

# Lists and HOFs

(a) Determine the domain and range of the following Snap! blocks.

Domain: List, Anything

Range: Boolean



Domain of Foo: Integer

Range of Foo: Boolean



Type of Bar: Boolean

(b) Fill in the information table for the Higher Order Functions.

Higher Order Function	Domain	Range	Notes
	function, list	list	Length of output list = length of input list
	function, list	list	Length of output list <= length of input list
	function, list	Single value	output value is usually the same type as the items in the input list

## Function Input

	Type	Domain	Range	Notes
map	reporter	anything	anything	Can have an arbitrary amount of blanks
keep	predicate	anything	boolean	Can have an arbitrary amount of blanks
combine	reporter	anything	anything	Must have two empty blanks

(c) Fill in the blanks so that Keep reports a list of the numbers from MyList.

MyList = list(3, hello, 8, goodbye, 4, 7)

Keep items such that (<Is () a number?>) from (MyList)

(d) Write an expression that reports the sum of the squares of the numbers in YourList.

YourList = list(4, 2, 3, 1)

( Combine with ( ( ) + ( ) ) items of ( Map ( ( ) x ( ) ) over (YourList) ) )

---



---

(e) Complete the following block so that it works as described.

prepend every anti dote-pasto-gone-body antidote antipasto antigone antibody

+ prepend + every + word + sentence +

( Combine with ( join ( ) ( ) ) items of ( Map ( join (word) ( ) ) over (sentence->list (sentence) ) ) )

---



---

(f) Describe the output of the following code. OurList is a list of words.

combine with join [ ] [ ] items of  
map letter length of [ ] of [ ] over Our List

Combines the last letter of each item in Our List into a word

### Challenge Problem

(a) Given a list of salaries, some of which go into the millions, return the salary of the lowest-paid millionaire. You are allowed to use a ( ) min ( ) helper block that takes two numbers as inputs and reports the minimum of the two numbers.

lowest-paid millionaire list 1 2 3000000 4 5000000 6 3000000

+ lowest-paid + millionaire + list +

( combine with (( ) min ( ) ) items of (keep items such that < ( ) > (999999)> from (list)))

---



---