


ASSIGNMENT 1

“DETAILED STUDY”



AUGUST 20, 2020

AIN SHAMS UNIVERSITY – FACULTY OF ENGINEERING

AIN-SHAMS UNIVERCITY
FACULTY OF ENGINEERING

CSE426: Software Maintenance and Evolution



Assignment 1 “Detailed Study”

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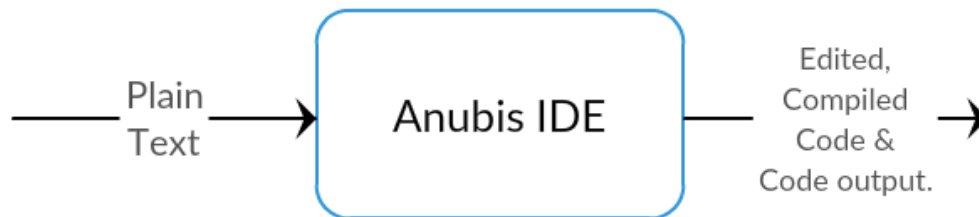
A report for Software Maintenance and Evolution Course coded CSE426 with the requirements of Ain Shams University.

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1. DESCRIPTION

The Anubis IDE according to the requirements is a simple program to write, edit, compile, and run micro python codes, the input is a normal plain text and the IDE should perform all the previous actions on this text input. Highlighting the text refers to preserved python words, function names and comments. Compile the code as identify any syntax errors highlight them, and finally run the code and provide the right output.

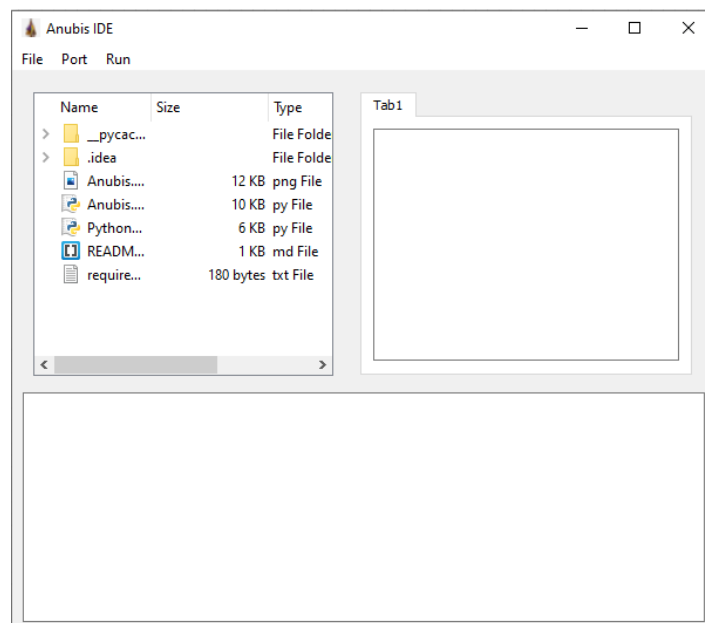


The IDE is developed using PYQT5 library, the PYGT5 library enables Python to be used as an alternative application development language to C++ on all supported platforms and as well lets you use the Qt GUI framework from Python.

To Run this Anubis IDE, you must ensure these requirements:

- Python3,
- Pyserial,
- PYQT5.

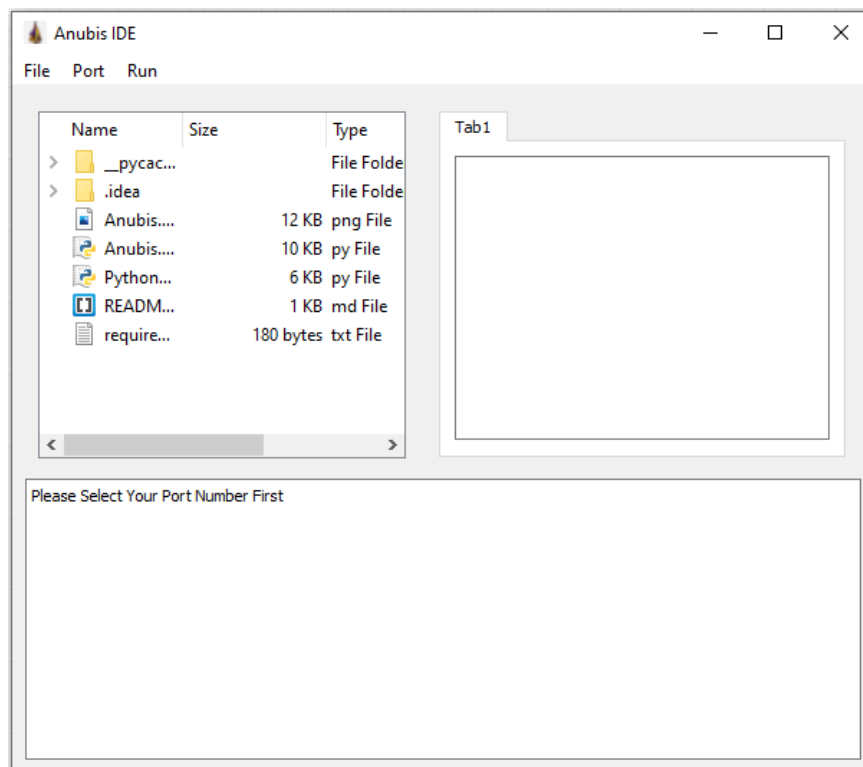
When starting the IDE you will find a 3 fields and a menu bar, the first field on top left is a browser to navigate through the files, the second one is the area to write the code, and the third one at the bottom is for seeing the result.



