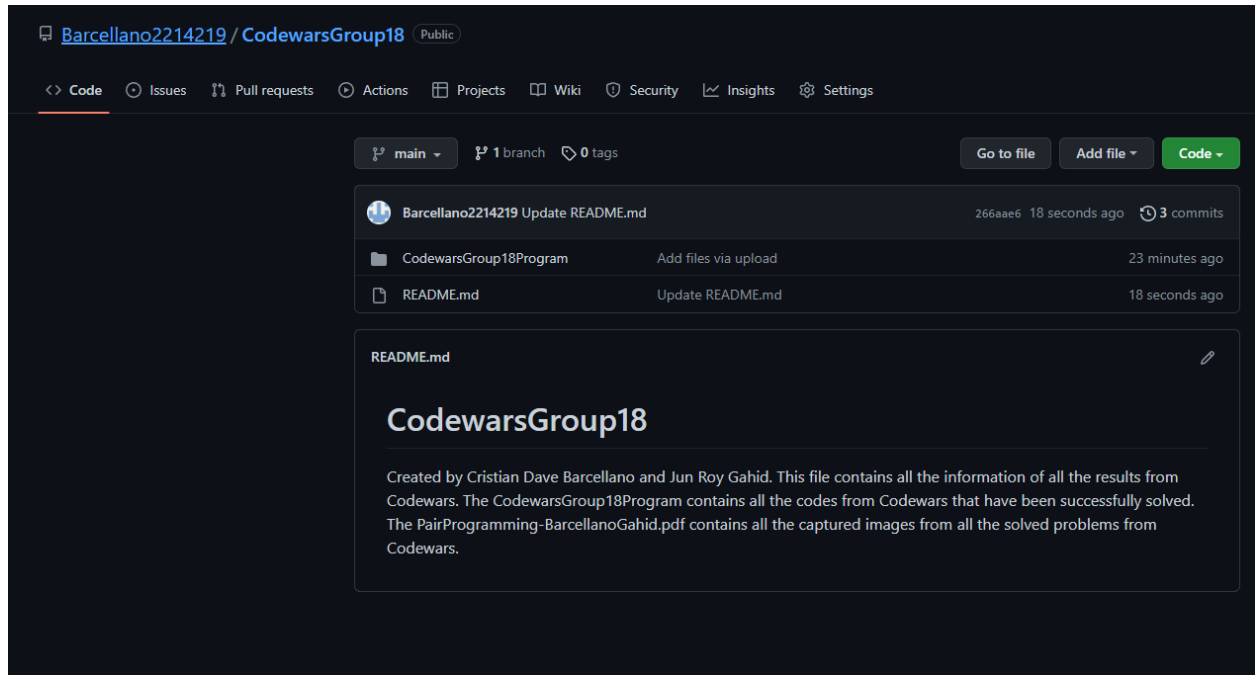


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Laboratory Activity - Prelim Period Pair Programming

Repository



Link: <https://github.com/Barcellano2214219/CodewarsGroup18>

Date	Coder	Navigator	Accomplishment
Aug 24, 2022 3:30-3:40 pm	Gahid, Jun Roy	Barcellano, Cristian Dave	Completed “Pythagorean Triple” Challenge (Easy)
Aug 24, 2022 9:00-10:30 pm	Gahid, Jun Roy	Barcellano, Cristian Dave	Completed “Bit Counting” Challenge (Medium)
Aug 27, 2022 8:00-9:00 am	Barcellano, Cristian Dave	Gahid, Jun Roy	Completed “Odd or Even” Challenge (Easy)
Aug 27, 2022 1:30-2:00 pm	Barcellano, Cristian Dave	Gahid, Jun Roy	Completed “Scramblies” challenge (Medium)

Aug 28, 2022 5:30-8:00 pm	Barcellano, Cristian Dave	Gahid, Jun Roy	Completed “Ten-Pin Bowling” Challenge (Hard)
Aug 28, 2022 8:30-9:30 pm	Barcellano, Cristian Dave	Gahid, Jun Roy	Completed “Disemvo wel Trolls” challenge (Easy)
Aug 31, 2022 8:00-9:00 pm	Gahid, Jun Roy	Barcellano, Cristian Dave	Completed “Consecutive Strings” Challenge (Medium)
Aug 31, 2022 9:30-11:00 pm	Gahid, Jun Roy	Barcellano, Cristian Dave	Completed “Highest Scoring Word” Challenge (Medium)

Problems Solved:

1. Pythagorean Triple

Description:

Given an array of 3 non-negative integers `a`, `b` and `c`, determine if they form a pythagorean triple.

A pythagorean triple is formed when:

$$c^2 = a^2 + b^2$$

where `c` is the largest value of `a`, `b`, `c`.

