



Codio Activity: Exploring Python tools and features

Course: MSc Computer Science

Module: Secure Software Development (Computer Science)

Assignment: ePortfolio

Date: Saturday 30th October 2021

Student ID: 126853

Part 1:

What happens?:

The Codio window outputs the following error message:

```
kieron
codio@violet-solar:~/workspace$ ./bufoverflow
Enter name: kieron89991
kieron89991
*** stack smashing detected ***: <unknown> terminated
Aborted (core dumped)
codio@violet-solar:~/workspace$
```

What does the output message mean?:

The Stack Smashing detected error message is output as a result of protective mechanisms implemented by the C compiler to prevent common errors, including Buffer Overflows.

Part 2:

What is the result?:

```
codio@orion-flood:~/workspace$ python Overflow.py
Traceback (most recent call last):
  File "Overflow.py", line 3, in <module>
    buffer[i]=7
IndexError: list assignment index out of range
codio@orion-flood:~/workspace$
```

As the index of 11 does not exist, Python throws an IndexError.

What is the Pylint result/how to fix?:

```
codio@orion-flood:~/workspace$ pylint Overflow.py
No config file found, using default configuration
***** Module Overflow
C: 1, 0: Exactly one space required around assignment
buffer=[None]*10
      ^ (bad-whitespace)
C: 2, 0: Exactly one space required after comma
for i in range(0,14):
      ^ (bad-whitespace)
C: 3, 0: Exactly one space required around assignment
buffer[i]=7
      ^ (bad-whitespace)
C: 4, 0: Trailing whitespace (trailing-whitespace)
C: 5, 0: Final newline missing (missing-final-newline)
C: 5, 0: Unnecessary parens after 'print' keyword (superfluous-parens)
W: 1, 0: Redefining built-in 'buffer' (redefined-builtin)
C: 1, 0: Module name "Overflow" doesn't conform to snake_case naming style (invalid-name)
C: 1, 0: Missing module docstring (missing-docstring)
C: 1, 0: Constant name "buffer" doesn't conform to UPPER_CASE naming style (invalid-name)

-----
Your code has been rated at -15.00/10

codio@orion-flood:~/workspace$
```

The above output is generated by running “pylint Overflow.py”.

This can be fixed by correcting the code as shown below:

```
buffer = [None]*10  
  
for i in range(0, 14):  
    buffer[i] = 7  
  
print(buffer)
```