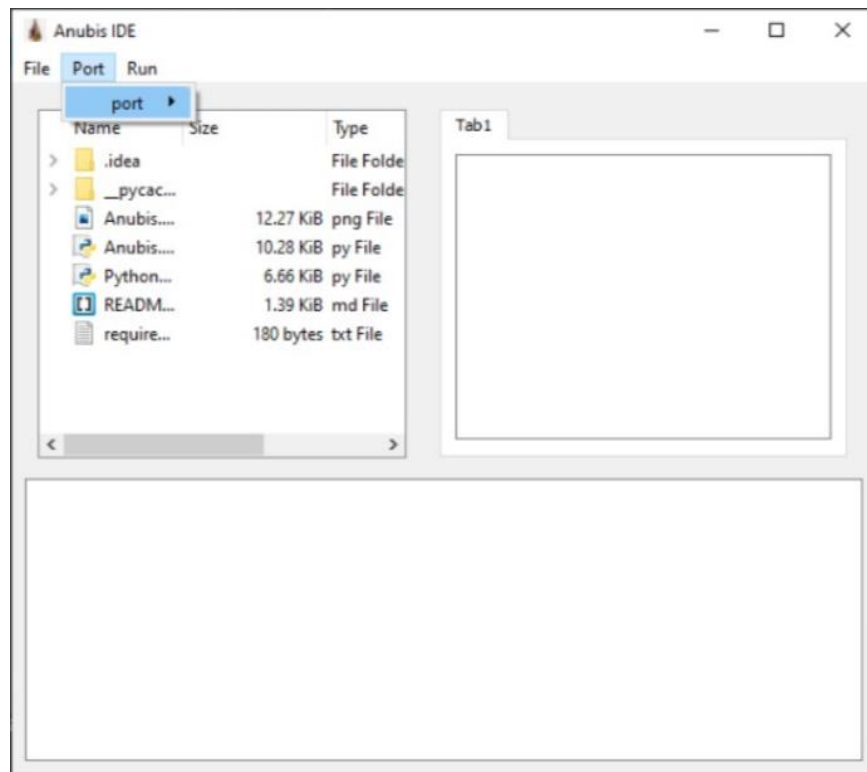
The IDE starts by executing the UI class, this class calls the other ones to execute the overall program “will be discussed briefly in the class diagram”. The program mainly is triggered by the action when clicking on the run option in the menu bar, ports menu is used to choose port number before running, file menu is used to open folder, save the current python code or close the program.

2. RUN TRIALS

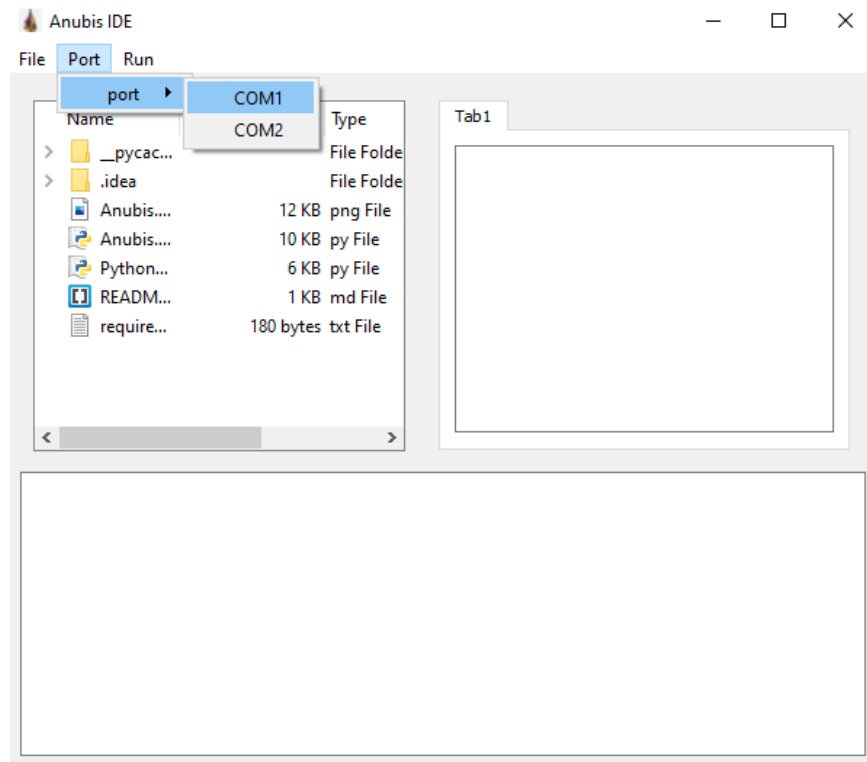
1. Firstly, when I click on run while I am not writing any code.



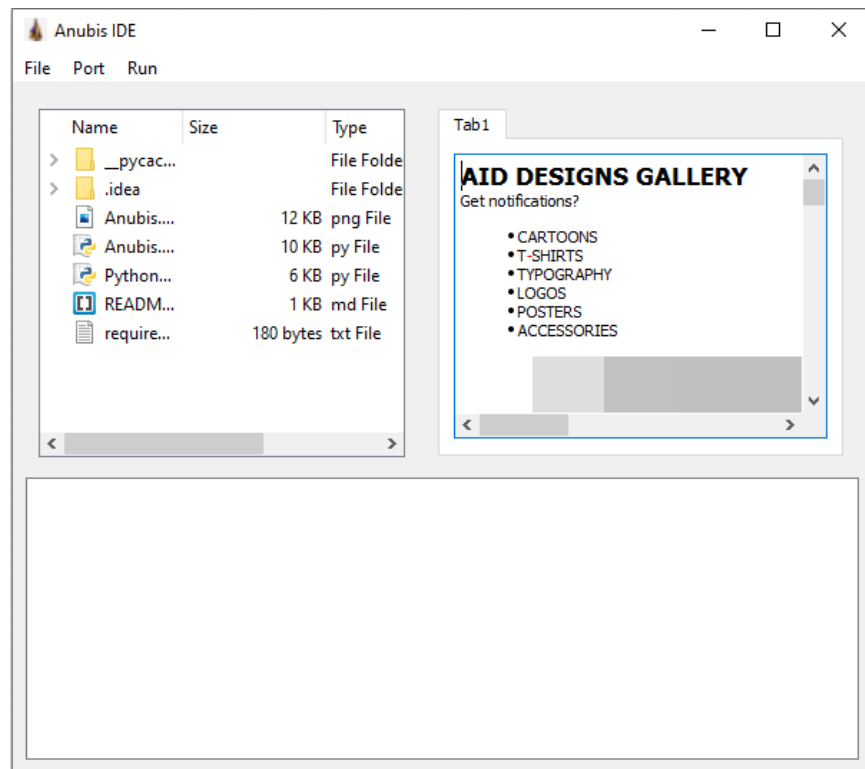
2. When choosing the port number. It is empty



