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Lab-5 work

Grp 26.

Static Analysis:

Static analysis is a method of examining the source code of a software program without executing it. Static analysis can help detect errors, bugs, vulnerabilities, and other quality issues in the code. Static analysis tools can perform various tasks such as checking syntax, style, logic, data flow, control flow, and security. Static analysis can improve the reliability, performance, and maintainability of software by identifying and correcting defects early in the development process. Here I have used the **pylint tool** to perform static analysis.

Code 1:

For my first example, i have taken code from

<https://github.com/purple/Python-Is-Easy/tree/master/%22if%22%20statements>

```
PS C:\Users\student\Desktop> py -m pylint lab-5.py
***** Module lab-5
lab-5.py:106:0: C0304: Final newline missing (missing-final-newline)
lab-5.py:1:0: C0103: Module name "lab-5" doesn't conform to snake_case naming style (invalid-name)
lab-5.py:12:0: C0103: Constant name "click" doesn't conform to UPPER_CASE naming style (invalid-name)
lab-5.py:13:0: C0103: Constant name "Like" doesn't conform to UPPER_CASE naming style (invalid-name)
lab-5.py:15:3: C0121: Comparison 'click == True' should be 'click is True' if checking for the singleton value True, or 'click' if testing for truthiness (singleton-comparison)
lab-5.py:16:4: C0103: Constant name "Like" doesn't conform to UPPER_CASE naming style (invalid-name)
lab-5.py:17:4: C0103: Constant name "click" doesn't conform to UPPER_CASE naming style (invalid-name)
lab-5.py:20:0: C0103: Constant name "Temperature" doesn't conform to UPPER_CASE naming style (invalid-name)
```

Error-1: Snake case naming style is a convention that typically uses names of files with lowercase letters and underscores only. Since lab-5 doesn't follow this convention, the error is shown.

Error-2: UPPER_CASE naming style is a naming convention used for constants where only uppercase letters are used. Since “click”, “Like”, etc. constant names don't follow this convention, the error is shown.

Error-3: Here in the code, lines 16 and 17 are executed only if click is true. But we are using the if condition as “if click == true”. So the error is basically telling us that comparison ‘click == true’ should be ‘click is true’ if checking for singleton value true, or ‘click’ if testing for truthiness.

Code 2:

For my second example, i have taken my code from

<https://github.com/purple/Python-Is-Easy/blob/master/dictionaries%20and%20sets/Dictionaryes-and-Sets.py>

```
PS C:\Users\student\Desktop\Lab-5> py -m pylint Lab5_2.py
***** Module lab5_2
Lab5_2.py:24:0: C0301: Line too long (103/100) (line-too-long)
Lab5_2.py:27:0: C0301: Line too long (116/100) (line-too-long)
Lab5_2.py:42:0: C0301: Line too long (109/100) (line-too-long)
Lab5_2.py:44:0: C0301: Line too long (104/100) (line-too-long)
Lab5_2.py:47:0: C0301: Line too long (159/100) (line-too-long)
Lab5_2.py:67:0: C0301: Line too long (120/100) (line-too-long)
Lab5_2.py:77:0: C0301: Line too long (108/100) (line-too-long)
Lab5_2.py:78:0: C0301: Line too long (193/100) (line-too-long)
Lab5_2.py:99:0: C0301: Line too long (109/100) (line-too-long)
Lab5_2.py:101:0: C0301: Line too long (104/100) (line-too-long)
Lab5_2.py:105:0: C0301: Line too long (104/100) (line-too-long)
Lab5_2.py:108:0: C0301: Line too long (135/100) (line-too-long)
Lab5_2.py:110:0: C0301: Line too long (118/100) (line-too-long)
Lab5_2.py:112:0: C0301: Line too long (118/100) (line-too-long)
Lab5_2.py:116:0: C0301: Line too long (125/100) (line-too-long)
Lab5_2.py:130:0: C0304: Final newline missing (missing-final-newline)
Lab5_2.py:15:5: W0130: Duplicate value 'Element1' in set (duplicate-value)
Lab5_2.py:19:0: W0105: String statement has no effect (pointless-string-statement)
Lab5_2.py:32:0: W0105: String statement has no effect (pointless-string-statement)
Lab5_2.py:55:0: W0105: String statement has no effect (pointless-string-statement)
Lab5_2.py:72:0: W0105: String statement has no effect (pointless-string-statement)
Lab5_2.py:76:0: W0105: String statement has no effect (pointless-string-statement)
```

Error-1: Here, most of the errors are “line too long” errors. They occur when a line of code exceeds a maximum length limit. The limit is set to improve readability and maintainability of code. We can use line breaks to get rid of these errors.

