МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ «ЛЬВІВСЬКА ПОЛІТЕХНІКА»

ІНСТИТУТ КОМП’ЮТЕРНИХ НАУК ТА ІНФОРМАЦІЙНИХ ТЕХНОЛОГІЙ



Лабораторна робота №9

з дисципліни “Спеціалізовані мови програмування”

на тему

“Створення та рефакторінг програмно-інформаційного

продукту засобами Python”

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Андрій КОЗУБЕНКО

Прийняв:

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Сергій ЩЕРБАК

Львів-2023

**Мета роботи:** розробка програмно-інформаційного продукту засобами Python

**План роботи**

Завдання 1. Створити скрипт запуску лабораторних робіт 1-8 (Runner) з єдиним меню для управління додатками використовуючи патерн FACADE <https://refactoring.guru/uk/design-patterns/facade>

Завдання 2. Зробити рефакторінг додатків, які були зроблені в лб 1-8, для підтримки можливості запуску через Runner

Завдання 3. Зробити рефакторинг додатків, які були зроблені в лб 1-8, використовуючи багаторівневу архітектуру додатків (див. приклад нижче) та принципи об’єктно-орієнтованого підходу

Завдання 4. Створити бібліотеку класів, які повторно використовуються у всіх лабораторних роботах та зробити рефакторінг додатків для підтримки цієї бібліотеки. Таких класів в бібліотеці має буде як найменш 5

Завдання 5. Додати логування функцій в класи бібліотеки програмного продукту використовуючи <https://docs.python.org/uk/3/howto/logging.html>

Завдання 6. Додати коментарі до програмного коду та сформувати документацію програмного продукту засобами pydoc. Документація має бути представлена у вигляді сторінок тексту на консолі, подана у веб-браузері та збережена у файлах HTML

Завдання 7. Документація та код програмного продукту має бути розміщено в GIT repo

Завдання 8. Проведіть статичний аналіз коду продукту засобами PYLINT <https://pylint.readthedocs.io/en/stable/> та виправте помилки, які були ідентифіковані. Первинний репорт з помилками додайте до звіту лабораторної роботи

