HW 07.3

1.

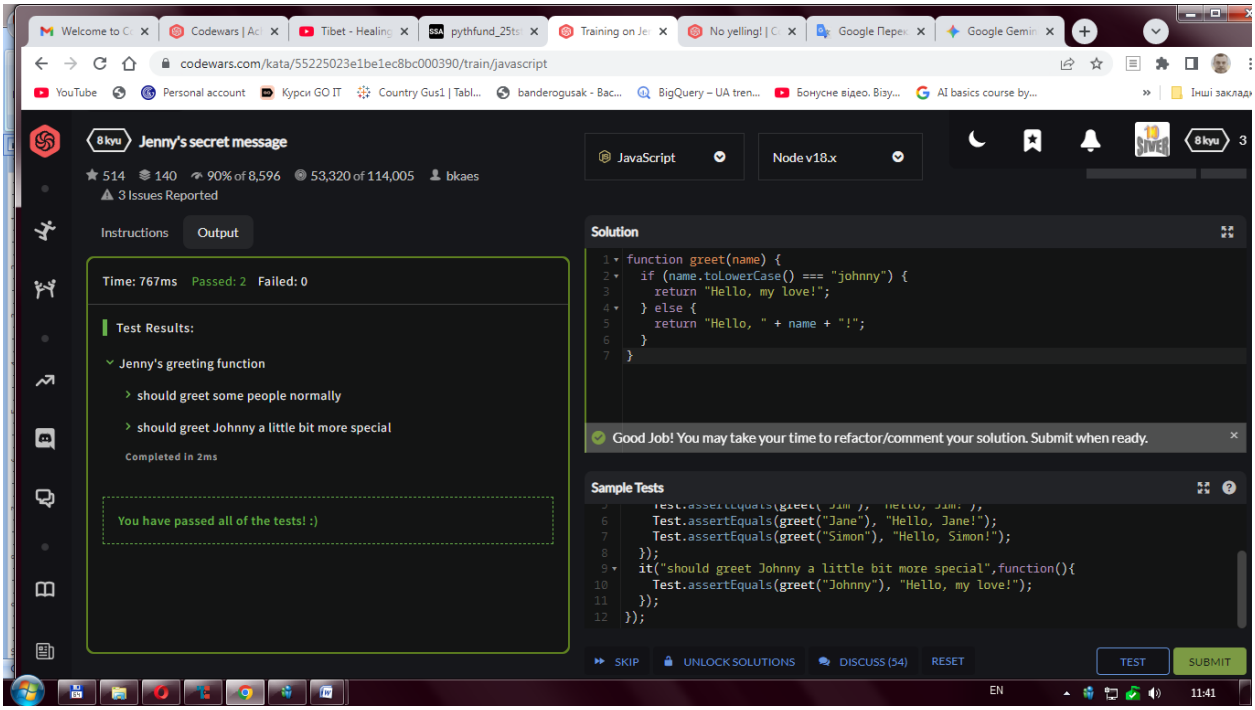
Jenny has written a function that returns a greeting for a user. However, she's in love with Johnny, and would like to greet him slightly different. She added a special case to her function, but she made a mistake.

Can you help her?

```
def greet(name):
    if name.lower() == "johnny": # Convert to lowercase for case-insensitive comparison
        return "Hello, my love!"
    else:
        return "Hello, " + name + "!"
```

JavaScript

```
function greet(name) {
  if (name.toLowerCase() === "johnny") {
    return "Hello, my love!";
  } else {
    return "Hello, " + name + "!";
  }
}
```



2.

Given two ordered pairs calculate the distance between them. Round to two decimal places. This should be easy to do in 0(1) timing.