Error-2: The “final newline missing error” generally occurs when last line of any text file does not end with a newline character. When the last line of a file does not end with a new line character, it can cause issues when the file is read or processed by other programs.

Error-3: “String statement has no effect” error occurs when the code includes a string literal as a statement by itself, and the code doesn’t actually do anything with the string itself.

Code 3:

For my third example, i have taken my code from

<https://github.com/purple/Python-Is-Easy/tree/master/functions>

```
PS C:\Users\student\Desktop\Lab-5> py -m pylint lab5_3.py
***** Module lab5_3
lab5_3.py:33:0: C0301: Line too long (108/100) (line-too-long)
lab5_3.py:54:0: C0301: Line too long (101/100) (line-too-long)
lab5_3.py:56:0: C0301: Line too long (101/100) (line-too-long)
lab5_3.py:57:0: C0304: Final newline missing (missing-final-newline)
lab5_3.py:16:0: W0105: String statement has no effect (pointless-string-statement)
lab5_3.py:22:0: C0116: Missing function or method docstring (missing-function-docstring)
lab5_3.py:22:0: C0103: Function name "addOne" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:22:11: C0103: Argument name "Number" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:23:4: C0103: Variable name "Output" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:26:0: C0103: Constant name "Var" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:28:0: W0105: String statement has no effect (pointless-string-statement)
lab5_3.py:31:0: C0103: Constant name "Var2" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:33:0: C0103: Constant name "Var4" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:40:0: C0103: Constant name "Var4" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:42:0: C0103: Constant name "Var4" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:45:0: W0105: String statement has no effect (pointless-string-statement)
lab5_3.py:48:0: C0116: Missing function or method docstring (missing-function-docstring)
lab5_3.py:48:0: C0103: Function name "addOneAddTwo" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:48:17: C0103: Argument name "NumberOne" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:48:28: C0103: Argument name "NumberTwo" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:49:4: C0103: Variable name "Output" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:51:4: C0103: Variable name "Output" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:54:0: C0103: Constant name "Sum" doesn't conform to UPPER_CASE naming style (invalid-name)
```

Error-1: Some of the errors are the same as given in above examples like the “line too long” error and the “final newline missing error” and “string statement has no effect error”.

Error-2: “The missing function or method docstring” error arises when you dont include a docstring in your code. A docstring is a string literal that appears as the first statement in a module, function or method definition.

Error-3: Naming doesn’t conform to snake_case naming style or UPPER_CASE naming convention. These are the error we discussed earlier.

Code 4:

For my fourth example, i have taken my code from

<https://github.com/purple/Python-Is-Easy/blob/master/loops/Introduction-to-Loops.py>

```
PS C:\Users\student\Desktop\Lab-5> py -m pylint lab5_3.py
***** Module lab5_3
lab5_3.py:33:0: C0301: Line too long (108/100) (line-too-long)
lab5_3.py:54:0: C0301: Line too long (101/100) (line-too-long)
lab5_3.py:56:0: C0301: Line too long (101/100) (line-too-long)
lab5_3.py:57:0: C0304: Final newline missing (missing-final-newline)
lab5_3.py:16:0: W0105: String statement has no effect (pointless-string-statement)
lab5_3.py:22:0: C0116: Missing function or method docstring (missing-function-docstring)
lab5_3.py:22:0: C0103: Function name "addOne" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:22:11: C0103: Argument name "Number" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:23:4: C0103: Variable name "Output" doesn't conform to snake_case naming style (invalid-name)
lab5_3.py:26:0: C0103: Constant name "Var" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:28:0: W0105: String statement has no effect (pointless-string-statement)
lab5_3.py:31:0: C0103: Constant name "Var2" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:33:0: C0103: Constant name "Var4" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:40:0: C0103: Constant name "Var4" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_3.py:42:0: C0103: Constant name "Var4" doesn't conform to UPPER_CASE naming style (invalid-name)
PS C:\Users\student\Desktop\Lab-5> py -m pylint lab5_4.py
***** Module lab5_4
lab5_4.py:54:0: C0301: Line too long (104/100) (line-too-long)
lab5_4.py:86:0: C0304: Final newline missing (missing-final-newline)
lab5_4.py:1:0: C0114: Missing module docstring (missing-module-docstring)
lab5_4.py:9:0: C0103: Constant name "Word" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_4.py:21:0: W0105: String statement has no effect (pointless-string-statement)
lab5_4.py:27:0: W0105: String statement has no effect (pointless-string-statement)
lab5_4.py:34:0: W0105: String statement has no effect (pointless-string-statement)
lab5_4.py:40:0: W0105: String statement has no effect (pointless-string-statement)
lab5_4.py:53:0: W0105: String statement has no effect (pointless-string-statement)
lab5_4.py:63:0: W0105: String statement has no effect (pointless-string-statement)
lab5_4.py:79:0: W0105: String statement has no effect (pointless-string-statement)
```

