Prateek Singh Chauhan
CWID: 20016291

September 14, 2022

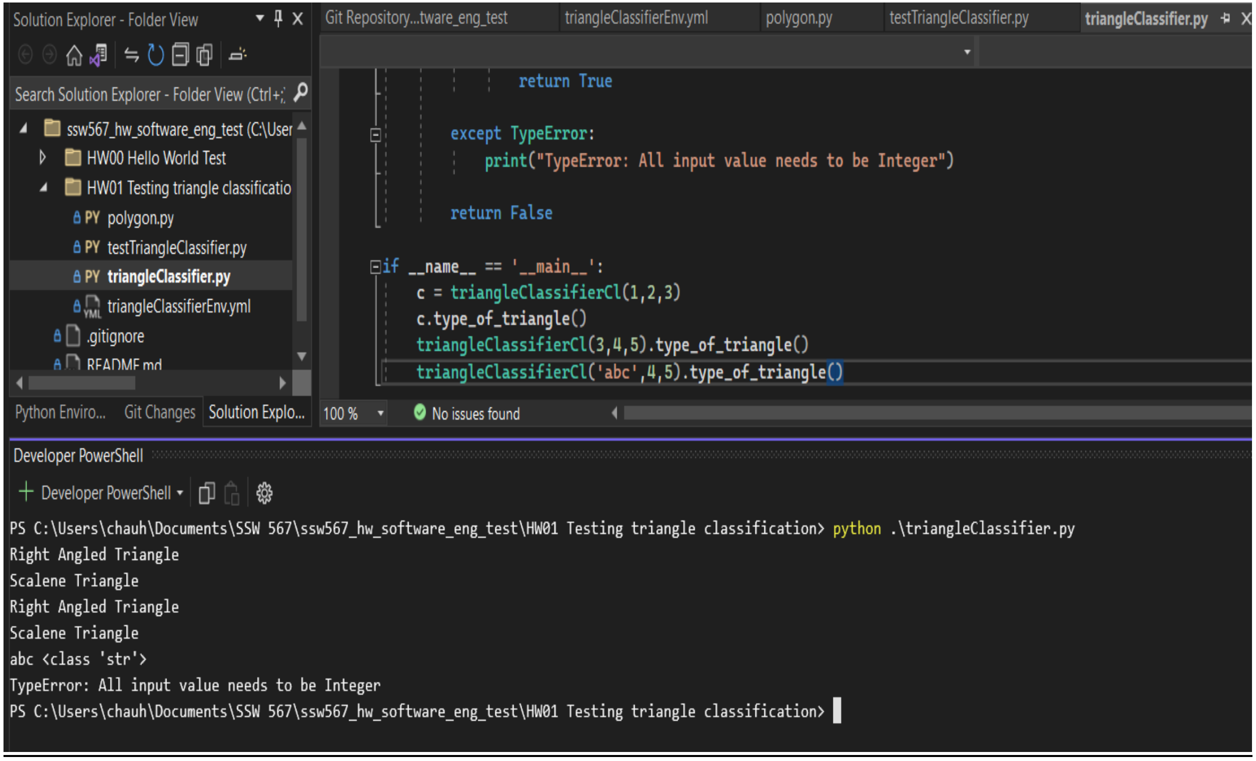
HW 01: Testing triangle classification

Deliverable 1:

HW01 Testing triangle classification.zip

Deliverable 2:

Source code and Output;


Solution Explorer - Folder View
Search Solution Explorer - Folder View (Ctrl+;
ssw567_hw_software_eng_test (C:\User
HW00 Hello World Test
HW01 Testing triangle classificatio
polygon.py
testTriangleClassifier.py
triangleClassifier.py
triangleClassifierEnv.yml
.gitignore
README.md
Python Enviro...
Git Changes
Solution Explo...
Git Repository...tware_eng_test
triangleClassifierEnv.yml
polygon.py
testTriangleClassifier.py
triangleClassifier.py
100 %
No issues found
Developer PowerShell
Developer PowerShell

```
                return True

        except TypeError:
            print("TypeError: All input value needs to be Integer")

        return False

if __name__ == '__main__':
    c = triangleClassifierCl(1,2,3)
    c.type_of_triangle()
    triangleClassifierCl(3,4,5).type_of_triangle()
    triangleClassifierCl('abc',4,5).type_of_triangle()
```

```
PS C:\Users\chauh\Documents\SSW 567\ssw567_hw_software_eng_test\HW01 Testing triangle classification> python .\triangleClassifier.py
Right Angled Triangle
Scalene Triangle
Right Angled Triangle
Scalene Triangle
abc <class 'str'>
TypeError: All input value needs to be Integer
PS C:\Users\chauh\Documents\SSW 567\ssw567_hw_software_eng_test\HW01 Testing triangle classification>
```