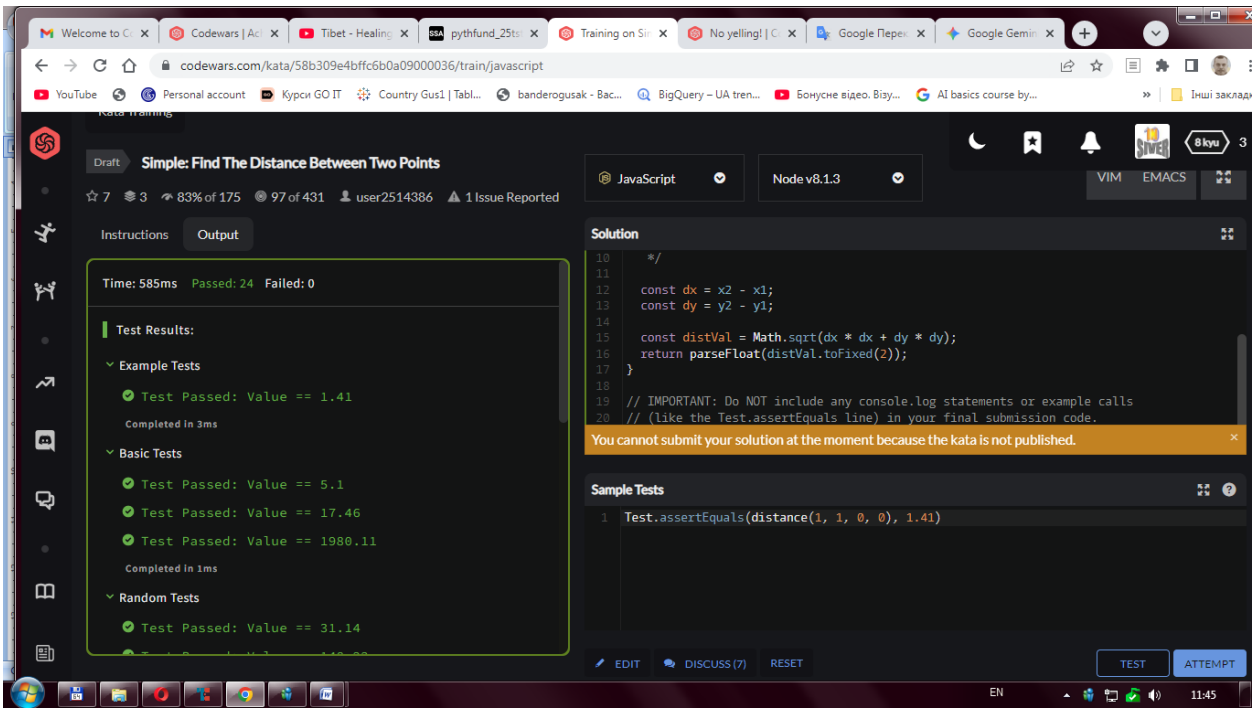
Python

```
import math

def calculate_distance(p1, p2):

    x1, y1 = p1
    x2, y2 = p2

    dx = x2 - x1
    dy = y2 - y1

    distance = math.sqrt(dx**2 + dy**2)
    return round(distance, 2)

# Example Usage:
point1 = (1, 2)
point2 = (4, 6)
distance = calculate_distance(point1, point2)
print(f"The distance between {point1} and {point2} is: {distance}") # Output:
The distance between (1, 2) and (4, 6) is: 5.0

point3 = (-1, -1)
point4 = (2, 3)
distance2 = calculate_distance(point3, point4)
print(f"The distance between {point3} and {point4} is: {distance2}") #
Output: The distance between (-1, -1) and (2, 3) is: 5.0

point5 = (0, 0)
point6 = (1, 1)
distance3 = calculate_distance(point5, point6)
print(f"The distance between {point5} and {point6} is: {distance3}") #
Output: The distance between (0, 0) and (1, 1) is: 1.41
```

Corrected JavaScript Solution (for Codewars)

JavaScript

```
function distance(x1, y1, x2, y2) {

  const dx = x2 - x1;
  const dy = y2 - y1;

  const distVal = Math.sqrt(dx * dx + dy * dy);
  return parseFloat(distVal.toFixed(2));
}
```