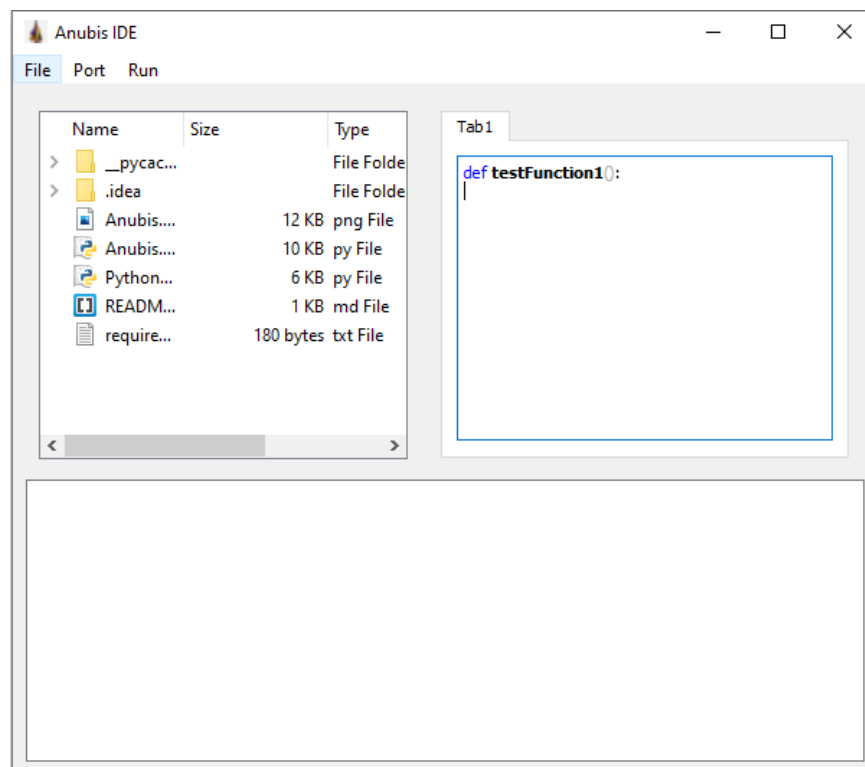
3. Downloaded virtual serial port driver and then checked the port menu again.



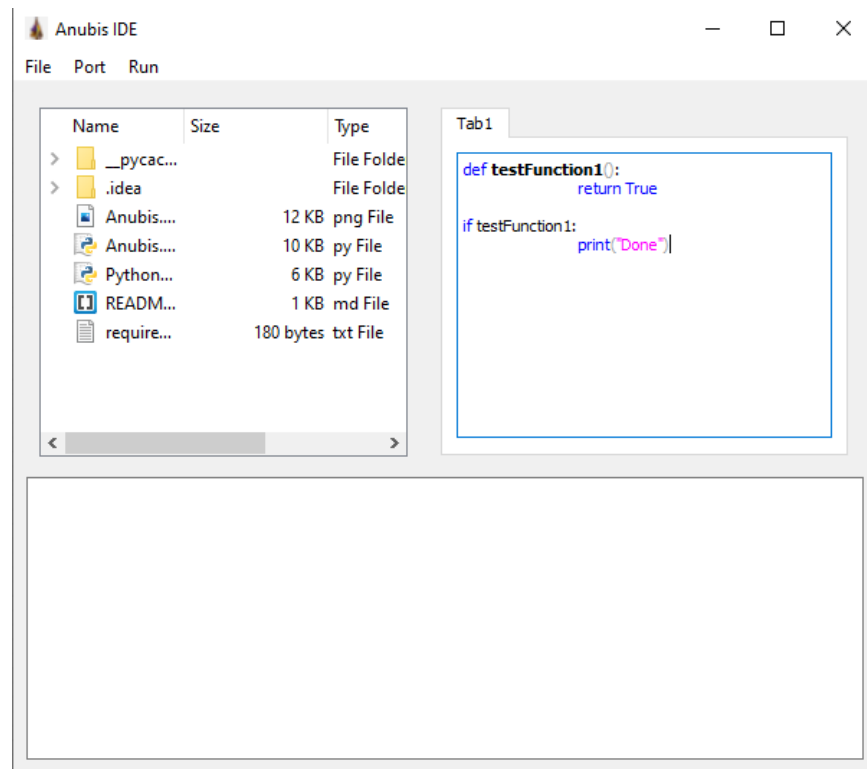
4. Opening HTML file



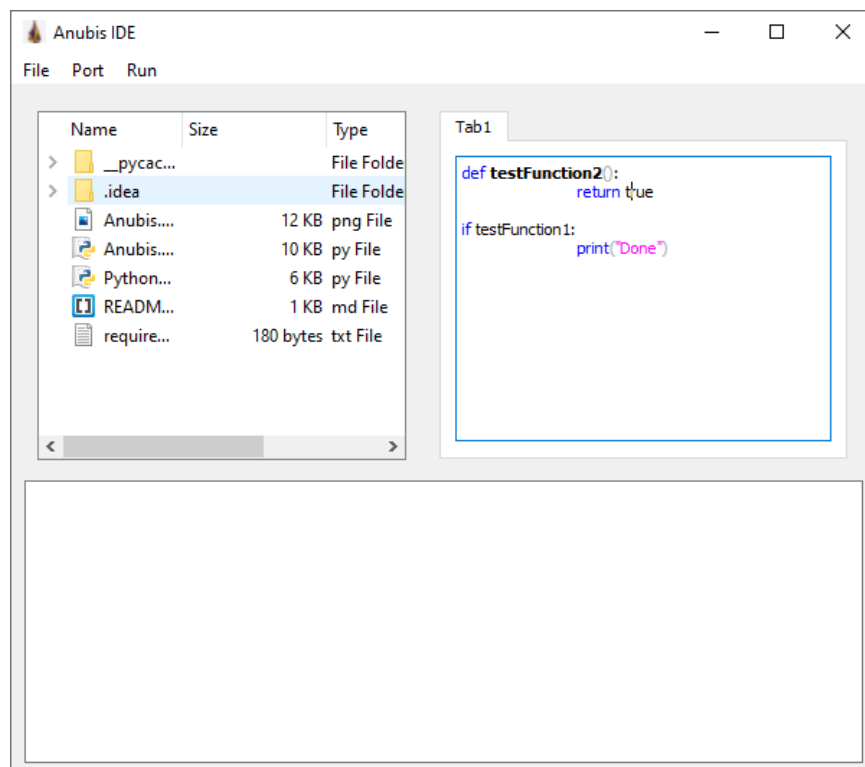
5. Writing a test function and clicked enter to enter the body, no tabs.