Завдання 9. Підготуйте звіт до лабораторной роботи

**Виконання роботи**

**Посилання на GitHub:** <https://github.com/Famezzs/uni-spec-lang-labs.git>

**Первинний звіт із помилками:**

|  |
| --- |
| \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab3.module.ArtGeneratorExternalLibrary  data\lab3\module\ArtGeneratorExternalLibrary.py:1:0: C0103: Module name "ArtGeneratorExternalLibrary" doesn't conform to snake\_case naming style (invalid-name)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab4.module.ArtGeneratorOwnImplementation  data\lab4\module\ArtGeneratorOwnImplementation.py:1:0: C0103: Module name "ArtGeneratorOwnImplementation" doesn't conform to snake\_case naming style (invalid-name)  data\lab4\module\ArtGeneratorOwnImplementation.py:62:11: C0121: Comparison 'InputScanner.input\_empty(character) == False' should be 'InputScanner.input\_empty(character) is False' if checking for the singleton value False, or 'not InputScanner.input\_empty(character)' if testing for falsiness (singleton-comparison)  data\lab4\module\ArtGeneratorOwnImplementation.py:5:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab4.module.dedicated\_configuration.ArtGeneratorConfiguration  data\lab4\module\dedicated\_configuration\ArtGeneratorConfiguration.py:45:0: C0304: Final newline missing (missing-final-newline)  data\lab4\module\dedicated\_configuration\ArtGeneratorConfiguration.py:1:0: C0103: Module name "ArtGeneratorConfiguration" doesn't conform to snake\_case naming style (invalid-name)  data\lab4\module\dedicated\_configuration\ArtGeneratorConfiguration.py:2:0: R0903: Too few public methods (0/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab5.module.FigureGenerator  data\lab5\module\FigureGenerator.py:1:0: C0103: Module name "FigureGenerator" doesn't conform to snake\_case naming style (invalid-name)  data\lab5\module\FigureGenerator.py:4:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab6.calculator-tests  data\lab6\calculator-tests.py:1:0: C0103: Module name "calculator-tests" doesn't conform to snake\_case naming style (invalid-name)  data\lab6\calculator-tests.py:30:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:40:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:50:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:60:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:70:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:79:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:89:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:99:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:108:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:118:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:128:4: C0116: Missing function or method docstring (missing-function-docstring)  data\lab6\calculator-tests.py:137:4: C0116: Missing function or method docstring (missing-function-docstring)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab7.api-tests  data\lab7\api-tests.py:1:0: C0103: Module name "api-tests" doesn't conform to snake\_case naming style (invalid-name)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab7.module.APICaller  data\lab7\module\APICaller.py:1:0: C0103: Module name "APICaller" doesn't conform to snake\_case naming style (invalid-name)  data\lab7\module\APICaller.py:43:15: W3101: Missing timeout argument for method 'requests.get' can cause your program to hang indefinitely (missing-timeout)  data\lab7\module\APICaller.py:52:15: W3101: Missing timeout argument for method 'requests.get' can cause your program to hang indefinitely (missing-timeout)  data\lab7\module\APICaller.py:61:15: W3101: Missing timeout argument for method 'requests.get' can cause your program to hang indefinitely (missing-timeout)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab7.module.dedicated\_configuration.APIConfiguration  data\lab7\module\dedicated\_configuration\APIConfiguration.py:1:0: C0103: Module name "APIConfiguration" doesn't conform to snake\_case naming style (invalid-name)  data\lab7\module\dedicated\_configuration\APIConfiguration.py:1:0: R0903: Too few public methods (0/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab7.module.helpers.CommentDataFilter  data\lab7\module\helpers\CommentDataFilter.py:1:0: C0103: Module name "CommentDataFilter" doesn't conform to snake\_case naming style (invalid-name)  data\lab7\module\helpers\CommentDataFilter.py:26:28: R1734: Consider using [] instead of list() (use-list-literal)  data\lab7\module\helpers\CommentDataFilter.py:1:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab7.module.helpers.PostDataFilter  data\lab7\module\helpers\PostDataFilter.py:1:0: C0103: Module name "PostDataFilter" doesn't conform to snake\_case naming style (invalid-name)  data\lab7\module\helpers\PostDataFilter.py:29:25: R1734: Consider using [] instead of list() (use-list-literal)  data\lab7\module\helpers\PostDataFilter.py:1:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab7.module.helpers.SaveAsFile  data\lab7\module\helpers\SaveAsFile.py:1:0: C0103: Module name "SaveAsFile" doesn't conform to snake\_case naming style (invalid-name)  data\lab7\module\helpers\SaveAsFile.py:27:13: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)  data\lab7\module\helpers\SaveAsFile.py:1:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab7.module.helpers.UserDataFilter  data\lab7\module\helpers\UserDataFilter.py:1:0: C0103: Module name "UserDataFilter" doesn't conform