

PERMUTATIONS

POETRY OF PROGRAMMING – CLOJURE ASSIGNMENTS

Check: `concat`, `mapcat`, `remove`, `cons`, recursion, lambda functions

- (1) Write a function that constructs all permutations of a given collection.

```
(permutations [:a :b :c])  
((:a :b :c) (:a :c :b) (:b :a :c)  
 (:b :c :a) (:c :a :b) (:c :b :a))
```

Think recursively! Would it be easier to list all permutations of n things, if one could have all permutations of $n - 1$ things?

A good preliminary exercise for solving the above problem is this: write a function `smaller-colls` that takes a collection and returns a collection of smaller collections that miss an element from the original collection.

```
(smaller-colls [1 2 3])  
((2 3) (1 3) (1 2))  
(smaller-colls [:a :b])  
((:a) (:b))
```