Stanley Goodwin (4/21/2022)
CS 141 Computer Science I

Assumptions:
Strings contain lowercase English letters only.
Letters are values 1-26 for a-z respectively.

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~~~~~ SECTION 1 ~~~~~
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Initial Strings: ["armenia", "afghanistan", "greece", "italy", "guineabissau",
"iceland", "portugal", "morocco"]
[
    "armenia"   -> a m n a   -> 1+13+14+1   = 29 % 10 = 9
    "afghanistan" -> a g a i t n -> 1+7+1+9+20+14 = 52 % 10 = 2
    "greece"   -> g e c   -> 7+5+3   = 15 % 10 = 5
    "italy"   -> i a y   -> 9+1+25   = 35 % 10 = 5
    "guineabissau" -> g i e b s a -> 7+9+5+2+19+1 = 43 % 10 = 3
    "iceland"   -> i e a d   -> 9+5+1+4   = 19 % 10 = 9
    "portugal"   -> p r u a   -> 16+18+21+1   = 56 % 10 = 6
    "morocco"   -> m r c o   -> 13+18+3+15   = 49 % 10 = 9
]

index | value
----
   0 | "iceland"   * (Supposed to be Index 9) [1 Collision]
   1 | "morocco"   * (Supposed to be Index 9) [2 Collisions]
   2 | "afghanistan"
   3 | "guineabissau"
   4 |
   5 | "greece"
   6 | "italy"   * (Supposed to be Index 5) [1 Collision]
   7 | "portugal"   * (Supposed to be Index 6) [1 Collision]
   8 |
   9 | "armenia"
"*" indicates open addressing.

NOTE: There were 5 collisions total.

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~~~~~ SECTION 2 ~~~~~
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[                                      [name + (pop * region)] % 10
    CountryInfo("afghanistan", 37, 2) -> 52 + (37 * 2) -> 126 % 10 = 6
    CountryInfo("greece",      11, 5) -> 15 + (11 * 5) ->  70 % 10 = 0
    CountryInfo("italy",       60, 5) -> 35 + (60 * 5) -> 335 % 10 = 5
    CountryInfo("armenia",      3, 2) -> 29 + ( 3 * 2) ->  35 % 10 = 5
    CountryInfo("portugal",    10, 5) -> 56 + (10 * 5) -> 106 % 10 = 6
    CountryInfo("morocco",     36, 1) -> 49 + (36 * 1) ->  85 % 10 = 5
]

index | value
-------------
  0  | CountryInfo("greece", 11, 5)
  1  |
  2  |
  3  |
  4  |
  5  | CountryInfo("italy", 60, 5)
  6  | CountryInfo("afghanistan", 37, 2)
  7  | CountryInfo("armenia", 3, 2)      * (Supposed to be Index 5) [2 Collisions]
  8  | CountryInfo("portugal", 10, 5)    * (Supposed to be Index 6) [2 Collisions]
  9  | CountryInfo("morocco", 36, 1)     * (Supposed to be Index 5) [4 Collisions]
"*" indicates open addressing.
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~~~~~ SECTION 3 ~~~~~
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Initial Strings: ["armenia", "afghanistan", "greece", "italy", "guineabissau",
"iceland", "portugal", "morocco"]
[
    "armenia"       -> 4 % 8 -> 4
    "afghanistan"   -> 4 % 8 -> 4
    "greece"        -> 4 % 8 -> 4
    "italy"         -> 4 % 8 -> 4
    "guineabissau"  -> 4 % 8 -> 4
    "iceland"       -> 4 % 8 -> 4
    "portugal"      -> 4 % 8 -> 4
    "morocco"       -> 4 % 8 -> 4
]

index | value
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    0 | "guineabissau"   * (Supposed to be Index 4) [4 Collisions]
    1 | "iceland"        * (Supposed to be Index 4) [5 Collisions]
    2 | "portugal"       * (Supposed to be Index 4) [6 Collisions]
    3 | "morocco"        * (Supposed to be Index 4) [7 Collisions]
    4 | "armenia"
    5 | "afghanistan"    * (Supposed to be Index 4) [1 Collisions]
    6 | "greece"         * (Supposed to be Index 4) [2 Collisions]
    7 | "italy"          * (Supposed to be Index 4) [3 Collisions]
"*" indicates open addressing.
```