For example: `a = 3`, `b = 4`, `c = 5` forms a pythagorean triple, because $5^2 = 3^2 + 4^2$

Return Values

- `1` if `a`, `b` and `c` form a pythagorean triple
- `0` if `a`, `b` and `c` do not form a pythagorean triple
- For Python: return `True` or `False`
- For JavaScript: return `true` or `false`

Solution/Code:

```
1 import java.util.Arrays;
2
3 public class PythagoreanTriple {
4
5     public int pythagoreanTriple(int[] triple){
6         if (triple[2] < triple[1] || triple[2] < triple[0]){
7             return 0;
8         }
9
10        if (triple[2] * triple[2] == (triple[0] * triple[0]) + (triple[1] * triple[1])){
11            return 1;
12        }
13        return 0;
14    }
15 }
16
17 }
18
```

2. Bit Counting

Description:

Write a function that takes an integer as input, and returns the number of bits that are equal to one in the binary representation of that number. You can guarantee that input is non-negative.

Example: The binary representation of 1234 is 10011010010, so the function should return 5 in this case

Solution/Code:

```
1 public class BitCounting {  
2  
3     public static int countBits(int n){  
4         String binaryRep = Integer.toBinaryString(n);  
5         String [] binaryArray = binaryRep.split("");  
6         int counter = 0;  
7         for(int i = 0; i < binaryArray.length; i++){  
8             if(Integer.parseInt(binaryArray[i]) == 1){  
9                 counter++;  
10            }  
11        }  
12  
13        return counter;  
14    }  
15  
16 }  
17
```

3. Odd or Even

Description:

Task:

Given a list of integers, determine whether the sum of its elements is odd or even.

Give your answer as a string matching "odd" or "even".

If the input array is empty consider it as: [0] (array with a zero).

Examples:

Input: [0]

Output: "even"

Input: [0, 1, 4]

Output: "odd"

Input: [0, -1, -5]

Output: "even"

Solution/code:

```
Solution
1 public class Codewars {
2     public static void main(String[] args) {
3         System.out.println(oddOrEven((new int[] {2, 5, 34, 6})));
4     }
5     public static String oddOrEven (int[] array) {
6         int sum = 0;
7         for (int n : array){
8             sum += n;
9         }
10        return sum%2==0 ? "even" : "odd";
11    }
12 }
```

4. Scramblies

Description:

Complete the function `scramble(str1, str2)` that returns `true` if a portion of `str1` characters can be rearranged to match `str2`, otherwise returns `false`.

Notes:

- Only lower case letters will be used (a-z). No punctuation or digits will be included.
- Performance needs to be considered.

Examples

```
scramble('rkqodlw', 'world') ==> True
scramble('cedewaraaossoqqyt', 'codewars') ==> True
scramble('katas', 'steak') ==> False
```

Solution/code:

```
Solution
1 import java.util.HashMap;
2
3 public class Scramblies {
4     public static boolean scramble(String str1, String str2) {
5         //Group 18 | Barcellano & Gahid
6         HashMap<Character, Integer> map = new HashMap<>();
7         for (char ch : str1.toCharArray()) map.put(ch, 1 + map.getOrDefault(ch, 0));
8         for (char ch : str2.toCharArray()) {
9             Integer count = map.getOrDefault(ch, 0);
10            if (count == 0) return false;
11            map.put(ch, --count);
12        }
13        return true;
14    }
15 }
```

5. Ten-Pin Bowling

Description:

4 kyu

Ten-Pin Bowling

☆ 388 🏆 78 📈 93% of 509 🕒 669 of 2,719 👤 dnolan 🚩 1 Issue Reported

InstructionsOutput

Ten-Pin Bowling

In the game of ten-pin bowling, a player rolls a bowling ball down a lane to knock over pins. There are ten pins set at the end of the bowling lane. Each player has 10 frames to roll a bowling ball down a lane and knock over as many pins as possible. The first nine frames are ended after two rolls or when the player knocks down all the pins. The last frame a player will receive an extra roll every time they knock down all ten pins; up to a maximum of three total rolls.

The Challenge

In this challenge you will be given a string representing a player's ten frames. It will look something like this: `'X X 9/ 80 X X 90 8/ 7/ 44'` (in Java: `"X X 9/ 80 X X 90 8/ 7/ 44"`), where each frame is space-delimited, `'X'` represents strikes, and `'/'` represents spares. Your goal is take in this string of frames into a function called `bowlingScore` and return the players total score.