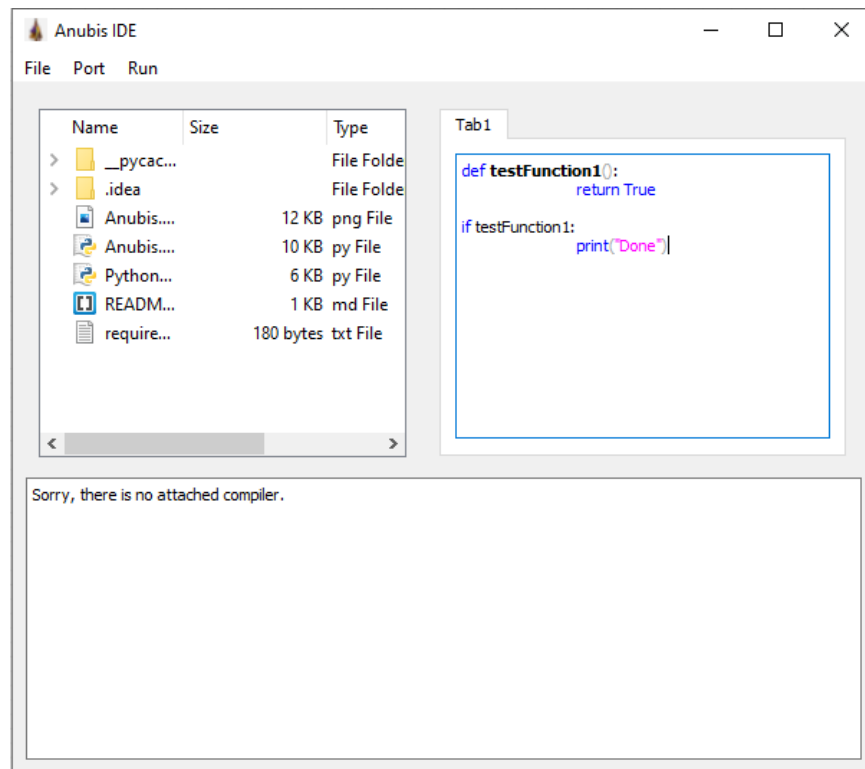
6. Writing a valid syntax without running it.



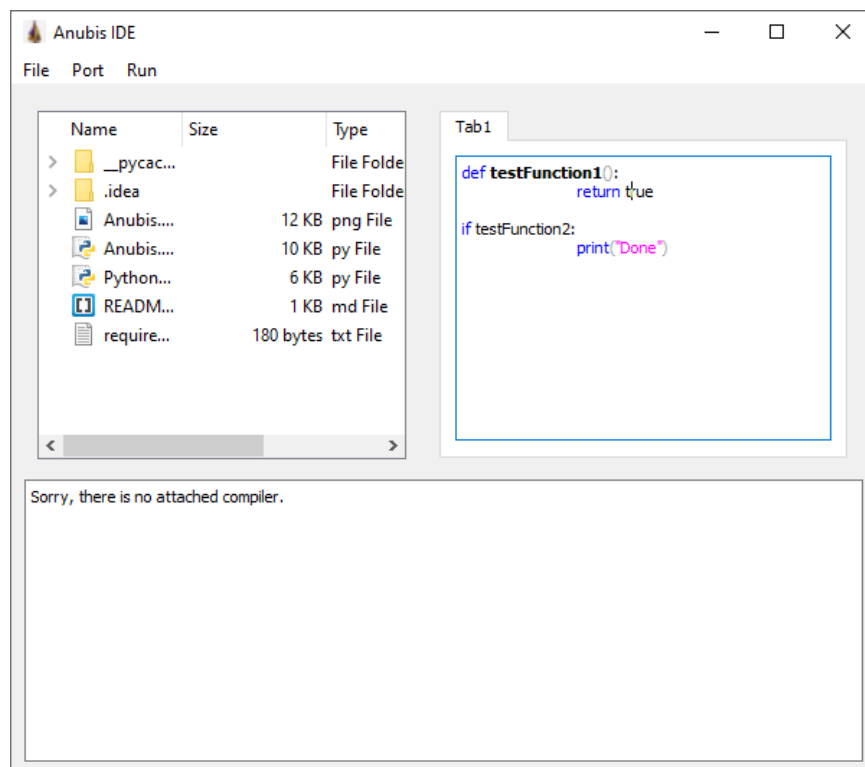
7. Writing a valid syntax and run.



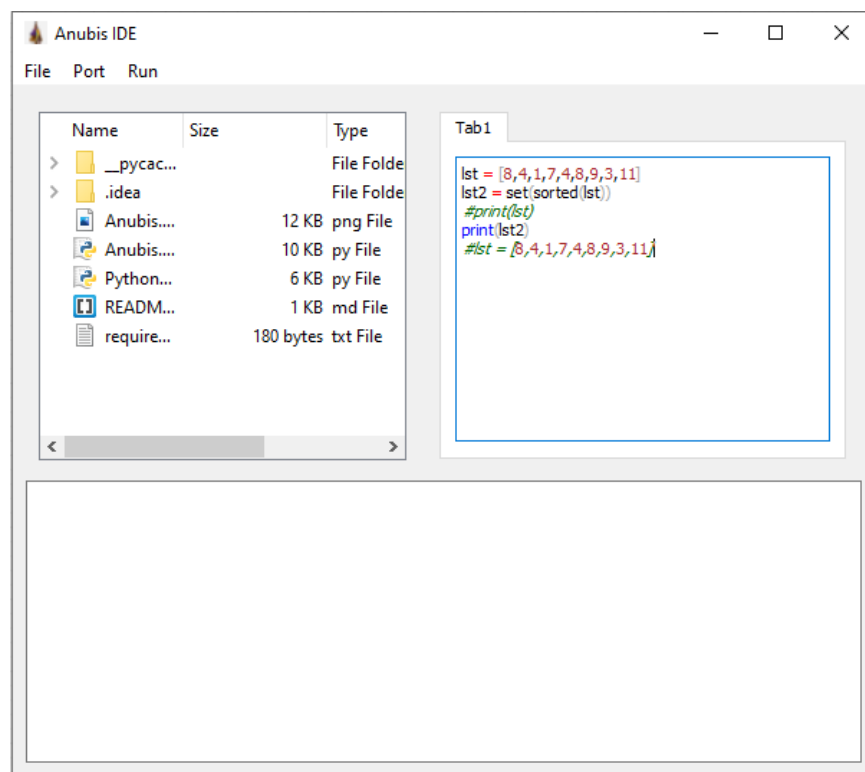
8. Writing an invalid syntax without running it.



9. Writing an invalid syntax and run.



10. Trying a code containing built in functions



3. ISSUES FOUND

Most of the issues are related to the software engineering principles. The found issues made the reverse engineering process very hard.

1. Variables names are not consistent, and it is not descriptive names and do not imply the type also the function names the developer used camel case in addition to the snake case, some function names starts with capital letters and some are lowered. Code is not readable or traceable.
2. The code is poorly documented, and it is not cleaned.
3. Inline comments did not help me to understand the overall code.
4. When I click enter after defining a function or after writing an if condition tabs are not created for indentation which is important in any python compiler.
5. The program does not perform its main functionalities written in the requirements it only color the text but do not compile or run or even find syntax errors. No attached compiler.
6. Also, as case 10, the IDE did not color the built-in functions and the commented list color is not right.
7. The program opens any file type which is a problem because it is limited to edit only python, it opened HTML file while testing but it crashes when opening non text files ex. PNG images. In saving it saves a main.py file automatically without asking for name or location or extension.
8. The program needed to setup a virtual serial port driver to allow running however this step was not documented.