to snake\_case naming style (invalid-name)  data\lab7\module\helpers\UserDataFilter.py:25:25: R1734: Consider using [] instead of list() (use-list-literal)  data\lab7\module\helpers\UserDataFilter.py:1:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab8.module.DataAnalyser  data\lab8\module\DataAnalyser.py:17:0: C0301: Line too long (158/150) (line-too-long)  data\lab8\module\DataAnalyser.py:67:0: C0303: Trailing whitespace (trailing-whitespace)  data\lab8\module\DataAnalyser.py:107:0: C0303: Trailing whitespace (trailing-whitespace)  data\lab8\module\DataAnalyser.py:1:0: C0103: Module name "DataAnalyser" doesn't conform to snake\_case naming style (invalid-name)  data\lab8\module\DataAnalyser.py:36:8: R0402: Use 'from matplotlib import pyplot' instead (consider-using-from-import)  data\lab8\module\DataAnalyser.py:51:8: R0402: Use 'from matplotlib import pyplot' instead (consider-using-from-import)  data\lab8\module\DataAnalyser.py:76:8: R0402: Use 'from matplotlib import pyplot' instead (consider-using-from-import)  data\lab8\module\DataAnalyser.py:96:8: R0402: Use 'from matplotlib import pyplot' instead (consider-using-from-import)  data\lab8\module\DataAnalyser.py:116:8: R0402: Use 'from matplotlib import pyplot' instead (consider-using-from-import)  data\lab8\module\DataAnalyser.py:117:8: W0612: Unused variable 'figure' (unused-variable)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab8.module.dedicated\_configuration.AnalysisConfiguration  data\lab8\module\dedicated\_configuration\AnalysisConfiguration.py:1:0: C0103: Module name "AnalysisConfiguration" doesn't conform to snake\_case naming style (invalid-name)  data\lab8\module\dedicated\_configuration\AnalysisConfiguration.py:1:0: R0903: Too few public methods (0/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab8.module.helpers.CSVFileGenerator  data\lab8\module\helpers\CSVFileGenerator.py:1:0: C0103: Module name "CSVFileGenerator" doesn't conform to snake\_case naming style (invalid-name)  data\lab8\module\helpers\CSVFileGenerator.py:3:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module lab8.module.helpers.CSVFileReader  data\lab8\module\helpers\CSVFileReader.py:1:0: C0103: Module name "CSVFileReader" doesn't conform to snake\_case naming style (invalid-name)  data\lab8\module\helpers\CSVFileReader.py:3:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.abstract.ClearsConsole  data\shared\abstract\ClearsConsole.py:1:0: C0103: Module name "ClearsConsole" doesn't conform to snake\_case naming style (invalid-name)  data\shared\abstract\ClearsConsole.py:12:4: W0107: Unnecessary pass statement (unnecessary-pass)  data\shared\abstract\ClearsConsole.py:5:0: R0903: Too few public methods (0/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.classes.ArtPrinter  data\shared\classes\ArtPrinter.py:1:0: C0103: Module name "ArtPrinter" doesn't conform to snake\_case naming style (invalid-name)  data\shared\classes\ArtPrinter.py:46:12: W0707: Consider explicitly re-raising using 'except Exception as exc' and 'raise InvalidColor('Invalid color provided') from exc' (raise-missing-from)  data\shared\classes\ArtPrinter.py:3:0: C0411: third party import "from termcolor import colored" should be placed before "from data.shared.exception.InvalidColor import InvalidColor" (wrong-import-order)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.classes.ArtScaler  data\shared\classes\ArtScaler.py:1:0: C0103: Module name "ArtScaler" doesn't conform to snake\_case naming style (invalid-name)  data\shared\classes\ArtScaler.py:31:11: C0123: Use isinstance() rather than type() for a typecheck. (unidiomatic-typecheck)  data\shared\classes\ArtScaler.py:6:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.classes.Calculator  data\shared\classes\Calculator.py:1:0: C0103: Module name "Calculator" doesn't conform to snake\_case naming style (invalid-name)  data\shared\classes\Calculator.py:45:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:48:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:51:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:54:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:55:8: R1705: Unnecessary "else" after "return", remove the "else" and de-indent the code inside it (no-else-return)  data\shared\classes\Calculator.py:58:12: W0719: Raising too general exception: Exception (broad-exception-raised)  data\shared\classes\Calculator.py:60:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:63:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:66:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:69:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:69:4: W0102: Dangerous default value set() as argument (dangerous-default-value)  data\shared\classes\Calculator.py:71:8: R1705: Unnecessary "else" after "return", remove the "else" and de-indent the code inside it (no-else-return)  data\shared\classes\Calculator.py:77:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:91:20: W0622: Redefining built-in 'id' (redefined-builtin)  data\shared\classes\Calculator.py:80:14: C0121: Comparison 'operand\_retrieved == False' should be 'operand\_retrieved is False' if checking for the singleton value False, or 'not operand\_retrieved' if testing for falsiness (singleton-comparison)  data\shared\classes\Calculator.py:87:20: W0702: No exception type(s) specified (bare-except)  data\shared\classes\Calculator.py:98:20: R1724: Unnecessary "else" after "continue", remove