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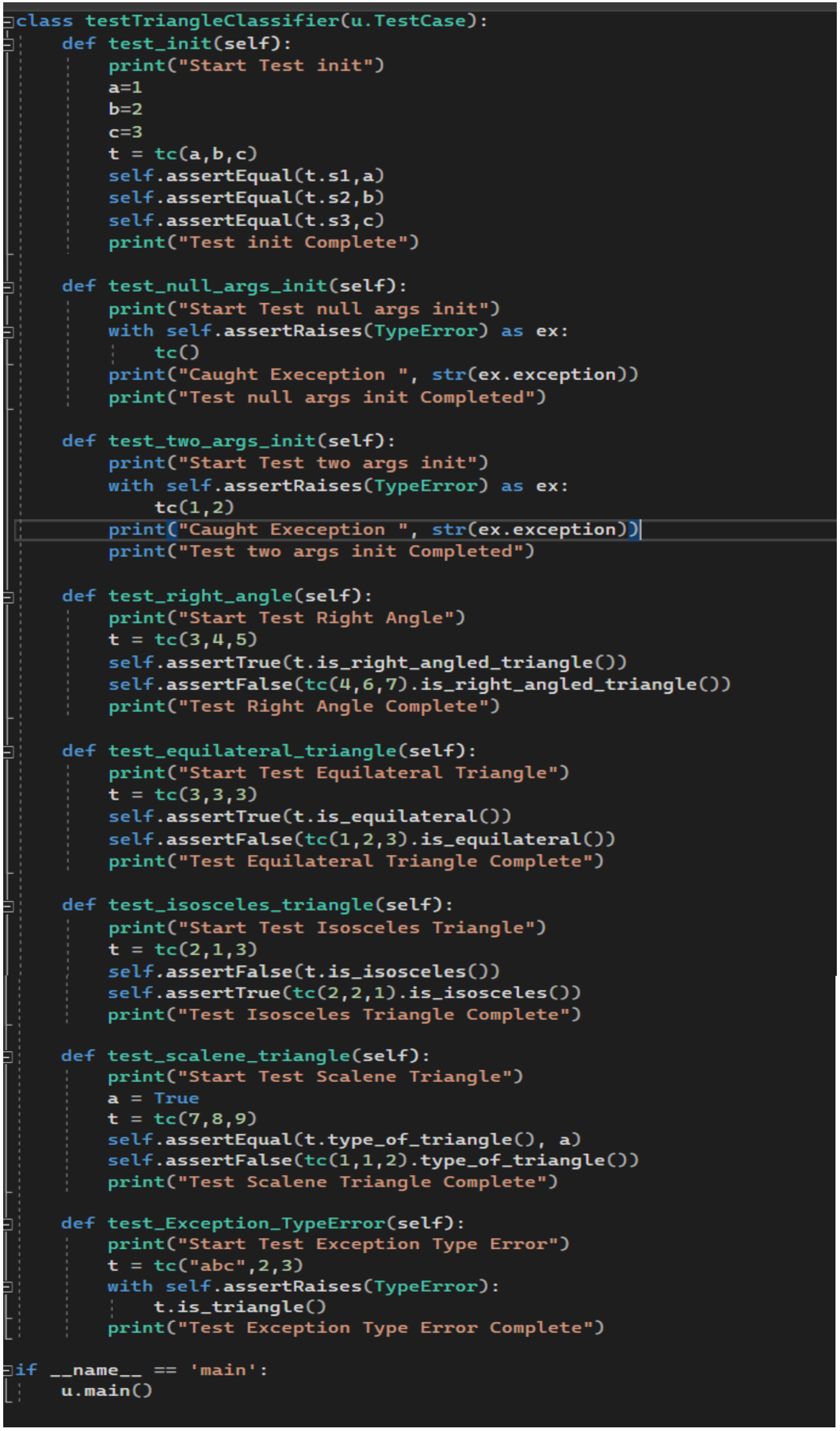
Test Cases:



```python
class testTriangleClassifier(u.TestCase):
    def test_init(self):
        print("Start Test init")
        a=1
        b=2
        c=3
        t = tc(a,b,c)
        self.assertEqual(t.s1,a)
        self.assertEqual(t.s2,b)
        self.assertEqual(t.s3,c)
        print("Test init Complete")

    def test_null_args_init(self):
        print("Start Test null args init")
        with self.assertRaises(TypeError) as ex:
            tc()
        print("Caught Exeception ", str(ex.exception))
        print("Test null args init Completed")

    def test_two_args_init(self):
        print("Start Test two args init")
        with self.assertRaises(TypeError) as ex:
            tc(1,2)
        print("Caught Exeception ", str(ex.exception))
        print("Test two args init Completed")

    def test_right_angle(self):
        print("Start Test Right Angle")
        t = tc(3,4,5)
        self.assertTrue(t.is_right_angled_triangle())
        self.assertFalse(tc(4,6,7).is_right_angled_triangle())
        print("Test Right Angle Complete")

    def test_equilateral_triangle(self):
        print("Start Test Equilateral Triangle")
        t = tc(3,3,3)
        self.assertTrue(t.is_equilateral())
        self.assertFalse(tc(1,2,3).is_equilateral())
        print("Test Equilateral Triangle Complete")

    def test_isosceles_triangle(self):
        print("Start Test Isosceles Triangle")
        t = tc(2,1,3)
        self.assertFalse(t.is_isosceles())
        self.assertTrue(tc(2,2,1).is_isosceles())
        print("Test Isosceles Triangle Complete")

    def test_scalene_triangle(self):
        print("Start Test Scalene Triangle")
        a = True
        t = tc(7,8,9)
        self.assertEqual(t.type_of_triangle(), a)
        self.assertFalse(tc(1,1,2).type_of_triangle())
        print("Test Scalene Triangle Complete")

    def test_Exception_TypeError(self):
        print("Start Test Exception Type Error")
        t = tc("abc",2,3)
        with self.assertRaises(TypeError):
            t.is_triangle()
        print("Test Exception Type Error Complete")

if __name__ == 'main':
    u.main()
```