4. REACHED THE GOAL OR NOT

The Anubis IDE did not reach the goal needed from it. The Anubis IDE was developed to edit, compile, and run python codes. It appears that it only can edit “color” text and not efficient as well. Its functionality is poor it does not indent the text or identify the syntax errors which is a basic functionality in any editor.

Also, it does not provide the capability to save the file with the name, extension, location I want.

And whenever I want to open a file it is not restricted to the python files only, it may open any text file with any format, HTML, txt, CSS, XML, while these formats are not supported. Finally, the layout of the IDE is not good.

5. METRICS

5.1 Using Radon

5.1.1 Cyclomatic Complexity

CC score	Rank	Risk
1 - 5	A	low - simple block
6 - 10	B	low - well structured and stable block
11 - 20	C	moderate - slightly complex block
21 - 30	D	more than moderate - more complex block
31 - 40	E	high - complex block, alarming
41+	F	very high - error-prone, unstable block

Block type	Letter
Function	F
Method	M
Class	C

Anubis.py

```
C:\Users\Aid-i\Desktop\asu\9th summer semester\SW maintenance and evolution\Anubis-IDE-master>radon cc Anubis.py -s
Anubis.py
F 18:0 serial_ports - B (8)
C 55:0 Signal - A (2)
C 85:0 text_widget - A (2)
C 116:0 Widget - A (2)
M 199:4 Widget.on_clicked - A (2)
C 240:0 UI - A (2)
M 245:4 UI.intUI - A (2)
M 316:4 UI.Run - A (2)
M 345:4 UI.open - A (2)
F 219:0 reading - A (1)
F 226:0 Openning - A (1)
M 61:4 Signal.__init__ - A (1)
M 86:4 text_widget.__init__ - A (1)
M 89:4 text_widget.itUI - A (1)
M 118:4 Widget.__init__ - A (1)
M 122:4 Widget.initUI - A (1)
M 187:4 Widget.Saving - A (1)
M 194:4 Widget.Open - A (1)
M 241:4 UI.__init__ - A (1)
M 331:4 UI.PortClicked - A (1)
M 340:4 UI.save - A (1)
```

Python_Coloring.py

```
C:\Users\Aid-i\Desktop\asu\9th summer semester\SW maintenance and evolution\Anubis-IDE-master>radon cc Python_Coloring.py -s
Python_Coloring.py
C 51:0 PythonHighlighter - B (6)
M 84:4 PythonHighlighter.__init__ - A (5)
M 152:4 PythonHighlighter.match_multiline - A (5)
F 6:0 format - A (4)
M 131:4 PythonHighlighter.highlightBlock - A (4)
```

5.1.2 Maintainability Index

MI score	Rank	Maintainability
100 - 20	A	Very high
19 - 10	B	Medium
9 - 0	C	Extremely low

Anubis.py

```
C:\Users\Aid-i\Desktop\asu\9th summer semester\SW maintenance and evolution\Anubis-IDE-master>radon mi Anubis.py -s
Anubis.py - A (62.35)
```

Python_Coloring.py

```
C:\Users\Aid-i\Desktop\asu\9th summer semester\SW maintenance and evolution\Anubis-IDE-master>radon mi python_Coloring.py -s
python_Coloring.py - A (67.06)
```

5.1.3 Raw Metrics

The **raw** command

This command analyzes the given Python modules in order to compute raw metrics. These include:

- **LOC**: the total number of lines of code
- **LLOC**: the number of logical lines of code
- **SLOC**: the number of source lines of code - not necessarily corresponding to the **LLOC** [\[Wikipedia\]](#)
- **comments**: the number of Python comment lines (i.e. only single-line comments #)
- **multi**: the number of lines representing multi-line strings
- **blank**: the number of blank lines (or whitespace-only ones)

The equation $sloc + multi + singlecomments + blank = loc$ should always hold.

Anubis.py

```
C:\Users\Aid-i\Desktop\asu\9th summer semester\SW maintenance and evolution\Anubis-IDE-master>radon raw Anubis.py
Anubis.py
LOC: 365
LLOC: 175
SLOC: 174
Comments: 108
Single comments: 108
Multi: 6
Blank: 77
- Comment Stats
  (C % L): 30%
  (C % S): 62%
  (C + M % L): 31%
```

Python_Coloring.py

```
C:\Users\Aid-i\Desktop\asu\9th summer semester\SW maintenance and evolution\Anubis-IDE-master>radon raw python_Coloring.py
python_Coloring.py
LOC: 190
LLOC: 71
SLOC: 125
Comments: 34
Single comments: 23
Multi: 13
Blank: 29
- Comment Stats
  (C % L): 18%
  (C % S): 27%
  (C + M % L): 25%
```

5.1.4 Halstead Metrics

Halstead Metrics

Halstead's goal was to identify measurable properties of software, and the relations between them. These numbers are statically computed from the source code:

- η_1 = the number of distinct operators
- η_2 = the number of distinct operands
- N_1 = the total number of operators
- N_2 = the total number of operands

From these numbers several measures can be calculated:

- Program vocabulary: $\eta = \eta_1 + \eta_2$
- Program length: $N = N_1 + N_2$
- Calculated program length: $\hat{N} = \eta_1 \log_2 \eta_1 + \eta_2 \log_2 \eta_2$
- Volume: $V = N \log_2 \eta$
- Difficulty: $D = \frac{\eta_1}{2} \cdot \frac{N_2}{\eta_2}$
- Effort: $E = D \cdot V$
- Time required to program: $T = \frac{E}{18}$ seconds
- Number of delivered bugs: $B = \frac{V}{3000}$

Anubis.py

```
C:\Users\Aid-i\Desktop\asu\9th summer semester\SW maintenance and evolution\Anubis-IDE-master>radon hal Anubis.py
Anubis.py:
h1: 5
h2: 16
N1: 8
N2: 16
vocabulary: 21
length: 24
calculated_length: 75.60964047443682
volume: 105.41561814669026
difficulty: 2.5
effort: 263.53904536672565
time: 14.641058075929202
bugs: 0.03513853938223009
```

