

HW 05 Static Code Analysis

Assignment Description:

Use Pylint and Coverage tool to perform static code analysis and testing coverage.

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Summary:

I use Pylint and Coverage to perform the static code analysis. The output of both are shown below.

After use pylint to check the code and modify code based on the results Pylint provided, I managed to get a 8.57 out of 10. It complains about the line being too long, but I cannot find another way to reduce that since it is special in this program requires a lot of conditions. And also

“Too many boolean expressions in if statement” is also because of the triangles program requires that amount of Boolean expressions.

Pylint before change:

```
***** Module Hw
F: 1, 0: No module named Hw (fatal)
godlikenideMini:stevens godlikenideMini$ ls
Hw01-Xueshi Wang-1.py Triangle.py
godlikenideMini:stevens godlikenideMini$ pylint Hw01-Xueshi\Wang-1.py
No config file found, using default configuration
***** Module Hw01-Xueshi Wang-1
C: 6, 0: Line too long (158/100) (line-too-long)
C: 8, 0: No space allowed before :
    if (a + b <= c) or (a + c <= b) or (b + c <= a) : #check if triangle is valid
                                                ^ (bad-whitespace)
C: 11, 0: Line too long (113/100) (line-too-long)
C: 14, 0: Line too long (106/100) (line-too-long)
C: 20, 0: Trailing whitespace (trailing-whitespace)
C: 21, 0: Trailing whitespace (trailing-whitespace)
C: 25, 0: No space allowed before comma
    self.assertEqual(classify_triangle(3, 4, 5), 'right')
                                                ^ (bad-whitespace)
C: 26, 0: No space allowed before comma
    self.assertEqual(classify_triangle(4, 5, 3), 'right')
                                                ^ (bad-whitespace)
C: 27, 0: No space allowed before comma
    self.assertEqual(classify_triangle(1, 2, 100), False) #invalid triangle
                                                ^ (bad-whitespace)
C: 28, 0: No space allowed before comma
    self.assertEqual(classify_triangle(3, 3, 3), 'equilateral')
                                                ^ (bad-whitespace)
C: 29, 0: No space allowed before comma
    self.assertEqual(classify_triangle(3, 3, 4), 'isosceles')
                                                ^ (bad-whitespace)
C: 30, 0: Trailing whitespace (trailing-whitespace)
C: 33, 0: No space allowed before comma
    self.assertNotEqual(classify_triangle(3, 3, 4), 'equilateral')
                                                ^ (bad-whitespace)
C: 34, 0: No space allowed before comma
    self.assertNotEqual(classify_triangle(1, 2, 100), 'scalene')
                                                ^ (bad-whitespace)
C: 35, 0: Exactly one space required after comma
    self.assertNotEqual(classify_triangle(10,10,10),'isoceles')
                                                ^ (bad-whitespace)
C: 35, 0: Exactly one space required after comma
    self.assertNotEqual(classify_triangle(10,10,10),'isoceles')
                                                ^ (bad-whitespace)
C: 35, 0: Exactly one space required after comma
    self.assertNotEqual(classify_triangle(10,10,10),'isoceles')
                                                ^ (bad-whitespace)
C: 38, 0: Final newline missing (missing-final-newline)
C: 1, 0: Module name "Hw01-Xueshi Wang-1" doesn't conform to snake_case naming style (invalid-name)
C: 5, 0: Argument name "a" doesn't conform to snake_case naming style (invalid-name)
C: 5, 0: Argument name "b" doesn't conform to snake_case naming style (invalid-name)
C: 5, 0: Argument name "c" doesn't conform to snake_case naming style (invalid-name)
R: 17,13: Too many boolean expressions in if statement (6/5) (too-many-boolean-expressions)
C: 22, 0: Class name "Test_classify_triangle" doesn't conform to PascalCase naming style (invalid-name)
C: 22, 0: Missing class docstring (missing-docstring)
C: 31, 4: Missing method docstring (missing-docstring)

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Your code has been rated at 0.71/10
```

Pylint after change:

```
godlikenideMini:stevens godlikemini$ pylint triangles.py
No config file found, using default configuration
***** Module triangles
C: 10, 0: Line too long (125/100) (line-too-long)
C: 13, 0: Line too long (113/100) (line-too-long)
C: 21, 0: Line too long (139/100) (line-too-long)
R: 21,13: Too many boolean expressions in if statement (6/5) (too-many-boolean-expressions)

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Your code has been rated at 8.57/10

godlikenideMini:stevens godlikemini$ █
```

Coverage before change:

```
jodlikenideMini:stevens godlikemini$ coverage run triangles.py
test_case (__main__.TestClassifyTriangle)
test triangle function ... ok
test_case2 (__main__.TestClassifyTriangle)
Negative tests ... ok

-----
Ran 2 tests in 0.000s

OK
godlikenideMini:stevens godlikemini$ coverage report -m
Name              Stmts  Miss  Cover   Missing
-----
triangles.py       28      1    96%    20
godlikenideMini:stevens godlikemini$ █
```

Coverage after change:

```
godlikenideMini:stevens godlikemini$ coverage run triangles.py
test_case (__main__.TestClassifyTriangle)
test triangle function ... ok
test_case2 (__main__.TestClassifyTriangle)
Negative tests ... ok

-----
Ran 2 tests in 0.000s

OK
godlikenideMini:stevens godlikemini$ coverage report -m
Name              Stmts  Miss  Cover   Missing
-----
triangles.py       29      0   100%
godlikenideMini:stevens godlikemini$ █
```