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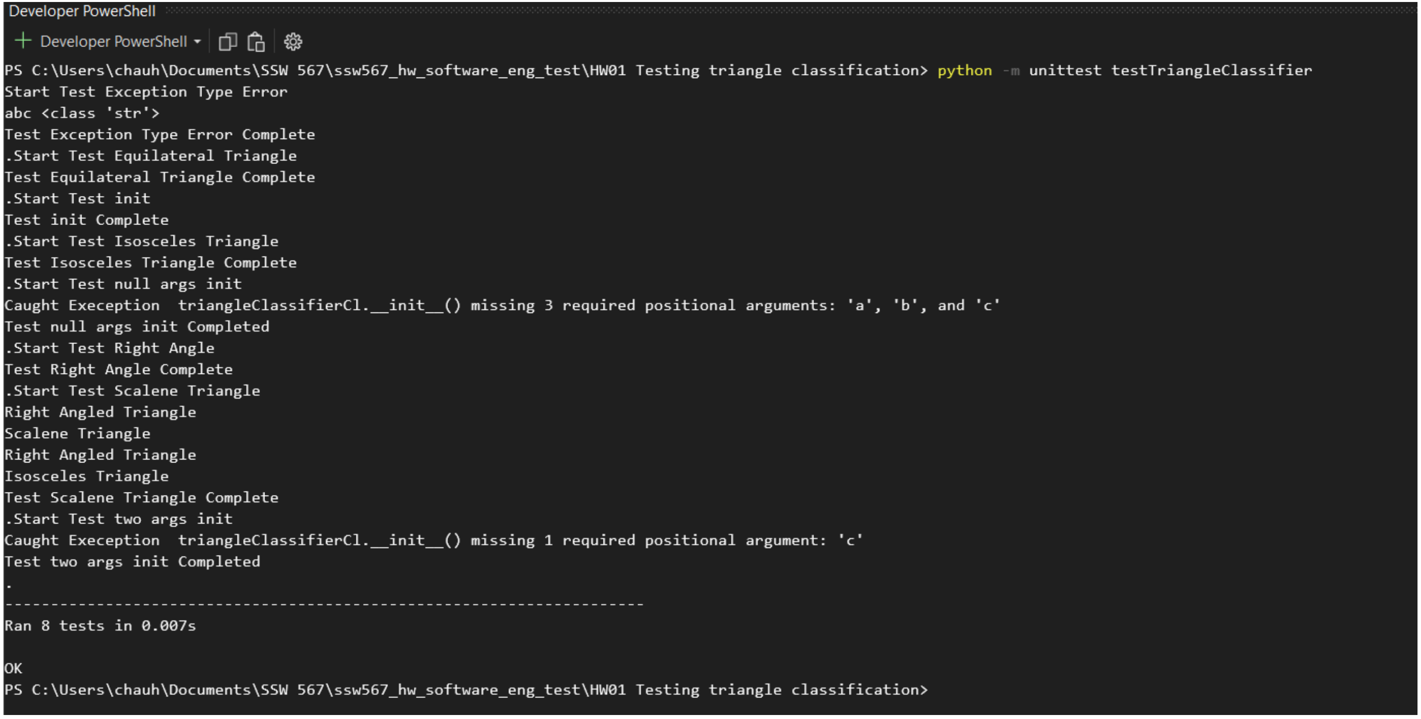
Test Output:



```
PS C:\Users\chauh\Documents\SSW 567\ssw567_hw_software_eng_test\HW01 Testing triangle classification> python -m unittest testTriangleClassifier
Start Test Exception Type Error
abc <class 'str'>
Test Exception Type Error Complete
.Start Test Equilateral Triangle
Test Equilateral Triangle Complete
.Start Test init
Test init Complete
.Start Test Isosceles Triangle
Test Isosceles Triangle Complete
.Start Test null args init
Caught Exeception  triangleClassifierCl.__init__() missing 3 required positional arguments: 'a', 'b', and 'c'
Test null args init Completed
.Start Test Right Angle
Test Right Angle Complete
.Start Test Scalene Triangle
Right Angled Triangle
Scalene Triangle
Right Angled Triangle
Isosceles Triangle
Test Scalene Triangle Complete
.Start Test two args init
Caught Exeception  triangleClassifierCl.__init__() missing 1 required positional argument: 'c'
Test two args init Completed
.
----------------------------------------------------------------------
Ran 8 tests in 0.007s

OK
PS C:\Users\chauh\Documents\SSW 567\ssw567_hw_software_eng_test\HW01 Testing triangle classification>
```

