Overview

Exercise\_16\_6 reads a five-letter word and then displays all the three-letter combinations that can be made without repetition of letters.

### PROCESSING LOGIC

Testing Logic:

1. Run tryCatchMe()
2. Get user input for five-letter string
3. Run FiveLetterWordReader.ThreeLetterCombinations
4. Write all strings in the returned array
5. Accept any Key Input for user to exit.

ThreeLetterCombinations Logic:

1. Take in input of five-letter string
2. Check if the input is exactly five letters, throw Format Exception if not
3. Turn five-letter string into a char array
4. Create LinkedList<string> instance
5. Run a three-level deep for loop. Loop 1 starts at int 0, ends at 2 and increments by 1. Loop 2 starts at int 1, ends at 3, and increments by 1. Loop 3 starts at int 2, ends at 4, and increments by 1. The For loop layers look like:
   1. Loop 1
      1. Loop 2
         1. Loop 3
            1. If the loop 3 counter is greater than the loop 2 and loop 1 counter and the loop 2 counter is greater than the loop 1 counter, then the respective string using the counters as the locations in the char array to the LinkedList().
6. Return LinkedList.ToArray<string>;

### DATA (INPUT/OUTPUT)

Input: string: fiveLetterWord

Output: strings: threeLetterCombinations

### COMPONENTS (SOURCE CODE NAMES, CLASSES, METHODS)

|  |
| --- |
| **Exercise\_16\_6** |
|  |
| +static Main(args[]) |

|  |
| --- |
| **FiveLetterWordReader** |
|  |
| + ThreeLetterCombinations(string): string[] |

### TESTING

Scenario 1 – Basic test

Steps to test:

1. Start program
2. Enter “Catop”
3. Read three letter combinations, should be ten in total: all different.
4. Exit program

Expected reaction:

For ten different three letter combinations to be printed on the screen.

Actual result:

Expected reaction was actual result. Program works.

Scenario 1 – Another test

Steps to test:

1. Start program
2. Enter “Yours”
3. Read three letter combinations, should be ten in total: all different.
4. Exit program

Expected reaction:

For ten different three letter combinations to be printed on the screen.

Actual result:

Expected reaction was actual result. Program works.

Steps to test:

1. Start program
2. Enter “Trees”
3. Read three letter combinations, should be ten in total: all different.
4. Exit program

Expected reaction:

For ten different three letter combinations to be printed on the screen.

Actual result:

Expected reaction was actual result. Program works.

##### 