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HW05: Static Code Analysis

Course: SSW – 567

Summary:

The code was changed to make it more legible and executable by eliminating any superfluous spaces, indentation, and variable renaming after the code analyzer was performed on the original program. Once this was finished, the static value was full. Consequently, 81% of the population was covered.

1. The GitHub URL of this code which is analyzed is:
   ➔ https://github.com/saurabhagrl/Sagrawal567

2. The name and output of the static code analyzer tool you used:
   ➔ The tool used for static code analyzer is **Pylint** and **Coverage**

Initial Output (Before making the changes to code)

```
************* Module triangle
triangle.py:8:3: C0303: Trailing whitespace (trailing-whitespace)
triangle.py:8:3: C0303: Trailing whitespace (trailing-whitespace)
triangle.py:19:0: C0301: Line too long (108/100) (line-too-long)
triangle.py:25:0: C0305: Trailing newlines (trailing-newlines)
triangle.py:10:0: C0103: Function name "classifyTriangle" doesn't conform to snake_case naming style (invalid-name)
triangle.py:10:0: C0103: Argument name "a" doesn't conform to snake_case naming style (invalid-name)
triangle.py:10:0: C0103: Argument name "b" doesn't conform to snake_case naming style (invalid-name)
triangle.py:10:0: C0103: Argument name "c" doesn't conform to snake_case naming style (invalid-name)
triangle.py:10:0: C0116: Missing function or method docstring (missing-function-docstring)
triangle.py:17:4: R1705: Unnecessary "elif" after "return" (no-else-return)
```

Pylint Report:

```
Report
======
12 statements analysed.

Statistics by type
------------------

+---------+-------+-----------+-----------+------------+---------+
|type     |number |old number |difference |%documented |%badname |
+=========+=======+===========+===========+============+=========+
|module   |1      |NC         |NC         |100.00      |0.00     |
+---------+-------+-----------+-----------+------------+---------+
|class    |0      |NC         |NC         |0           |0        |
+---------+-------+-----------+-----------+------------+---------+
|method   |0      |NC         |NC         |0           |0        |
+---------+-------+-----------+-----------+------------+---------+
|function |1      |NC         |NC         |0.00        |100.00   |
+---------+-------+-----------+-----------+------------+---------+


Raw metrics
-----------

+----------+-------+------+---------+-----------+
|type      |number |%     |previous |difference |
+==========+=======+======+=========+===========+
|code      |15     |55.56 |NC       |NC         |
+----------+-------+------+---------+-----------+
|docstring |8      |29.63 |NC       |NC         |
+----------+-------+------+---------+-----------+
|comment   |0      |0.00  |NC       |NC         |
+----------+-------+------+---------+-----------+
|empty     |4      |14.81 |NC       |NC         |
+----------+-------+------+---------+-----------+
```

```
Duplication
-----------

+-------------------------+------+---------+-----------+
|                         |now   |previous |difference |
+=========================+======+=========+===========+
|nb duplicated lines      |0     |NC       |NC         |
+-------------------------+------+---------+-----------+
|percent duplicated lines |0.000 |NC       |NC         |
+-------------------------+------+---------+-----------+


Messages by category
--------------------

+-----------+-------+---------+-----------+
|type       |number |previous |difference |
+===========+=======+=========+===========+
|convention |9      |NC       |NC         |
+-----------+-------+---------+-----------+
|refactor   |1      |NC       |NC         |
+-----------+-------+---------+-----------+
|warning    |0      |NC       |NC         |
+-----------+-------+---------+-----------+
|error      |0      |NC       |NC         |
+-----------+-------+---------+-----------+


Messages
--------

+---------------------------+-------------+
|message id                 |occurrences |
+===========================+=============+
|invalid-name               |4           |
+---------------------------+-------------+
|trailing-whitespace        |2           |
+---------------------------+-------------+
|trailing-newlines          |1           |
+---------------------------+-------------+
|no-else-return             |1           |
+---------------------------+-------------+
|missing-function-docstring |1           |
+---------------------------+-------------+
|line-too-long              |1           |
+---------------------------+-------------+



--------------------------------------------------------------------
Your code has been rated at 1.67/10 (previous run: 1.67/10, +0.00)
```

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3. The name and output of the code coverage tool you used:
   ➔ The tool used is coverage.py Initial: The initial coverage was 76%

```
Name                Stmts   Miss  Cover   Missing
-------------------------------------------------
TestTriangle.py        13      0   100%
triangle.py            12      6    50%   7-9, 12, 15-16
-------------------------------------------------
TOTAL                  25      6    76%
```

Final: The final coverage is 81%, covering all the test cases.

```
Name                 Stmts   Miss  Cover   Missing
--------------------------------------------------
TestTriangle.py         13      0   100%
triangle.py             14      5    64%   7-9, 12, 15
--------------------------------------------------
TOTAL                   27      5    81%
```

Coverage HTML:

Coverage report: 81%

coverage.py v6.4.1, created at 2022-10-11 15:38 -0400

Module	*statements*	*missing*	*excluded*	*coverage*
TestTriangle.py	13	0	0	100%
triangle.py	14	5	0	64%
Total	**27**	**5**	**0**	**81%**

coverage.py v6.4.1, created at 2022-10-11 15:38 -0400

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4. Identify both your original test cases and new test cases that you created to achieve at least 80% code coverage.
   ➔ When the initial request came in, we modified the code to be more efficient than 80% and posted it when we ran the test cases against the new code and were successful in getting coverage of more than 80%. An 81% efficiency was attained. There was no need to develop additional test cases after I thoroughly tested the program with the Assignment's several test cases. Making the necessary code corrections and then posting that everything was functioning properly was what I found to be effective.

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5. Attach screenshots of the output of the static code analyzer as well as code coverage. You should show a screenshot of the analysis results both before and after any changes that you make to your programs:
   ➔ **I have attached the screenshot of the static code analysis and code coverage above before and after already above. Also uploaded this assignment to the new repository as mentioned above with git URL.**