```
(ns n-gram.letters.file-reader (:require [n-gram.misc.misc-functions :refer :all]
                                         [n-gram.letters.letter-maker :refer :all]
                                         [n-gram.words.file-reader :refer
[formattedText]]))

(def all-chars "Map of all lower case characters, numbers and space" (map #(str %) (map
char (concat (range 32 33 ) [39] (range 48 58) (range 97 123)  ))))

(def all-char-pairs "Map of all possible pairs of lower case characters, numbers and
space" (map #(reduce str %) (selections all-chars 2)))

(def all-char-trios "Map of all possible trios of lower case characters, numbers and
space" (map #(reduce str %) (selections all-chars 3)))

(def all-char-4s "Map of all possible groups of 4 of lower case characters, numbers and
space" (map #(reduce str %) (selections all-chars 4)))

(def N-letter "number of letters in text" (count formattedText))

(def letters "Sequence of all letters in text" (make-letter-groups-memo formattedText
1))

; count word frequencies

(def counts-ASCII-1 "Frequencies of each distinct letter in text" (frequencies letters))

(def all-char-counts (update-counts-map-memo all-chars counts-ASCII-1))

(def letter-pairs "Sequence of all pairs of letters in text" (make-letter-groups-memo
formattedText 2))

(def counts-ASCII-2 "Frequencies of each distinct letter pair in text" (frequencies
letter-pairs))

(def all-char-pair-counts (update-counts-map-memo all-char-pairs counts-ASCII-2))

(def letter-trios "Sequence of all trios of letters in text" (make-letter-groups-memo
formattedText 3))

(def counts-ASCII-3 "Frequencies of each distinct letter trio in text" (frequencies
letter-trios))

(def all-char-trio-counts (update-counts-map-memo all-char-trios counts-ASCII-3))

(def letter-4s "Sequence of all groups of 4 of letters in text" (make-letter-groups-memo
formattedText 4))

(def counts-ASCII-4 "Frequencies of each distinct letter group of 4 in text"
```

```
(frequencies letter-4s))

(def all-char-4-counts (update-counts-map-memo all-char-4s counts-ASCII-4))
```