Exploring Python tools and features - Part II

Now carry out a comparison of this code with one in Python (Buffer Overflow in Python), following these instructions:

In your workspace, you will be using the file called Overflow.py. You are able to download the zip file '**buffer-overflow-in-python**' along with additional instructions in the PDF '**Exploring Python Tools and Features**'.

buffer=[None]*10

for i in range (0,11):

   buffer[i]=7

print(buffer)

- Run your code using: Python overflow.py (or use the codio rocket icon)

- What is the result?

- Read about Pylint at http://pylint.pycqa.org/en/latest/tutorial.html

- Install pylint using the following commands:

pip install pylint (in the command shell/ interpreter)

- Run pylint on one of your files and evaluate the output:
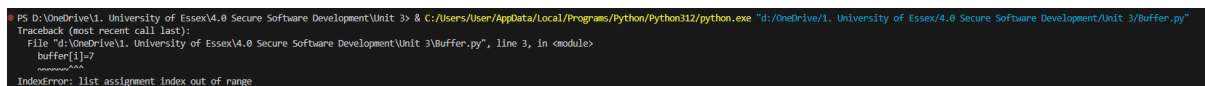
pylint your_file

- (Make sure you are in the directory where your file is located before running Pylint)

- What is the result? Does this tell you how to fix the error above?

Error Message

The following error message is received :

"d:\OneDrive\1. University of Essex\4.0 Secure Software Development\Unit 3\Buffer.py", line 3, in <module>

  buffer[i]=7


```
● PS D:\OneDrive\1. University of Essex\4.0 Secure Software Development\Unit 3> & C:/Users/User/AppData/Local/Programs/Python/Python312/python.exe "d:/OneDrive/1. University of Essex/4.0 Secure Software Development/Unit 3/Buffer.py"
Traceback (most recent call last):
  File "d:\OneDrive\1. University of Essex\4.0 Secure Software Development\Unit 3\Buffer.py", line 3, in <module>
    buffer[i]=7
    ~~~~~~^^^
IndexError: list assignment index out of range
```

This message occurs as the tuple is simulating a buffer with 10 characters. When the loop attempts to store 11 characters in the buffer, there is an overflow as there is not enough storage in the buffer variable.

When Pylint is run on this script, the output only refers to the structure of the code as shown below.

```
PS D:\OneDrive\1. University of Essex\4.0 Secure Software Development\Unit 3> pylint buffer.py
************* Module Buffer
buffer.py:4:0: C0304: Final newline missing (missing-final-newline)
buffer.py:1:0: C0114: Missing module docstring (missing-module-docstring)
buffer.py:1:0: C0103: Module name "Buffer" doesn't conform to snake_case naming style (invalid-name)
```

Pylint is a tool designed to examine the style and layout of the code, it does not run the code itself, so will not identify errors with the integrity of the coding.