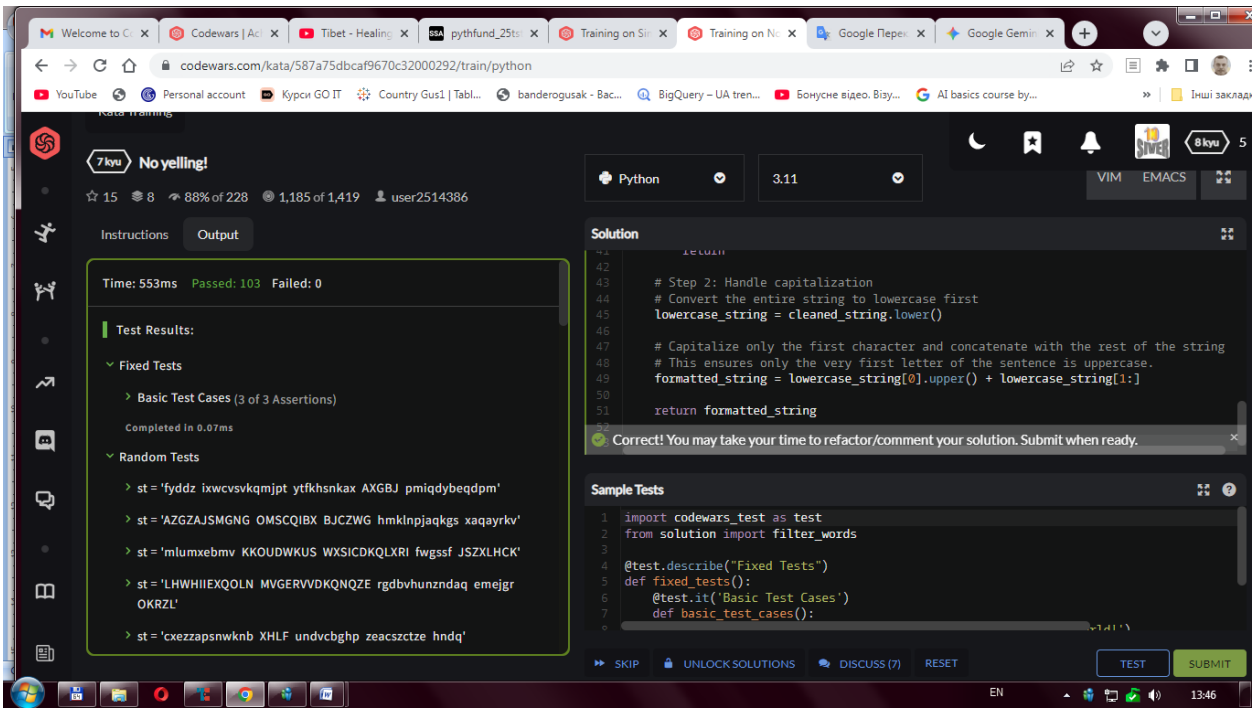


3.

Write a function taking in a string like `WOW this is REALLY amazing` and returning `Wow this is really amazing`. String should be capitalized and properly spaced. Using `re` and `string` is not allowed.

Examples:

```
def filter_words(s):
    words = s.split()
    cleaned_string = ' '.join(words)

    if not cleaned_string:
        return ""

    lowercase_string = cleaned_string.lower()

    formatted_string = lowercase_string[0].upper() + lowercase_string[1:]

    return formatted_string
```

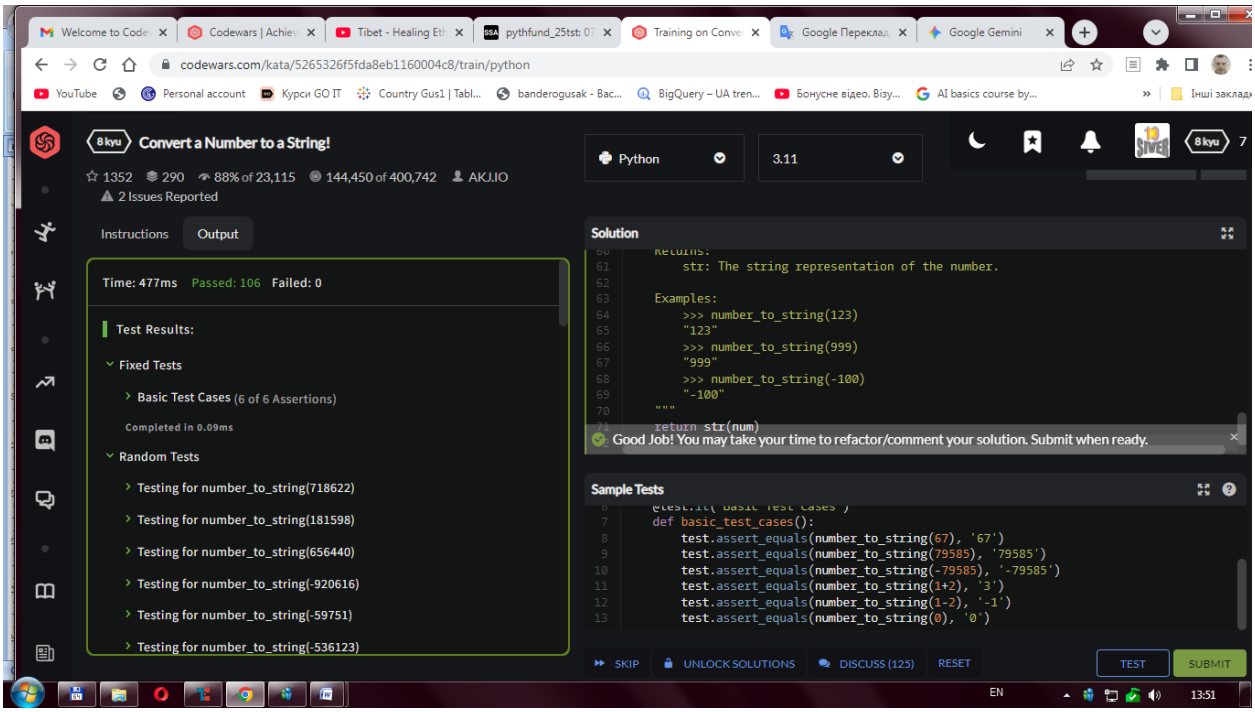


4.