Scoring

The scoring for ten-pin bowling can be difficult to understand, and if you're like most people, easily forgotten if you don't play often. Here is a quick breakdown:

Frames

In Ten-Pin Bowling there are ten frames per game. Frames are the players turn to bowl, which can be multiple rolls. The first 9 frames you get 2 rolls maximum to try to get all 10 pins down. **On the 10th or last frame a player will receive an extra roll each time they get all ten pins down to a maximum of three total rolls. Also on the last frame bonuses are not awarded for strikes and spares moving forward.**

Solution/code:

```

Solution
1 import java.util.ArrayList;
2 import java.util.List;
3
4 public class Solution {
5     public static int bowling_score(String f) {
6         // Group 18 | Barcellano & Gahid
7         Integer score = 0;
8         List<Integer> rolls = new ArrayList<>();
9         String[] frames = f.split(" ");
10        for (String frame : frames) {
11            String[] balls = frame.split("");
12            for (String ball : balls) {
13                if (ball.matches("X")) rolls.add(10);
14                else if (ball.matches("/")) rolls.add(10 - rolls.get(rolls.size() - 1));
15                else rolls.add(Integer.valueOf(ball));
16            }
17        }
18        rolls.add(0);
19        rolls.add(0);
20
21        Integer frame = 0;
22        for (int i = 0; i < 10; i++) {
23            Integer point = rolls.get(frame);
24        }
25    }
26 }

```

6. Disemvowel Trolls

Description:

Trolls are attacking your comment section!

A common way to deal with this situation is to remove all of the vowels from the trolls' comments, neutralizing the threat.

Your task is to write a function that takes a string and return a new string with all vowels removed.

For example, the string "This website is for losers LOL!" would become "Ths wbst s fr lsrs LL!".

Note: for this kata **y** isn't considered a vowel.

Solution/code:

```

Solution
1 public class Troll {
2     public static String disemvowel(String str) {
3         // Group 18 | Barcellano & Gahid
4         str = (str.replaceAll("[aeiouAEIOU]", ""));
5         return str;
6     }
7 }

```

7. Consecutive Strings

Description:

DESCRIPTION:

You are given an array(list) `strarr` of strings and an integer `k`. Your task is to return the **first** longest string consisting of `k` **consecutive** strings taken in the array.

Examples:

```
strarr = ["tree", "foling", "trashy", "blue", "abcdef", "uvwxyz"], k = 2
```

Concatenate the consecutive strings of `strarr` by 2, we get:

```
treefoling (length 10) concatenation of strarr[0] and strarr[1]
folingtrashy ("      12) concatenation of strarr[1] and strarr[2]
trashyblue ("      10) concatenation of strarr[2] and strarr[3]
blueabcdef ("      10) concatenation of strarr[3] and strarr[4]
abcdefuvwxyz ("     12) concatenation of strarr[4] and strarr[5]
```

Two strings are the longest: "folingtrashy" and "abcdefuvwxyz".

The first that came is "folingtrashy" so

`longest_consec(strarr, 2)` should return "folingtrashy".

In the same way:

```
longest_consec(["zone", "abigail", "theta", "form", "libe", "zas", "theta", "abigail"], 2) --> "abigailtheta"
```

`n` being the length of the string array, if `n = 0` or `k > n` or `k <= 0` return "" (return `Nothing` in Elm, "nothing" in Erlang).

Solution/code:

```
1 class LongestConsec {
2
3     public static String longestConsec(String[] strarr, int k) {
4         String finResult = "";
5
6         for(int i = k-1; i < strarr.length; i++){
7             String currResult = "";
8             int iteration = i;
9
10            while(iteration >= i - (k-1)){
11                currResult = strarr[iteration].concat(currResult);
12                iteration--;
13            }
14
15            if(currResult.length() > finResult.length()){
16                finResult = currResult;
17            }
18        }
19
20        return finResult;
21    }
22 }
23
```


8. Highest Scoring Word

Description:

DESCRIPTION:

Given a string of words, you need to find the highest scoring word.

Each letter of a word scores points according to its position in the alphabet: `a = 1, b = 2, c = 3` etc.

You need to return the highest scoring word as a string.

If two words score the same, return the word that appears earliest in the original string.

All letters will be lowercase and all inputs will be valid.



FUNDAMENTALS

STRINGS

ARRAYS

Solution/code:

```
1 import java.util.ArrayList;
2
3 public class Kata {
4
5     public static String high(String s) {
6         String[] strArr = s.split(" ");
7         String highestValueStr = "";
8         int highestValue = 0;
9
10        for(String str: strArr){
11            char[] letters = str.toCharArray();
12            int wordValue = 0;
13
14            for(char ltr: letters){
15                ArrayList<Character> alphabet = getArrOfChars();
16                wordValue = wordValue + alphabet.indexOf(ltr) + 1;
17            }
18
19            if(highestValue < wordValue){
20                highestValue = wordValue;
21                highestValueStr = str;
22            }
23        }
24        return highestValueStr;
25    }
26
27    public static ArrayList<Character> getArrOfChars(){
28        ArrayList<Character> alphabet = new ArrayList<>();
29        alphabet.add('a');
30        alphabet.add('b');
```