**Methods and Tools in SW Development**

**Homework 5**

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**Function Name:** openFile

**Number of tests:** 3

**Items to test:**

* Test with filename of existing file
* Test with file that does not exist
* Test with input other than a string

**Inputs used for testing:**

* “testing.txt”
* “test.txt”
* 123

**Corrections made:**

In paragraph form, discuss what changes were made to the function and discuss why they were made. Reference specific tests from the “items to test” section to list what failed previously and how these changes prevented failures.

* The possible failures are caused by passing something other than a string into ‘filename’ or by passing in a filename that does not exist. The first thing that I changed was to check the type of the input ‘filename.’ If the input is not a string, like in ‘test\_openFile\_int,’ then it will print an error message and return. The other change I made was to put the open(filename) command inside a try/except block. If ‘filename’ references a file that does not exist like in ‘test\_openFile\_wrong\_name,’ it will just print an error message.

**Tests passed:** 3

**Tests failed:** 0

**Function Name:** numbers

**Number of tests:** 4

**Items to test:**

* Two integers
* Two floats
* Divide by zero
* Wrong datatypes

**Inputs used for testing:**

* 8, 4
* 2.2, 1.1
* 2, 0
* ‘abc’, [1, 2, 3]

**Corrections made:**

In paragraph form, discuss what changes were made to the function and discuss why they were made. Reference specific tests from the “items to test” section to list what failed previously and how these changes prevented failures.

* The possible errors are datatype errors or division by zero. Accordingly, the tests that failed initially were ‘test\_numbers\_datatype’ and ‘test\_numbers\_zero.’ The first change I made was to check if num2 is 0. If it is, print an error message and return. Then I put the division inside a try/except block to catch any datatype errors such as the ‘test\_numbers\_datatype’ test which attempts to divide a string by a list.

**Tests passed:** 4

**Tests failed:** 0

**Function Name:** dist

**Number of tests:** 3

**Items to test:**

* Distance of 4 numbers = sqrt of 8
* Distance of 4 numbers = sqrt of 130
* Distance of 3 numbers and a string = None

**Inputs used for testing:**

* (2, 2, 4, 4), (9, 3, 18, 10), (‘1’, 0, 3, 8)

**Corrections made:**

Made it so the distance of 4 numbers equaled the sqrt of 8, made it so the distance of 4 numbers equaled the sqrt of 130, and made it the distance of numbers and a string equaled None.

**Tests passed:** 3

**Tests failed:** 0

**Function Name:** isPalendrome

**Number of tests:** 4

**Items to test:**

* palindrome
* non-palindrome
* non-string
* palindrome 🡪 test fail

**Inputs used for testing:**

* tacocat
* ‘not a palindrome’
* [1, 2, 1]
* {‘1’: ‘test’}
* abcdcba

**Corrections made:**

In paragraph form, discuss what changes were made to the function and discuss why they were made. Reference specific tests from the “items to test” section to list what failed previously and how these changes prevented failures.

* The first change I made was to put the reversal statement in a try/except block to catch invalid inputs such as with ‘test\_isPalindrome\_datatype’ which passes in a dictionary. The other change I made was to check if the input is a string, so that inputs such as [1,2,1] in ‘test\_isPalindrome\_nonstring’ do not succeed.

*(optional) Failed tests: ‘test\_isPalindrome\_fail’*

List what failed and why it was meant to fail

* ‘abcdcba’ is a palindrome but I tested ‘return False’

**Tests passed:** 3

**Tests failed:** 1

**Function Name:** divide

**Number of tests:** 3

**Items to test:**

* 2 inputs
* 2 inputs
* 1 string

**Inputs used for testing:**

* [6, 2], [12,0], [“Hello”]
* …

**Corrections made:**

Made it so the inputs 6 and 2 equal 3.0 when divided. Made it so the inputs 12 and 0 equaled None when divided. Made it so that the string “Hello” equaled none when divided.

**Tests passed:** 3

**Tests failed:** 0

Zach Chandler( zpc24)

**Function Name:** sq

**Number of tests:** 6

**Items to test:**

* Test with boolean value
* Test with integer
* Test that it does not equal an integer
* Test normal square root functions

**Inputs used for testing:**

* 4, 81, 25, 0, bool(4.0), 9
* …

**Corrections made:**

I made it so that the square root of 4 would equal 2 instead of 3. I made it so the square root of 81 did not equal 10. I made it so that the square root of 25 would equal 5 instead of 7. I made it so that the square root of 0 would not equal an integer. I made it so that the square root of bool(4.0) = 1.0 instead of equaling 2.0. I made it so that the square root of 9 equals 3 instead of not equaling 3.

**Tests passed:** 6

**Tests failed:** 0

**Function Name:** greetUser

**Number of tests:** 3

**Items to test:**

* Normal string input
* Other datatypes
* Strings with numbers

**Inputs used for testing:**

* “Josh”, “A”, “Bean”
* 1, [2,3], 4.5
* “J0sh”, “A”, “22”

**Corrections made:**

In paragraph form, discuss what changes were made to the function and discuss why they were made. Reference specific tests from the “items to test” section to list what failed previously and how these changes prevented failures.

* I updated the greetUser function to check if the inputs are type string and then if the inputs have letters. If either is true, the function prints “Invalid input” and returns. The test ‘test\_greetUser\_datatype’ tests non-string inputs, and the test ‘test\_greetUser\_numbers’ tests input with numbers in the string.

**Tests passed:** 3

**Tests failed:** 0

Zach Chandler (zpc24)

**Function Name:** displayItem

**Number of tests:** 3

**Items to test:**

* A normal display item test
* A display item test does not equal

**Inputs used for testing:**

* (20,1), (0,1), (3, 1)

**Corrections made:**

I made it so two of the functions items would not equal the result. I made it so one of the functions input would equal its result instead of the opposite.

**Tests passed:** 3

**Tests failed:** 0