We need a function that can transform a number (integer) into a string.

What ways of achieving this do you know?

```
def number_to_string(num):
    return str(num)
```

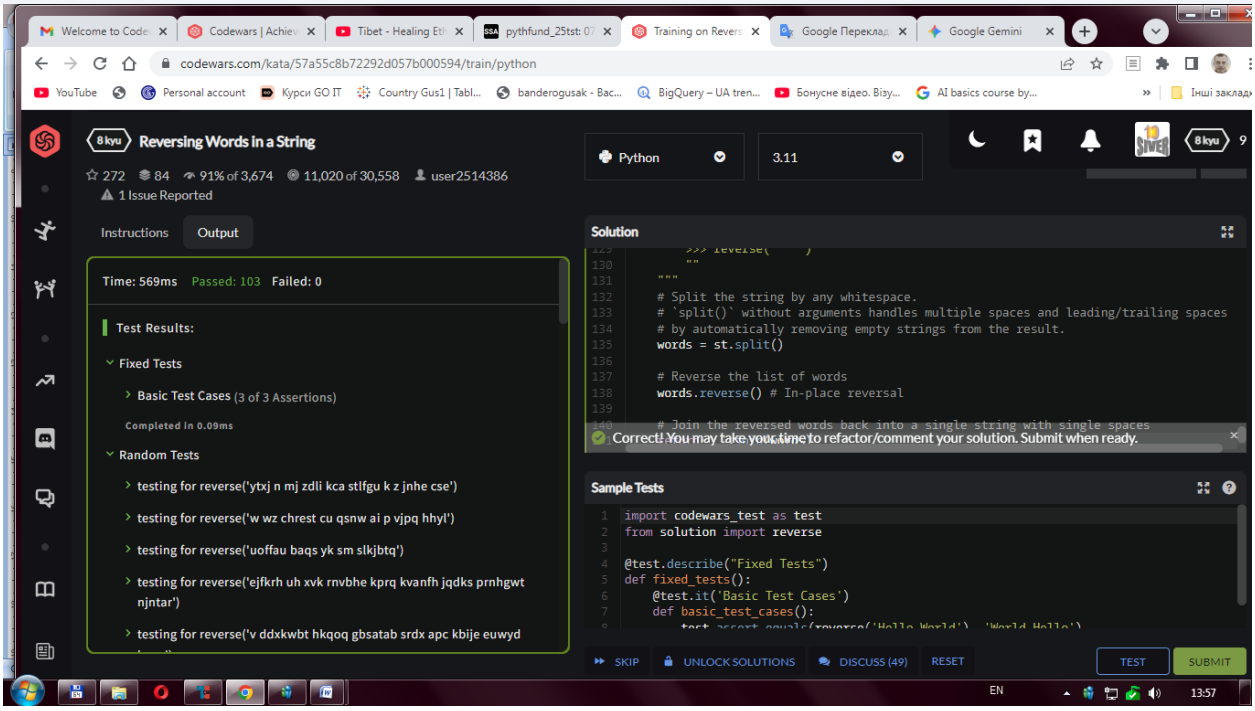


5.

You need to write a function that reverses the words in a given string. Words are always separated by a single space.

As the input may have trailing spaces, you will also need to ignore unneccesary whitespace.