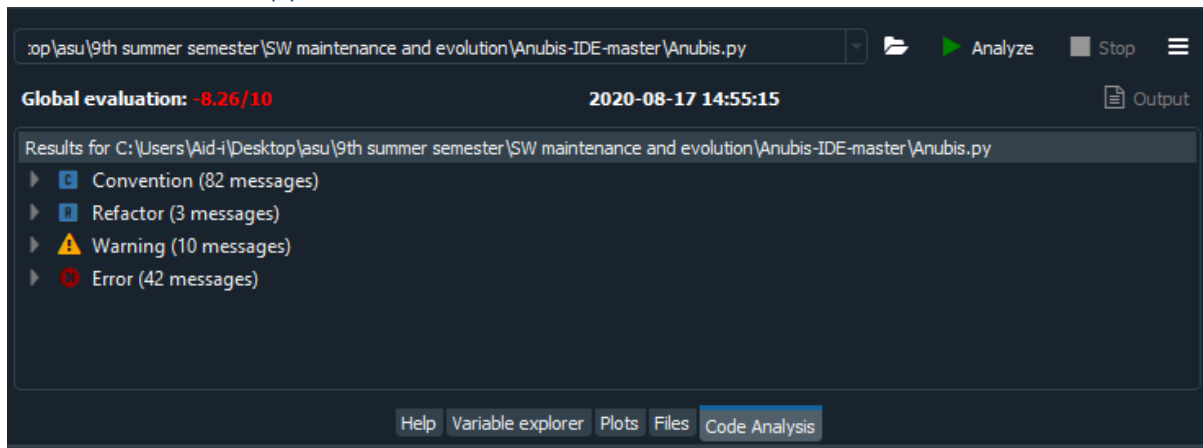
Python_Coloring.py

```
C:\Users\Aid-i\Desktop\asu\9th summer semester\SW maintenance and evolution\Anubis-IDE-master>radon hal Python_Coloring.py
Python_Coloring.py:
h1: 8
h2: 33
N1: 24
N2: 47
vocabulary: 41
length: 71
calculated_length: 190.46500593882897
volume: 380.386192327884
difficulty: 5.696969696969697
effort: 2167.048610837642
time: 120.39158949098012
bugs: 0.126795397442628
```

5.2 Using Pylint

Using Pylint, Static code analysis for the 2 python files

5.2.1 Anubis.py



***** Module Anubis

```
C0301:line-too-long: 2,0: Line too long (135/100)
C0301:line-too-long: 3,0: Line too long (190/100)
C0301:line-too-long: 69,0: Line too long (103/100)
C0301:line-too-long:135,0: Line too long (133/100)
C0301:line-too-long:140,0: Line too long (107/100)
C0301:line-too-long:157,0: Line too long (134/100)
C0301:line-too-long:169,0: Line too long (131/100)
C0326:bad-whitespace:204,26: Exactly one space required after comma
f = open(nn[0], 'r')

^
C0301:line-too-long:216,0: Line too long (134/100)
C0301:line-too-long:217,0: Line too long (118/100)
C0301:line-too-long:266,0: Line too long (142/100)
C0303:trailing-whitespace:307,0: Trailing whitespace
C0326:bad-whitespace:345,52: Exactly one space required after comma
file_name = QFileDialog.getOpenFileName(self, 'Open File', '/home')

^
C0326:bad-whitespace:345,64: Exactly one space required after comma
file_name = QFileDialog.getOpenFileName(self, 'Open File', '/home')

^
C0326:bad-whitespace:348,33: Exactly one space required after comma
f = open(file_name[0], 'r')

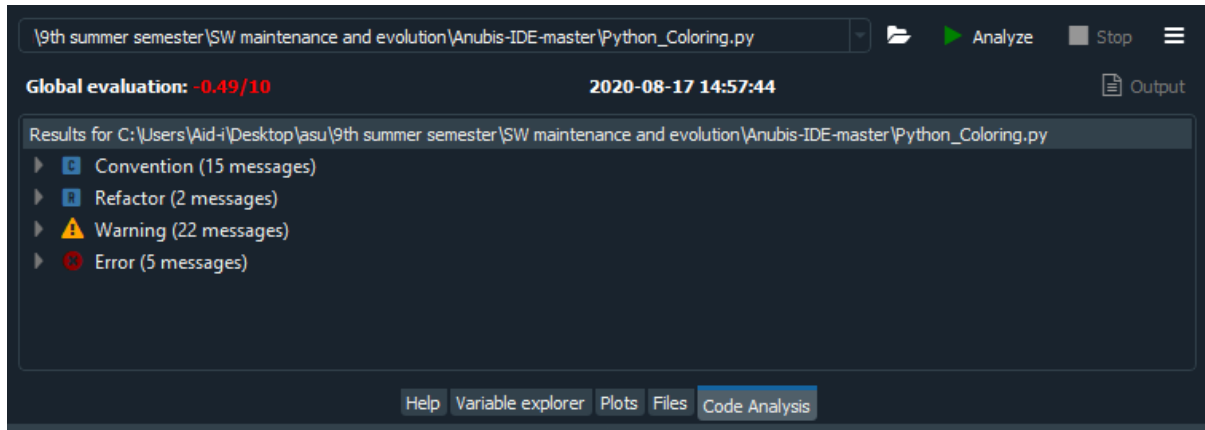
^
C0103:invalid-name: 1,0: Module name "Anubis" doesn't conform to snake_case naming style
C0114:missing-module-docstring: 1,0: Missing module docstring
W0401:wildcard-import: 13,0: Wildcard import PyQt5.QtWidgets
W0401:wildcard-import: 14,0: Wildcard import PyQt5.QtCore
C0103:invalid-name: 37,12: Variable name "s" doesn't conform to snake_case naming style
C0115:missing-class-docstring: 54,0: Missing class docstring
E0602:undefined-variable: 54,13: Undefined variable 'QObject'
E0602:undefined-variable: 57,14: Undefined variable 'pyqtSignal'
E0602:undefined-variable: 61,8: Undefined variable 'QObject'
R0903:too-few-public-methods: 54,0: Too few public methods (0/2)
E0602:undefined-variable: 70,7: Undefined variable 'QTextEdit'
E0602:undefined-variable: 71,8: Undefined variable 'QTextEdit'
C0103:invalid-name: 84,0: Class name "text_widget" doesn't conform to PascalCase naming style
C0115:missing-class-docstring: 84,0: Missing class docstring
```

