo
intInterval.ml
intInterval.ml.depends
ocamlc.where
useIntInterval.byte*
useIntInterval.cmi
useIntInterval.cmo
useIntInterval.ml
```

```
useIntInterval.ml.depends
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$ up
/project/evw/Teaching/18_Spring_2041/carbon-repos
/public-class-repo/Sample Programs/Sec_10_3-35pm/
Intervals
carbon:$ cd v2
carbon:$ ls
intInterval.ml          useIntInterval.ml
intInterval.mli
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$
carbon:$ ocamlbuild useIntInterval.byte
+ /Users/evw/.opam/4.06.0/bin/ocamlc.opt -c -o us
eIntInterval.cmo useIntInterval.ml
File "useIntInterval.ml", line 10, characters 9-2
9:
Error: Unbound constructor IntInterval.Interval
Command exited with code 2.
Compilation unsuccessful after building 4 targets
 (0 cached) in 00:00:00.
carbon:$
carbon:$
carbon:$
```

```
carbon:$
carbon:$ ocamlbuild useIntInterval.byte
+ /Users/evw/.opam/4.06.0/bin/ocamlc.opt -c -o us
eIntInterval.cmo useIntInterval.ml
File "useIntInterval.ml", line 10, characters 9-2
6:
Error: Unbound value IntInterval.creat
Hint: Did you mean create?
Command exited with code 2.
Compilation unsuccessful after building 4 targets
 (2 cached) in 00:00:00.
carbon:$ ocamlbuild useIntInterval.byte
Finished, 7 targets (2 cached) in 00:00:00.
carbon:$ ocamlbuild useIntInterval.byte
+ /Users/evw/.opam/4.06.0/bin/ocamlc.opt -c -o in
tInterval.cmo intInterval.ml
File "intInterval.ml", line 1:
Error: The implementation intInterval.ml
       does not match the interface intInterval.c
mi:
       The value `create' is required but not pro
vided
       File "intInterval.mli", line 7, characters
 0-28: Expected declaration
Command exited with code 2.
Compilation unsuccessful after building 6 targets
 (4 cached) in 00:00:00.
carbon:$ ocamlbuild intInterval.byte
+ /Users/evw/.opam/4.06.0/bin/ocamlc.opt -c -o in
tInterval.cmo intInterval.ml
File "intInterval.ml", line 1:
Error: The implementation intInterval.ml
```

does not match the interface intInterval.c
mi:
        The value `create' is required but not pro
vided
        File "intInterval.mli", line 7, characters
 0-28: Expected declaration
Command exited with code 2.
Compilation unsuccessful after building 4 targets
 (3 cached) in 00:00:00.
carbon:$