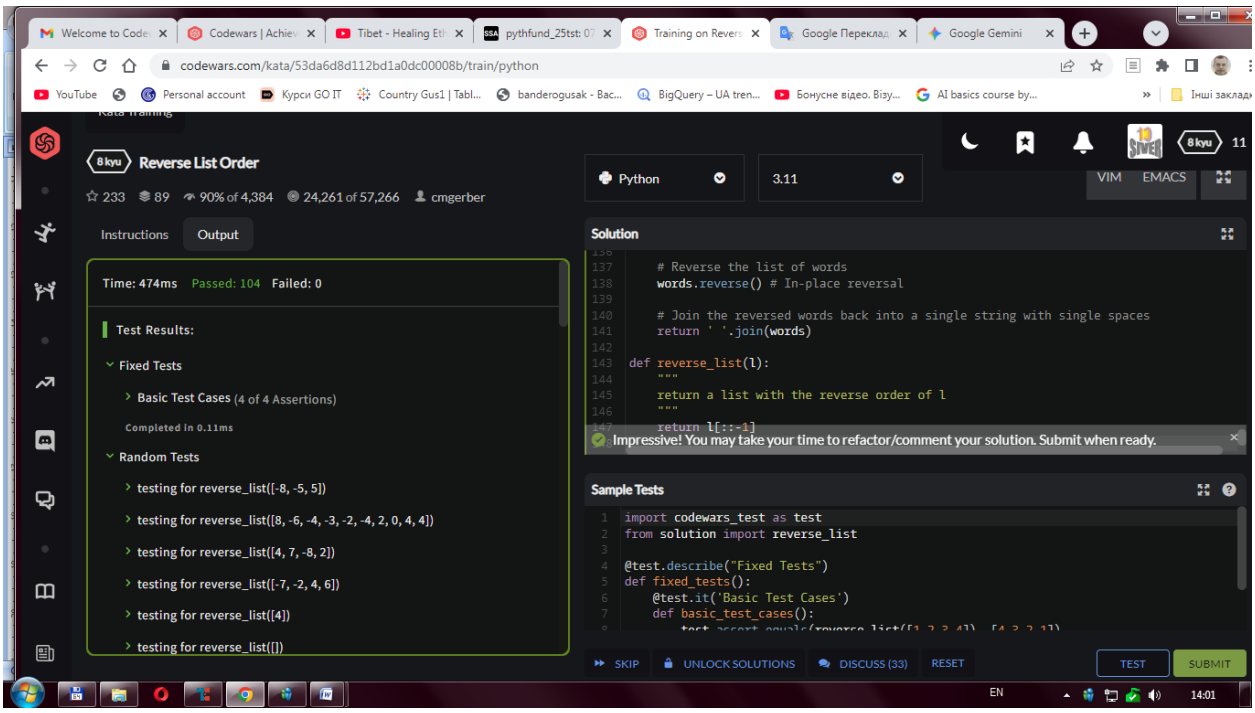
```
def reverse(st):

    words = st.split()

    words.reverse()

    return ' '.join(words)
```



6.

In this kata you will create a function that takes in a list and returns a list with the reverse order.

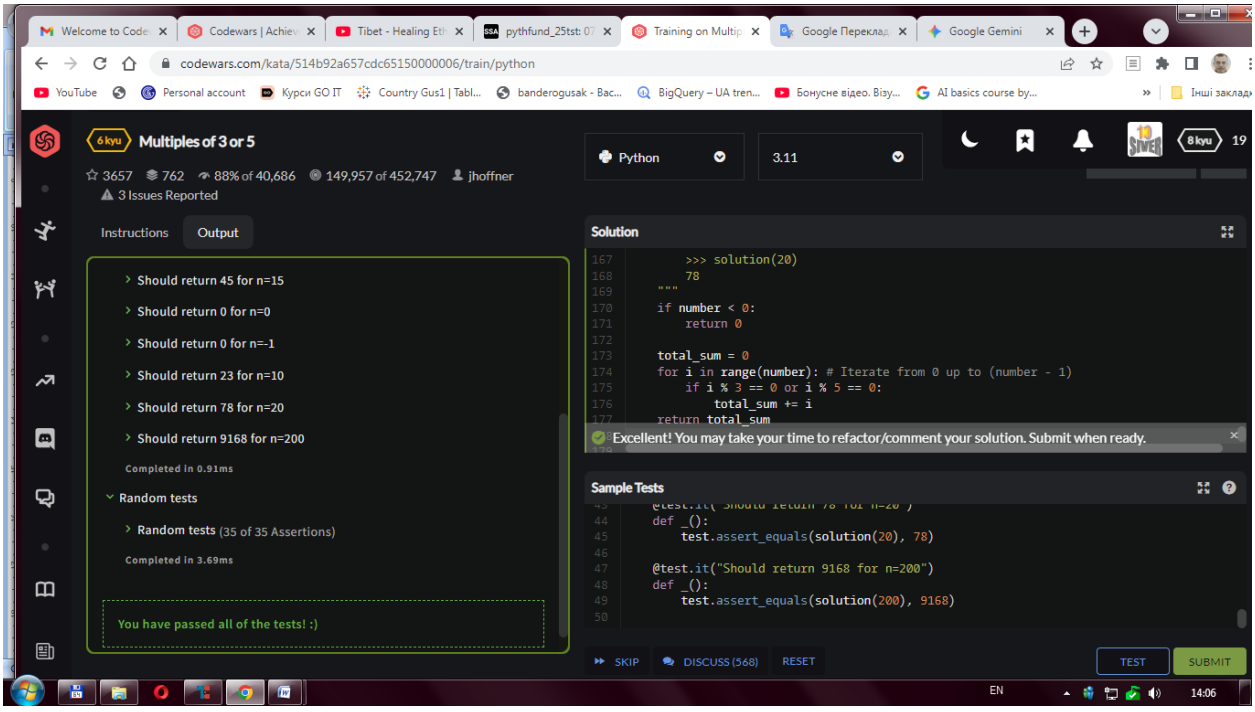
```
def reverse_list(l):
    """
    return a list with the reverse order of l
    """
    return l[::-1]
```



7.