E0602:undefined-variable: 84,18: Undefined variable 'QWidget'
 C0103:invalid-name: 88,4: Method name "itUI" doesn't conform to snake_case naming style
 C0116:missing-function-docstring: 88,4: Missing function or method docstring
 C0103:invalid-name: 89,8: Constant name "text" doesn't conform to UPPER_CASE naming style
 W0603:global-statement: 89,8: Using the global statement
 E0602:undefined-variable: 90,15: Undefined variable 'QTextEdit'
 E0602:undefined-variable: 92,15: Undefined variable 'QHBoxLayout'
 R0903:too-few-public-methods: 84,0: Too few public methods (1/2)
 C0103:invalid-name:141,8: Attribute name "dirModel" doesn't conform to snake_case naming style
 C0115:missing-class-docstring:115,0: Missing class docstring
 E0602:undefined-variable:115,13: Undefined variable 'QWidget'
 C0103:invalid-name:121,4: Method name "initUI" doesn't conform to snake_case naming style
 C0116:missing-function-docstring:121,4: Missing function or method docstring
 E0602:undefined-variable:124,14: Undefined variable 'QTabWidget'
 C0103:invalid-name:125,8: Variable name "tx" doesn't conform to snake_case naming style
 C0103:invalid-name:129,8: Constant name "text2" doesn't conform to UPPER_CASE naming style
 W0603:global-statement:129,8: Using the global statement
 E0602:undefined-variable:130,16: Undefined variable 'QTextEdit'
 E0602:undefined-variable:133,24: Undefined variable 'QTreeView'
 E0602:undefined-variable:138,15: Undefined variable 'QDir'
 E0602:undefined-variable:141,24: Undefined variable 'QFileSystemModel'
 E0602:undefined-variable:142,34: Undefined variable 'QDir'
 E0602:undefined-variable:147,32: Undefined variable 'QDir'
 E0602:undefined-variable:147,54: Undefined variable 'QDir'
 E0602:undefined-variable:147,69: Undefined variable 'QDir'
 E0602:undefined-variable:152,15: Undefined variable 'QVBoxLayout'
 C0103:invalid-name:153,8: Variable name "Left_hbox" doesn't conform to snake_case naming style
 E0602:undefined-variable:153,20: Undefined variable 'QHBoxLayout'
 C0103:invalid-name:154,8: Variable name "Right_hbox" doesn't conform to snake_case naming style
 E0602:undefined-variable:154,21: Undefined variable 'QHBoxLayout'
 C0103:invalid-name:163,8: Variable name "Left_hbox_Layout" doesn't conform to snake_case naming style
 E0602:undefined-variable:163,27: Undefined variable 'QWidget'
 C0103:invalid-name:166,8: Variable name "Right_hbox_Layout" doesn't conform to snake_case naming style
 E0602:undefined-variable:166,28: Undefined variable 'QWidget'
 C0103:invalid-name:170,8: Variable name "H_splitter" doesn't conform to snake_case naming style
 E0602:undefined-variable:170,21: Undefined variable 'QSplitter'
 E0602:undefined-variable:170,31: Undefined variable 'Qt'
 C0103:invalid-name:176,8: Variable name "V_splitter" doesn't conform to snake_case naming style
 E0602:undefined-variable:176,21: Undefined variable 'QSplitter'
 E0602:undefined-variable:176,31: Undefined variable 'Qt'
 C0103:invalid-name:180,8: Variable name "Final_Layout" doesn't conform to snake_case naming style
 E0602:undefined-variable:180,23: Undefined variable 'QHBoxLayout'
 W0612:unused-variable:152,8: Unused variable 'vbox'
 C0103:invalid-name:187,4: Method name "Saving" doesn't conform to snake_case naming style
 C0103:invalid-name:187,4: Argument name "s" doesn't conform to snake_case naming style
 C0116:missing-function-docstring:187,4: Missing function or method docstring
 E0213:no-self-argument:187,4: Method should have "self" as first argument
 E0602:undefined-variable:186,5: Undefined variable 'pyqtSlot'
 C0103:invalid-name:188,37: Variable name "f" doesn't conform to snake_case naming style
 C0103:invalid-name:189,12: Variable name "TEXT" doesn't conform to snake_case naming style
 R0201:no-self-use:187,4: Method could be a function
 C0103:invalid-name:194,4: Method name "Open" doesn't conform to snake_case naming style
 C0103:invalid-name:194,4: Argument name "s" doesn't conform to snake_case naming style
 C0116:missing-function-docstring:194,4: Missing function or method docstring
 E0213:no-self-argument:194,4: Method should have "self" as first argument
 E0602:undefined-variable:193,5: Undefined variable 'pyqtSlot'
 C0103:invalid-name:195,8: Constant name "text" doesn't conform to UPPER_CASE naming style
 W0603:global-statement:195,8: Using the global statement
 C0116:missing-function-docstring:198,4: Missing function or method docstring
 C0103:invalid-name:200,8: Variable name "nn" doesn't conform to snake_case naming style
 C0103:invalid-name:201,8: Variable name "nn" doesn't conform to snake_case naming style

