



Standard Modules

Basic Data Types

Pervasives	All basic functions
String	Functions on Strings
Array	Functions on Polymorphic Arrays
List	Functions on Polymorphic Lists
Char	Functions on Characters
Int32	Functions on 32 bits Integers
Int64	Functions on 64 bits Integers
Nativeint	Functions on Native Integers

Advanced Data Types

Buffer	Automatically resizable strings
Complex	Complex Numbers
Digest	MD5 Checksums
Hashtbl	Polymorphic Hash Tables
Queue	Polymorphic FIFO
Stack	Polymorphic LIFO
Stream	Polymorphic Streams
Map	Dictionaries (functor)
Set	Sets (functor)

System

Arg	Argument Parsing
Filename	Functions on Filenames
Format	Pretty-Printing
Genlex	Simple OCaml-Like Lexer
Marshal	Serialization Functions
Lexing	Functions for ocamllex
Parsing	Functions for ocaml yacc
Printexc	Generic Exception Printer
Random	Random Number Generator
Printf	printf-like Functions
Scanf	scanf-like Functions
Sys	OS Low-level Functions

Twinking

Lazy	Functions on Lazy Values
Gc	Garbage Collection Tuning
Weak	Weak Pointers (GC)

Popular Functions per Module

module Hashtbl

```
let t = Hashtbl.create 117
Hashtbl.add t key value;
let value = Hashtbl.find t key
Hashtbl.iter (fun key value -> ... ) t;
let cond = Hashtbl.mem t key
Hashtbl.remove t key;
Hashtbl.clear t;
```

module List

```
let len = List.length 1
List.iter (fun ele -> ... ) 1;
let l' = List.map(fun ele -> ... ) 1
let l' = List.rev 11
let acc' = List.fold_left (fun acc ele -> ...) acc 1
let acc' = List.fold_right (fun ele acc -> ...) 1 acc
if List.mem ele 1 then ...
if List.for_all (fun ele -> ele >= 0) 1 then ...
if List.exists (fun ele -> ele < 0) 1 then ...
let neg = List.find (fun x -> x < 0) ints
let negs = List.find_all (fun x -> x < 0) ints
let (negs,pos) = List.partition (fun x -> x < 0) ints
let ele = List.nth 2 list
let head = List.hd list
let tail = List.tl list
let value = List.assoc key assoc
if List.mem_assoc key assoc then ...
let assoc = List.combine keys values
let (keys, values) = List.split assoc
let l' = List.sort compare l
let l = List.append l1 l2 or l1 @ l2
let list = List.concat list_of_lists
```

Functions using Physical Equality in List

memq, assq, mem_assq

Non-tail Recursive Functions in List

append, concat, @, map, fold_right, map2, fold_right2, remove_assoc, remove_assq, split, combine, merge

module String

```
let s = String.create len
let s = String.make len char
let len = String.length s
let char = s.[pos]
s.[pos] <- char;
let concat = prefix ^ suffix
let s' = String.sub s pos len'
let s = String.concat "," list_of_strings
let pos = String.index_from s pos char_to_find
let pos = String.rindex_from s pos char_to_find
String.blit src src_pos dst dst_pos len;
let s' = String.copy s
let s' = String.uppercase s
let s' = String.lowercase s
let s' = String.escaped s
String.iter (fun c -> ...) s;
if String.contains s char then ...
```

module Array

```
let t = Array.create len v
let t = Array.init len (fun pos -> v_at_pos)
let v = t.(pos)
t.(pos) <- v;
let len = Array.length t
let t' = Array.sub t pos len
let t = Array.of_list list
let list = Array.to_list t
Array.iter (fun v -> ... ) t;
Array.iteri (fun pos v -> ... ) t;
let t' = Array.map (fun v -> ... ) t
let t' = Array.mapi (fun pos v -> ... ) t
let concat = Array.append prefix suffix
Array.sort compare t;
```

module Char

```
let ascii_65 = Char.code 'A'
let char_A = Char.chr 65
let c' = Char.lowercase c
let c' = Char.uppercase c
let s = Char.escaped c
```

module Buffer

```
let b = Buffer.create 10_000
Printf.bprintf b "Hello %s\n" name
Buffer.add_string b s;
Buffer.add_char b '\n';
let s = Buffer.contents s
```

module Digest

```
let md5sum = Digest.string str
let md5sum = Digest.substring str pos len
let md5sum = Digest.file filename
let md5sum = Digest.channel ic len
let hexa = Digest.to_hex md5sum
```

module Filename

```
if Filename.check_suffix name ".c" then ...
let file = Filename.chop_suffix name ".c"
let file = Filename.basename name
let dir = Filename.dirname name
let name = Filename.concat dir file
if Filename.is_relative file then ...
let file = Filename.temp_file prefix suffix
let file = Filename.temp_file ~temp_dir:"." pref suf
```

module Marshal

```
let string = Marshal.to_string v
  [Marshal.No_sharing; Marshal.Closures]
let _ = Marshal.to_buffer string at_pos max_len v []
let (v : of_type) = Marshal.from_string string at_pos
if String.length s > at_pos + Marshal.header_size then
  let needed = Marshal.total_size s at_pos in ...
```

module Random

```
Random.self_init ();
Random.init_int_seed;
let int_0_99 = Random.int 100
let coin = Random.bool ()
let float = Random.float 1_000.
```

module Printexc

```
let s = Printexc.to_string exn
let s = Printexc.get_backtrace ()
Printexc.register_printer (function
  MyExn s -> Some (Printf.sprintf ...)
  | _ -> None);
```

module Lazy

```
let lazy_v = lazy (f x)
let f_x = Lazy.force lazy_v
```

module Gc

```
Gc.compact ();
Gc.major ();
Gc.set { Gc.get() with
  Gc.minor_heap_size = 1_000_000;
  Gc.max_overhead = 1_000_000; (* no compaction *)
};
```

module Weak

```
let t = Weak.create size
Weak.set t pos (Some v);
match Weak.get t pos with None -> ...
```

module Arg

```
let arg_list = [
  "-do", Arg.Unit (fun () -> ..), ": call with unit"
; "-n", Arg.Int (fun int -> ..), "<n> : call with int"
; "-s", Arg.String (fun s -> ..), "<s> : call/w string"
; "-yes", Arg.Set flag_ref, ": set ref"
; "-no", Arg.Clear flag_ref, ": clear ref" ]
let arg_usage = "prog [args] anons: run prog with args"
Arg.parse arg_list (fun anon -> .. ) arg_usage;
Arg.usage arg_list arg_usage;
```

module Map

```
module Dict = Map.Make(String)
module Dict = Map.Make(struct
  type t = String.t let compare = String.compare end)
let empty = Dict.empty
let dict = Dict.add "x" value_x empty
if Dict.mem "x" dict then ...
let value_x = Dict.find "x" dict
let new_dict = Dict.remove "x" dict
Dict.iter (fun key value -> ..) dict;
let new_dict = Dict.map (fun value_x -> ..) dict
let nee_dict = Dict.mapi (fun key value -> ..) dict
let acc = Dict.fold (fun key value acc -> ..) dict acc
if Dict.equal dict other_dict then ...
```

module Set

```
module S = Set.Make(String)
module S = Set.Make(struct
  type t = String.t let compare = String.compare end)
let empty = S.empty
let set = S.add "x" empty
if S.mem "x" set then ...
let new_set = S.remove "x" set
S.iter (fun key -> ..) dict;
let union = S.union set1 set2
let intersection = S.inter set1 set2
let difference = S.diff set1 set2
let min = S.min_elt set
let max = S.max_elt set
```