Deliverable 3:

Q: What challenges did you encounter with this assignment, if any?

- No challenges encountered apart from incomplete problem statement.

Q: What did you think about the requirements specification for this assignment?

- "Write a function classify_triangle() that takes three parameters: a, b, and c. The three parameters represent the lengths of the sides of a triangle. The function returns a string that specifies whether the triangle is scalene, isosceles, or equilateral, and whether it is a right triangle as well."
  Based on given requirements, Few Missing points not cleared in requirement:
    - The sum of the length of any two sides of a triangle is greater than the length of the third side.
    - Special case scenario: For an equilateral triangle, can a triangle be also considered as isosceles triangle since length of two sides of the triangle are equal.
    - Special Case scenario: If a=b=c or triangle is equilateral, then triangle cannot be right angled triangle.
    - Data type of a, b, c not mentioned, whether float or integer and for float, precision of length needs to be mentioned as in how many decimals after point. This could cause wrong data set being considered for test cases.
    - No mention of expected output or reporting for test.

Q: What challenges did you encounter with the tools?

- No challenges encountered.

Q: Describe the criteria you used to determine that you had sufficient test cases, i.e. how did you know you were done?

- Tested all the requirement mentioned in the problem statement given by stakeholders.
- Determined and tested all fault and failure scenarios.
    - Type Error for null arguments passed

- Type Error for <3 number of arguments passed
- Type Error for arguments passed is not of type int/float

Deliverable 4:

https://github.com/sabudanakichdi/ssw567_hw_software_eng_test/tree/main/HW01%20Testing%20triangle%20classification