If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.

```
def solution(number):

    if number < 0:
        return 0

    total_sum = 0
    for i in range(number): # Iterate from 0 up to (number - 1)
        if i % 3 == 0 or i % 5 == 0:
            total_sum += i
    return total_sum
```



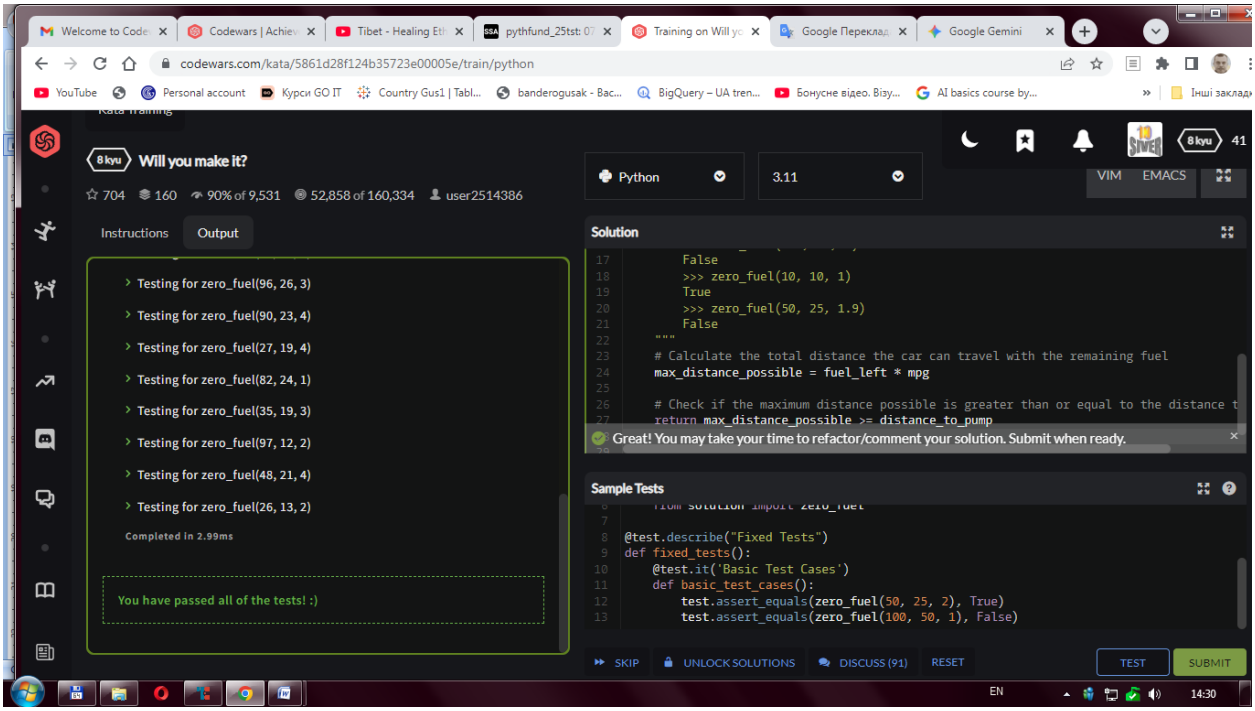
8.

You were camping with your friends far away from home, but when it's time to go back, you realize that your fuel is running out and the nearest pump is `50` miles away! You know that on average, your car runs on about `25` miles per gallon. There are `2` gallons left.

Considering these factors, write a function that tells you if it is possible to get to the pump or not.

Function should return `true` if it is possible and `false` if not.

```python
def zero_fuel(distance_to_pump, mpg, fuel_left):

    max_distance_possible = fuel_left * mpg

    return max_distance_possible >= distance_to_pump
```