Error-1: “Line too long” error. They occur when a line of code exceeds a maximum length limit. The limit is set to improve readability and maintainability of code. We can use line breaks to get rid of these errors.

Error-2: The “final newline missing error” generally occurs when last line of any text file does not end with a newline character. When the last line of a file does not end with a new line character, it can cause issues when the file is read or processed by other programs.

Error-3: “String statement has no effect” error occurs when the code includes a string literal as a statement by itself, and the code doesn’t actually do anything with the string itself.

Error-4: “The missing function or method docstring” error arises when you dont include a docstring in your code. A docstring is a string literal that appears as the first statement in a module, function or method definition.

Code 5:

For my fifth example, i have taken my code from

<https://github.com/purple/Python-Is-Easy/blob/master/error%20handling/main.py>

```
PS C:\Users\student\Desktop\Lab-5> py -m pylint lab5_5.py
***** Module lab5_5
lab5_5.py:11:0: C0301: Line too long (144/100) (line-too-long)
lab5_5.py:19:0: C0301: Line too long (106/100) (line-too-long)
lab5_5.py:33:0: C0301: Line too long (106/100) (line-too-long)
lab5_5.py:48:0: C0301: Line too long (106/100) (line-too-long)

lab5_5.py:119:0: W0702: No exception type(s) specified (bare-except)
lab5_5.py:121:4: W0107: Unnecessary pass statement (unnecessary-pass)
lab5_5.py:128:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:138:0: C0103: Constant name "keyword" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_5.py:142:7: W0703: Catching too general exception Exception (broad-except)
lab5_5.py:149:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:156:0: C0103: Constant name "keyword" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_5.py:168:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:175:0: C0103: Constant name "keyword" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_5.py:184:0: W0702: No exception type(s) specified (bare-except)
lab5_5.py:191:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:199:0: C0103: Constant name "keyword" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_5.py:208:0: W0702: No exception type(s) specified (bare-except)
lab5_5.py:219:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:236:0: W0702: No exception type(s) specified (bare-except)
lab5_5.py:247:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:264:0: W0702: No exception type(s) specified (bare-except)
lab5_5.py:275:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:307:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:324:7: W0703: Catching too general exception Exception (broad-except)
lab5_5.py:337:0: W0105: String statement has no effect (pointless-string-statement)
lab5_5.py:347:0: C0103: Constant name "keyword" doesn't conform to UPPER_CASE naming style (invalid-name)
lab5_5.py:355:7: W0703: Catching too general exception Exception (broad-except)
lab5_5.py:368:0: W0105: String statement has no effect (pointless-string-statement)

-----
Your code has been rated at 5.08/10

PS C:\Users\student\Desktop\Lab-5> █
```

Error-1: “Line too long” error. They occur when a line of code exceeds a maximum length limit. The limit is set to improve readability and maintainability of code. We can use line breaks to get rid of these errors.

Error-2: “String statement has no effect” error occurs when the code includes a string literal as a statement by itself, and the code doesn’t actually do anything with the string itself.

Error-3: UPPER_CASE naming style is a naming convention used for constants where only uppercase letters are used. Since “click”, “Like”, etc. constant names don’t follow this convention, the error is shown.