the "else" and de-indent the code inside it (no-else-continue)  data\shared\classes\Calculator.py:98:23: C0121: Comparison 'desired\_log == None' should be 'desired\_log is None' (singleton-comparison)  data\shared\classes\Calculator.py:77:4: R1710: Either all return statements in a function should return an expression, or none of them should. (inconsistent-return-statements)  data\shared\classes\Calculator.py:108:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:115:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:118:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:124:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:125:11: C0121: Comparison 'os.path.isfile(logs\_path) == False' should be 'os.path.isfile(logs\_path) is False' if checking for the singleton value False, or 'not os.path.isfile(logs\_path)' if testing for falsiness (singleton-comparison)  data\shared\classes\Calculator.py:126:24: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)  data\shared\classes\Calculator.py:126:24: R1732: Consider using 'with' for resource-allocating operations (consider-using-with)  data\shared\classes\Calculator.py:130:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:131:20: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)  data\shared\classes\Calculator.py:134:8: R1705: Unnecessary "else" after "return", remove the "else" and de-indent the code inside it (no-else-return)  data\shared\classes\Calculator.py:131:20: R1732: Consider using 'with' for resource-allocating operations (consider-using-with)  data\shared\classes\Calculator.py:139:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:142:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:143:20: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)  data\shared\classes\Calculator.py:143:20: R1732: Consider using 'with' for resource-allocating operations (consider-using-with)  data\shared\classes\Calculator.py:167:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:169:14: C0121: Comparison 'continue\_calculation == True' should be 'continue\_calculation is True' if checking for the singleton value True, or 'continue\_calculation' if testing for truthiness (singleton-comparison)  data\shared\classes\Calculator.py:177:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:184:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\classes\Calculator.py:186:11: C0121: Comparison 'os.path.isdir(path) == True' should be 'os.path.isdir(path) is True' if checking for the singleton value True, or 'os.path.isdir(path)' if testing for truthiness (singleton-comparison)  data\shared\classes\Calculator.py:190:11: C0121: Comparison 'os.path.isfile(path) == True' should be 'os.path.isfile(path) is True' if checking for the singleton value True, or 'os.path.isfile(path)' if testing for truthiness (singleton-comparison)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.classes.InputScanner  data\shared\classes\InputScanner.py:1:0: C0103: Module name "InputScanner" doesn't conform to snake\_case naming style (invalid-name)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.classes.Logger  data\shared\classes\Logger.py:1:0: C0103: Module name "Logger" doesn't conform to snake\_case naming style (invalid-name)  data\shared\classes\Logger.py:38:8: W1203: Use lazy % formatting in logging functions (logging-fstring-interpolation)  data\shared\classes\Logger.py:6:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.classes.Menu  data\shared\classes\Menu.py:1:0: C0103: Module name "Menu" doesn't conform to snake\_case naming style (invalid-name)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.classes.OutputPrinter  data\shared\classes\OutputPrinter.py:1:0: C0103: Module name "OutputPrinter" doesn't conform to snake\_case naming style (invalid-name)  data\shared\classes\OutputPrinter.py:4:0: C0411: third party import "from termcolor import colored" should be placed before "from data.shared.abstract.ClearsConsole import ClearsConsole" (wrong-import-order)  data\shared\classes\OutputPrinter.py:5:0: C0411: third party import "from tabulate import tabulate" should be placed before "from data.shared.abstract.ClearsConsole import ClearsConsole" (wrong-import-order)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.classes.Program  data\shared\classes\Program.py:1:0: C0103: Module name "Program" doesn't conform to snake\_case naming style (invalid-name)  data\shared\classes\Program.py:31:19: W0718: Catching too general exception Exception (broad-exception-caught)  data\shared\classes\Program.py:7:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.configuration.Configuration  data\shared\configuration\Configuration.py:1:0: C0103: Module name "Configuration" doesn't conform to snake\_case naming style (invalid-name)  data\shared\configuration\Configuration.py:9:0: R0903: Too few public methods (0/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.configuration.ExceptionHandlerConfiguration  data\shared\configuration\ExceptionHandlerConfiguration.py:1:0: C0103: Module name "ExceptionHandlerConfiguration" doesn't conform to snake\_case naming style (invalid-name)  data\shared\configuration\ExceptionHandlerConfiguration.py:6:0: R0903: Too few public methods (0/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.configuration.MenuConfiguration  data\shared\configuration\MenuConfiguration.py:1:0: C0103: Module name "MenuConfiguration" doesn't conform to snake\_case naming style (invalid-name)  data\shared\configuration\MenuConfiguration.py:7:0: R0903: Too few public methods (0/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.configuration.MenuFunctions  data\shared\configuration\MenuFunctions.py:1:0: C0103: Module name "MenuFunctions" doesn't conform to snake\_case naming style (invalid-name)  data\shared\configuration\MenuFunctions.py:69:11: C0121: Comparison 'allow\_save\_to\_file == True' should be 'allow\_save\_to\_file is True' if checking for the singleton value True, or 'allow\_save\_to\_file' if testing for truthiness (singleton-comparison)  data\shared\configuration\MenuFunctions.py:108:11: C0121: Comparison 'allow\_save\_to\_file == True' should be 'allow\_save\_to\_file is True' if checking for the singleton value True, or 'allow\_save\_to\_file' if testing for truthiness (singleton-comparison)  data\shared\configuration\MenuFunctions.py:122:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:132:11: C0121: Comparison 'InputScanner.input\_empty(font) == True' should be 'InputScanner.input\_empty(font) is True' if checking for the singleton value True, or 'InputScanner.input\_empty(font)' if testing for truthiness (singleton-comparison)  data\shared\configuration\MenuFunctions.py:148:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:157:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:166:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:172:15: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)  data\shared\configuration\MenuFunctions.py:172:15: R1732: Consider using 'with' for resource-allocating operations (consider-using-with)  data\shared\configuration\MenuFunctions.py:177:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:187:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:213:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:241:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:245:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:251:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:255:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:262:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:268:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:274:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:301:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:313:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:325:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:337:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\configuration\MenuFunctions.py:339:8: R1722: Consider using 'sys.exit' instead (consider-using-sys-exit)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.exception.EmptyInput  data\shared\exception\EmptyInput.py:1:0: C0103: Module name "EmptyInput" doesn't conform to snake\_case naming style (invalid-name)  data\shared\exception\EmptyInput.py:12:4: W0107: Unnecessary pass statement (unnecessary-pass)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.exception.ExceptionHandler  data\shared\exception\ExceptionHandler.py:16:0: C0303: Trailing whitespace (trailing-whitespace)  data\shared\exception\ExceptionHandler.py:21:0: C0303: Trailing whitespace (trailing-whitespace)  data\shared\exception\ExceptionHandler.py:1:0: C0103: Module name "ExceptionHandler" doesn't conform to snake\_case naming style (invalid-name)  data\shared\exception\ExceptionHandler.py:22:4: C0116: Missing function or method docstring (missing-function-docstring)  data\shared\exception\ExceptionHandler.py:1:0: R0903: Too few public methods (1/2) (too-few-public-methods)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.exception.FractionScale  data\shared\exception\FractionScale.py:1:0: C0103: Module name "FractionScale" doesn't conform to snake\_case naming style (invalid-name)  data\shared\exception\FractionScale.py:10:4: W0107: Unnecessary pass statement (unnecessary-pass)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.exception.InvalidColor  data\shared\exception\InvalidColor.py:1:0: C0103: Module name "InvalidColor" doesn't conform to snake\_case naming style (invalid-name)  data\shared\exception\InvalidColor.py:9:4: W0107: Unnecessary pass statement (unnecessary-pass)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.exception.InvalidInput  data\shared\exception\InvalidInput.py:1:0: C0103: Module name "InvalidInput" doesn't conform to snake\_case naming style (invalid-name)  data\shared\exception\InvalidInput.py:9:4: W0107: Unnecessary pass statement (unnecessary-pass)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.exception.InvalidOption  data\shared\exception\InvalidOption.py:1:0: C0103: Module name "InvalidOption" doesn't conform to snake\_case naming style (invalid-name)  data\shared\exception\InvalidOption.py:9:4: W0107: Unnecessary pass statement (unnecessary-pass)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module shared.exception.NegativeScale  data\shared\exception\NegativeScale.py:1:0: C0103: Module name "NegativeScale" doesn't conform to snake\_case naming style (invalid-name)  data\shared\exception\NegativeScale.py:9:4: W0107: Unnecessary pass statement (unnecessary-pass)  \*\*\*\*\*\*\*\*\*\*\*\*\* Module main  main.py:4:0: C0116: Missing function or method docstring (missing-function-docstring)  ------------------------------------------------------------------  Your code has been rated at 8.02/10 |

**Висновок:** Виконавши ці завдання, я створив багатофункціональний програмно-інформаційний продукт засобами Python.