C0103:invalid-name:204,12: Variable name "f" doesn't conform to snake_case naming style
 C0103:invalid-name:219,0: Argument name "s" doesn't conform to snake_case naming style
 C0116:missing-function-docstring:219,0: Missing function or method docstring
 E0602:undefined-variable:218,1: Undefined variable 'pyqtSlot'
 C0103:invalid-name:220,4: Variable name "b" doesn't conform to snake_case naming style
 C0103:invalid-name:226,0: Function name "Openning" doesn't conform to snake_case naming style
 C0103:invalid-name:226,0: Argument name "s" doesn't conform to snake_case naming style
 C0116:missing-function-docstring:226,0: Missing function or method docstring
 E0602:undefined-variable:225,1: Undefined variable 'pyqtSlot'
 C0103:invalid-name:227,4: Variable name "b" doesn't conform to snake_case naming style
 C0103:invalid-name:246,8: Attribute name "b" doesn't conform to snake_case naming style
 C0103:invalid-name:248,8: Attribute name "Open_Signal" doesn't conform to snake_case naming style
 C0103:invalid-name:333,8: Attribute name "portNo" doesn't conform to snake_case naming style
 C0115:missing-class-docstring:239,0: Missing class docstring
 E0602:undefined-variable:239,9: Undefined variable 'QMainWindow'
 C0103:invalid-name:244,4: Method name "intUI" doesn't conform to snake_case naming style
 C0116:missing-function-docstring:244,4: Missing function or method docstring
 C0103:invalid-name:261,8: Variable name "Port" doesn't conform to snake_case naming style
 C0103:invalid-name:267,8: Variable name "Port_Action" doesn't conform to snake_case naming style
 E0602:undefined-variable:267,22: Undefined variable 'QMenu'
 C0200:consider-using-enumerate:271,8: Consider using enumerate instead of iterating with range and len
 C0103:invalid-name:272,12: Variable name "s" doesn't conform to snake_case naming style
 C0103:invalid-name:282,8: Variable name "RunAction" doesn't conform to snake_case naming style
 E0602:undefined-variable:282,20: Undefined variable 'QAction'
 C0103:invalid-name:287,8: Variable name "Save_Action" doesn't conform to snake_case naming style
 E0602:undefined-variable:287,22: Undefined variable 'QAction'
 C0103:invalid-name:290,8: Variable name "Close_Action" doesn't conform to snake_case naming style
 E0602:undefined-variable:290,23: Undefined variable 'QAction'
 C0103:invalid-name:293,8: Variable name "Open_Action" doesn't conform to snake_case naming style
 E0602:undefined-variable:293,22: Undefined variable 'QAction'
 I1101:c-extension-no-member:306,27: Module 'PyQt5.QtGui' has no 'QIcon' member, but source is unavailable. Consider adding this module to extension-pkg-whitelist if you want to perform analysis based on run-time introspection of living objects.
 C0116:missing-function-docstring:315,4: Missing function or method docstring
 W0612:unused-variable:317,12: Unused variable 'mytext'
 C0103:invalid-name:331,4: Method name "PortClicked" doesn't conform to snake_case naming style
 C0116:missing-function-docstring:331,4: Missing function or method docstring
 I1101:c-extension-no-member:330,5: Module 'PyQt5.QtCore' has no 'pyqtSlot' member, but source is unavailable. Consider adding this module to extension-pkg-whitelist if you want to perform analysis based on run-time introspection of living objects.
 C0116:missing-function-docstring:339,4: Missing function or method docstring
 C0116:missing-function-docstring:344,4: Missing function or method docstring
 E0602:undefined-variable:345,20: Undefined variable 'QFileDialog'
 C0103:invalid-name:348,12: Variable name "f" doesn't conform to snake_case naming style
 W0201:attribute-defined-outside-init:334,8: Attribute 'port_flag' defined outside __init__
 W0201:attribute-defined-outside-init:333,8: Attribute 'portNo' defined outside __init__
 E0602:undefined-variable:361,10: Undefined variable 'QApplication'
 W0611:unused-import: 15,0: Unused Path imported from pathlib
 C0411:wrong-import-order: 11,0: third party import "from PyQt5 import QtCore" should be placed before "import Python_Coloring"
 C0411:wrong-import-order: 12,0: third party import "from PyQt5 import QtGui" should be placed before "import Python_Coloring"
 C0411:wrong-import-order: 13,0: third party import "from PyQt5.QtWidgets import *" should be placed before "import Python_Coloring"
 C0411:wrong-import-order: 14,0: third party import "from PyQt5.QtCore import *" should be placed before "import Python_Coloring"
 C0411:wrong-import-order: 15,0: standard import "from pathlib import Path" should be placed before "import serial"

Your code has been rated at -8.26/10 (previous run: -8.26/10, +0.00)

5.2.2 Python_Coloring.py



***** Module Python_Coloring

C0330:bad-continuation: 40,0: Wrong hanging indentation (remove 3 spaces).
'keyword': format('blue'),

| ^
C0330:bad-continuation: 41,0: Wrong hanging indentation (remove 2 spaces).
'operator': format('red'),

| ^
C0330:bad-continuation: 42,0: Wrong hanging indentation (remove 3 spaces).
'brace': format('darkGray'),

| ^
C0330:bad-continuation: 43,0: Wrong hanging indentation (remove 3 spaces).
'defclass': format('black', 'bold'),

| ^
C0330:bad-continuation: 44,0: Wrong hanging indentation (remove 3 spaces).
'string': format('magenta'),

| ^
C0330:bad-continuation: 45,0: Wrong hanging indentation (remove 3 spaces).
'string2': format('darkMagenta'),

| ^
C0330:bad-continuation: 46,0: Wrong hanging indentation (remove 3 spaces).
'comment': format('darkGreen', 'italic'),

| ^
C0330:bad-continuation: 47,0: Wrong hanging indentation (remove 3 spaces).
'self': format('black', 'italic'),

| ^
C0330:bad-continuation: 48,0: Wrong hanging indentation (remove 3 spaces).
'numbers': format('brown'),

| ^
C0330:bad-continuation: 49,0: Wrong hanging indentation.
}

| ^|
C0304:missing-final-newline:190,0: Final newline missing

W0511:fixme: 88,2: FIXME: The triple-quotes in these two lines will mess up the
 W1401:anomalous-backslash-in-string: 72,0: Anomalous backslash in string: '\+'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 72,0: Anomalous backslash in string: '*'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 72,0: Anomalous backslash in string: '\%'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 72,0: Anomalous backslash in string: '*'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 72,2: Anomalous backslash in string: '*'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 74,0: Anomalous backslash in string: '\+'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 74,0: Anomalous backslash in string: '*'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 74,0: Anomalous backslash in string: '\%'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 76,0: Anomalous backslash in string: '\^'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 76,0: Anomalous backslash in string: '\|. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 76,0: Anomalous backslash in string: '\&'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 76,0: Anomalous backslash in string: '\~'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 81,0: Anomalous backslash in string: '\{'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 81,0: Anomalous backslash in string: '\}'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 81,0: Anomalous backslash in string: '\('. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 81,0: Anomalous backslash in string: '\)'. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 81,0: Anomalous backslash in string: '\['. String
 constant might be missing an r prefix.
 W1401:anomalous-backslash-in-string: 81,0: Anomalous backslash in string: '\]'. String
 constant might be missing an r prefix.
 C0103:invalid-name: 1,0: Module name "Python_Coloring" doesn't conform to snake_case
 naming style
 C0114:missing-module-docstring: 1,0: Missing module docstring
 W0622:redefined-builtin: 6,0: Redefining built-in 'format'
 E0611:no-name-in-module: 2,0: No name 'QRegExp' in module 'PyQt5.QtCore'
 E0611:no-name-in-module: 3,0: No name 'QColor' in module 'PyQt5.QtGui'
 E0611:no-name-in-module: 3,0: No name 'QTextCharFormat' in module 'PyQt5.QtGui'
 E0611:no-name-in-module: 3,0: No name 'QFont' in module 'PyQt5.QtGui'
 E0611:no-name-in-module: 3,0: No name 'QSyntaxHighlighter' in module 'PyQt5.QtGui'
 C0123:unidiomatic-typecheck: 11,7: Using type() instead of isinstance() for a typecheck.
 C0103:invalid-name:131,4: Method name "highlightBlock" doesn't conform to snake_case
 naming style
 W0621:redefined-outer-name:135,29: Redefining name 'format' from outer scope (line 6)
 R1703:simplifiable-if-statement:187,8: The if statement can be replaced with 'return
 bool(test)'
 R1705:no-else-return:187,8: Unnecessary "else" after "return"
 W0611:unused-import: 1,0: Unused import sys

 Your code has been rated at -0.49/10 (previous run: -0.49/10, +0.00)