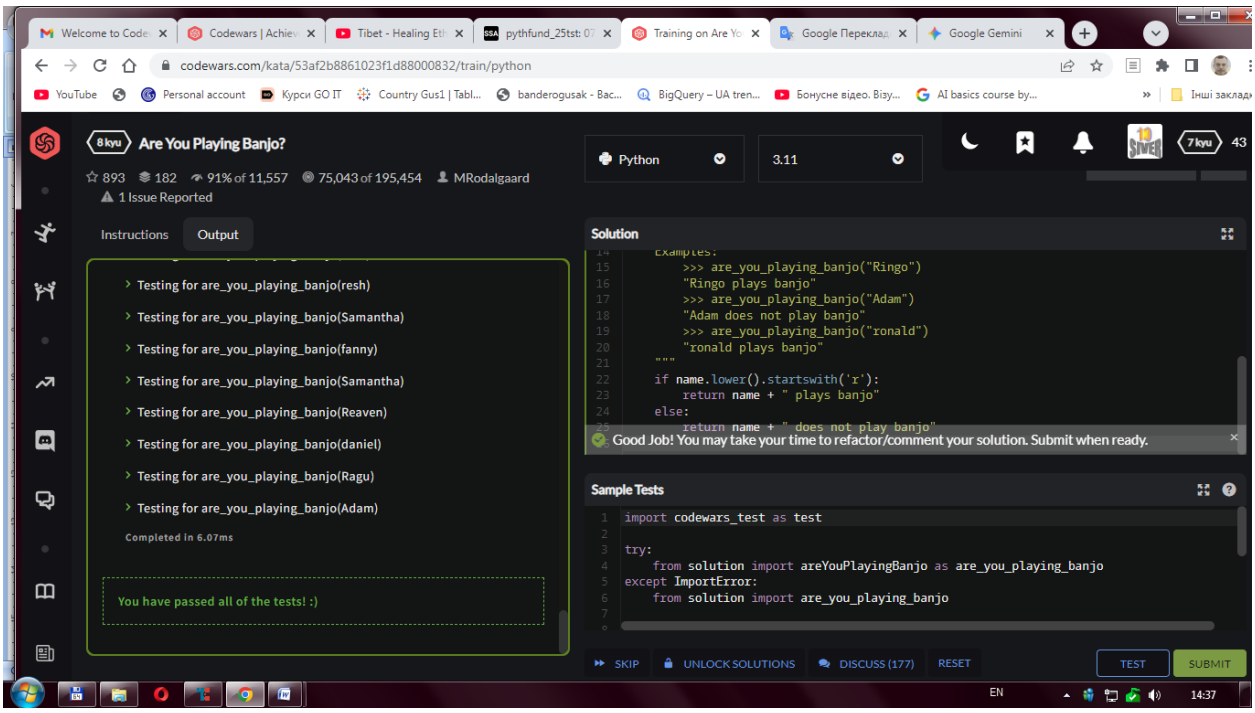


9.

Create a function which answers the question "Are you playing banjo?".
If your name starts with the letter "R" or lower case "r", you are playing banjo!

The function takes a name as its only argument, and returns one of the following strings:

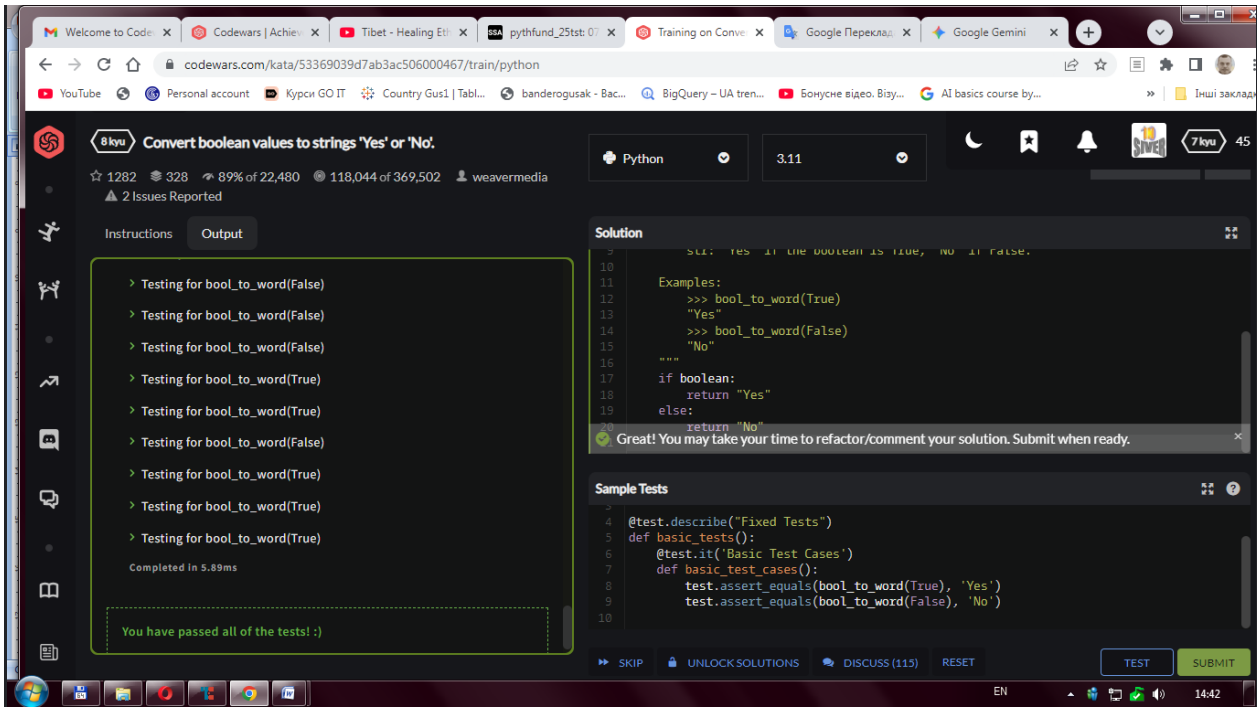
```python
def are_you_playing_banjo(name):

    if name.lower().startswith('r'):
        return name + " plays banjo"
    else:
        return name + " does not play banjo"
```



10.

