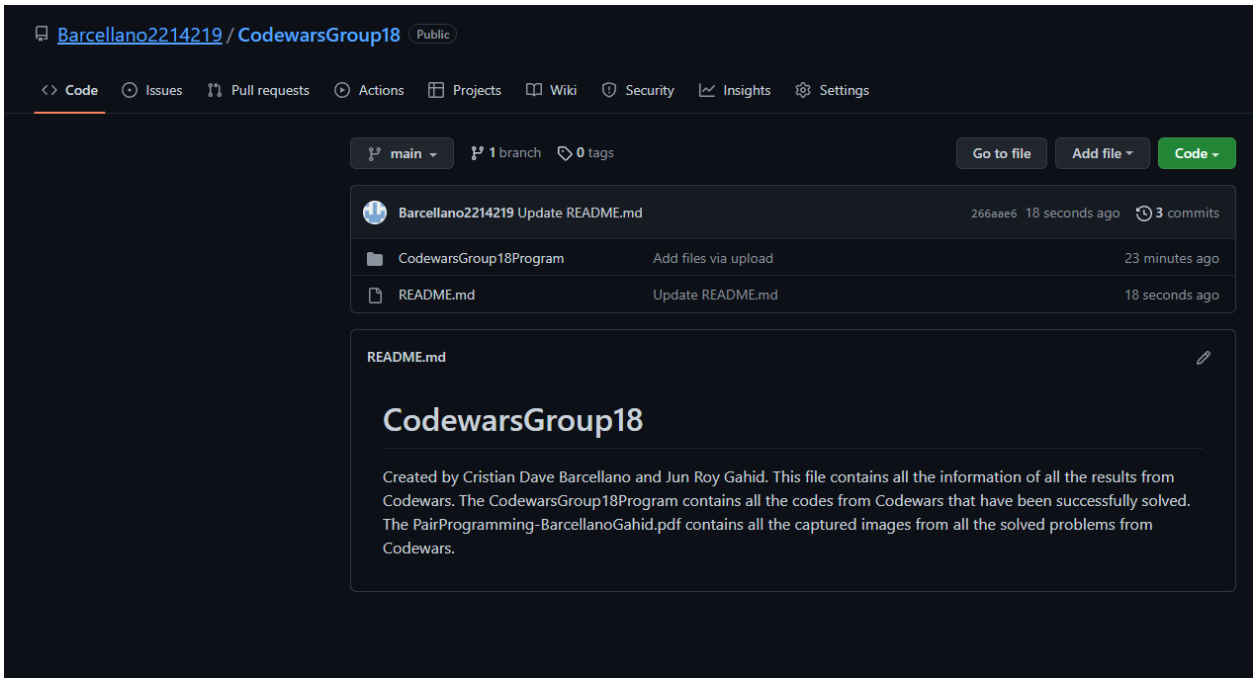
Barcellano, Cristian Dave
Gahid, Jun Roy

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“Disemvowel 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:

```java
import java.util.Arrays;

public class PythagoreanTriple {

  public int pythagoreanTriple(int[] triple){
    if (triple[2] < triple[1] || triple[2] < triple[0]){
      return 0;
    }

    if (triple[2] * triple[2] == (triple[0] * triple[0]) + (triple[1] * triple[1])){
      return 1;
    }
    return 0;

  }

}
```

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:

```java
public class BitCounting {

  public static int countBits(int n){
        String binaryRep = Integer.toBinaryString(n);
        String [] binaryArray = binaryRep.split("");
        int counter = 0;
        for(int i = 0; i < binaryArray.length; i++){
            if(Integer.parseInt(binaryArray[i]) == 1){
                counter++;
            }
        }

        return counter;
    }

}

```

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

```java
public class Codewars {
    public static void main(String[] args) {
        System.out.println(oddOrEven((new int[] {2, 5, 34, 6})));
    }
    public static String oddOrEven (int[] array) {
        int sum = 0;
        for (int n : array){
            sum += n;
        }
        return sum%2==0 ? "even" : "odd";
    }
}
```

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:

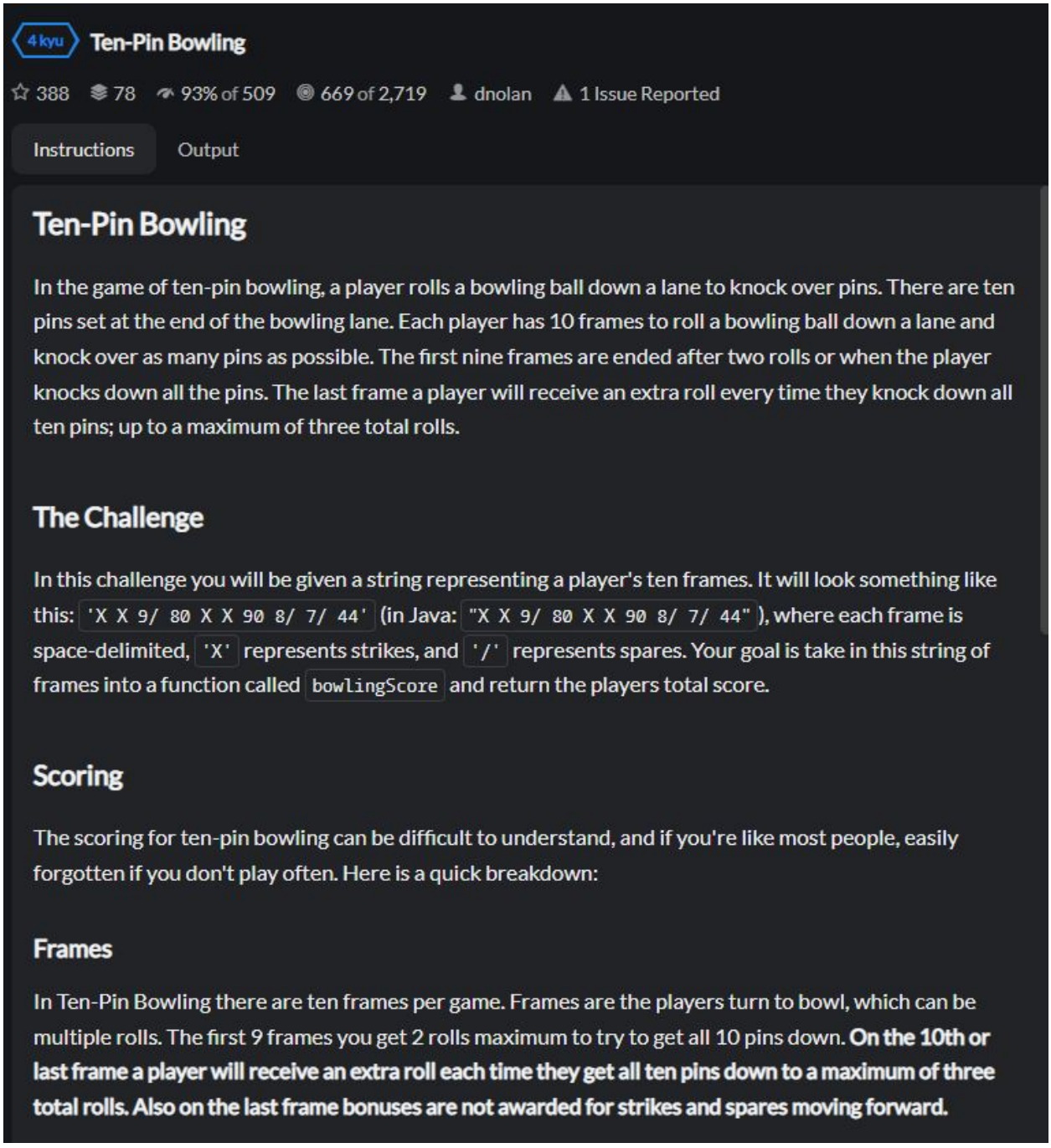
Solution

```java
import java.util.HashMap;

public class Scramblies {
    public static boolean scramble(String str1, String str2) {
      //Group 18 | Barcellano & Gahid
        HashMap<Character, Integer> map = new HashMap<>();
        for (char ch : str1.toCharArray()) map.put(ch, 1 + map.getOrDefault(ch, 0));
        for (char ch : str2.toCharArray()) {
            Integer count = map.getOrDefault(ch, 0);
            if (count == 0) return false;
            map.put(ch, --count);
        }
        return true;
    }
}
```

5. **Ten-Pin Bowling**

Description:



Solution/code:

Solution

```java
import java.util.ArrayList;
import java.util.List;

public class Solution {
    public static int bowling_score(String f) {
      // Group 18 | Barcellano & Gahid
      Integer score = 0;
        List<Integer> rolls = new ArrayList<>();
        String[] frames = f.split(" ");
        for (String frame : frames) {
            String[] balls = frame.split("");
            for (String ball : balls) {
                if (ball.matches("X")) rolls.add(10);
                else if (ball.matches("/")) rolls.add(10 - rolls.get(rolls.size() - 1));
                else rolls.add(Integer.valueOf(ball));
            }
        }
        rolls.add(0);
        rolls.add(0);

        Integer frame = 0;
        for (int i = 0; i < 10; i++) {
            Integer point = rolls.get(frame);
```

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

```java
public class Troll {
    public static String disemvowel(String str) {
        // Group 18 | Barcellano & Gahid
        str = (str.replaceAll("[aeiouAEIOU]", ""));
        return str;
    }
}
```

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:

```java
class LongestConsec {

    public static String longestConsec(String[] strarr, int k) {
        String finResult = "";

        for(int i = k-1; i < strarr.length; i++){
            String currResult = "";
            int iteration = i;

            while(iteration >= i - (k-1)){
                currResult = strarr[iteration].concat(currResult);
                iteration--;
            }

            if(currResult.length() > finResult.length()){
                finResult = currResult;
            }
        }

        return finResult;
    }
}
```

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:

```java
import java.util.ArrayList;

public class Kata {

    public static String high(String s) {
        String[] strArr = s.split(" ");
        String highestValueStr = "";
        int highestValue = 0;

        for(String str: strArr){
            char[] letters = str.toCharArray();
            int wordValue = 0;

            for(char lttr: letters){
                ArrayList<Character> alphabet = getArrOfChars();
                wordValue = wordValue + alphabet.indexOf(lttr) + 1;
            }

            if(highestValue < wordValue){
                highestValue = wordValue;
                highestValueStr = str;
            }
        }
        return highestValueStr;
    }

    public static ArrayList<Character> getArrOfChars(){
        ArrayList<Character> alphabet = new ArrayList<>();
        alphabet.add('a');
        alphabet.add('b');
```