

What is a Haskell module?

What is a Haskell program?

A module is a collection of related functions, types, and typeclasses.

A program is a collection of modules where the main module loads up the other modules and then uses their functions.

Which module is imported by default?

Prelude

Give two shortcuts for importing modules in
`ghci`.

```
:m + Module1 Module2 ... ModuleN
```

Or, load a script that does imports of its own. They too will be available.

Selectively import functions from a module.

Exclude functions from a module import.

```
import Module (func1, func2, ...)
```

```
import Module hiding (func1, func2, ...)
```


Mitigate name-collisions between needed functions from different modules.

How can this be made more convenient?

You can import one on a qualified basis so only the fully qualified name of one (or both) of the functions is available.

```
import qualified Module
```

To make this more convenient the module can be renamed to something shorter.

```
import qualified Module as M
```

What is Hoogle?

`http://haskell.org/hoogle`

A Haskell-specific search engine that lets you search by name, module name, or even type signature.

Describe `foldl` ' and `foldl1` '.

They are strict versions of their lazy counterparts. They avoid stack overflow errors that result from folding on large lists.

What is a thunk?

A value that is yet to be evaluated.

Flatten two lists.

Remove duplicates.

Which two functions work on lists of
booleans?

concat

nub

and **and** or

Describe `span` and `break`.

`span` is like `takeWhile` but returns a pair of lists, the second of which is the list of elements that would have been dropped by `takeWhile`.

`break` negates `takeWhile`'s predicate.

Describe `group`.

Name a common use.

It takes a list and groups adjacent elements into sublists if they are equal.

If you sort before grouping you can find out how many times each element appears in the list.

What functions are provided for testing
sublists?

isPrefixOf, isSuffixOf, isInfixOf

Describe `partition`.

It separates a list into a pair of two lists, those satisfying a predicate and those failing it.

Split and join strings based on newline characters.

Do the same for words.

lines, unlines

words, unwords

What are the `Data.List` "generic" functions?

What about the "by" functions?

Functions whose names start with "generic" that correct the historical error of using `Int` instead of `Num` as the type of a parameter.

Functions whose names end with "by" test with a provided equality function instead of using `==`.

What utility function helps in constructing comparison functions for "by" functions?

on, used infix between (==) and the function that gets the value you want to use for comparison.

How are maps from `Data.Map` created?

How are they represented internally?

Using `fromList` on a list of 2-tuples where the first element is an `Ord`.

They are represented using trees.

Look up a value in a map.

Check if a key is in the map.

Add/remove from a map.

lookup **returns a** Maybe

member

insert/delete

How are the sets of `Data.Set` represented?

Create one.

As trees, so they're ordered.

Use `fromList`.

Create a set/map from a single value.

Use singleton.

Check a set's size.

Test a set for membership.

Add/remove from a set.

size, null, empty

member

insert, delete

Compare strategies for eliminating duplicates from a list.

`nub` is simplest, requires only `Eq`, but is potentially slow.

Converting to a set with `fromList` and then back with `toList` may be faster but requires `Ord`.

Define your own module.

```
module MyModule  
  ( funcToExport1  
  , funcToExport2  
  ...  
  ) where  
  ...
```