Complete the method that takes a boolean value and return a `"Yes"` string for `true`, or a `"No"` string for `false`.

```
def bool_to_word(boolean):

    if boolean:
        return "Yes"
    else:
        return "No"
```



11.

Consider an array/list of sheep where some sheep may be missing from their place. We need a function that counts the number of sheep present in the array (true means present).

For example,

[True, True, True, False,

True, True, True, True ,

True, False, True, False,

True, False, False, True ,

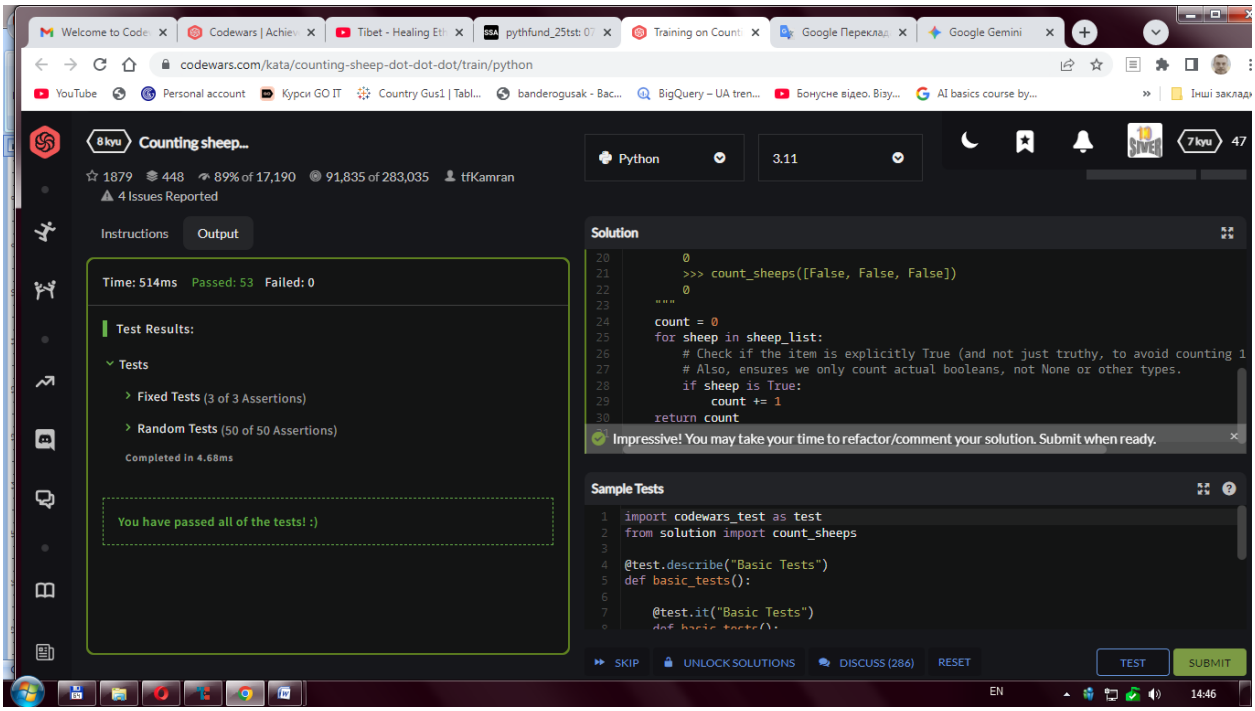
True, True, True, True ,

False, False, True, True]

The correct answer would be 17.

Hint: Don't forget to check for bad values like null/undefined

```
def count_sheeps(sheep_list):

    count = 0
    for sheep in sheep_list:

        if sheep is True:
            count += 1
    return count
```



12.

Some new animals have arrived at the zoo. The zoo keeper is concerned that perhaps the animals do not have the right tails. To help her, you must correct the broken function to make sure that the second argument (tail), is the same as the last letter of the first argument (body) - otherwise the tail wouldn't fit!

If the tail is right return true,

```
def correct_tail(body, tail):

    return body[-1] == tail
```