

Thursday Oct 31, 2024

In-class Handout

COSC 101C Intro to Computing I

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Name:

Discuss and complete the following questions with the person nearest you. You **may** be asked to share your thoughts with the class.

1. Write a docstring with doctests for the following function:

```
def factorial(n: int) -> int:
    prod = 1
    for i in range(1, n+1):
        prod = prod*i
    return prod

import doctest
def factorial(n: int) -> int:
    """ Return n!

    Parameters:
        n (int): Number to calculate factorial for
    Returns:
        int: n factorial
    >>> factorial(3)
    6
    >>> factorial(5)
    120
    """
    prod = 1
    for i in range(1, n+1):
        prod = prod*i
    return prod

def main() -> None:
    doctest.testmod()
main()
```

2. What is the output of the following code snippet?

```
def swapZero(d, e):
    f = d
    d[0] = e[0]
    e[0] = f[0]

u = [1, 3, 5]
v = [2, 4, 6]
swapZero(u, v)
print("U", u, "V", v)
U [2, 3, 5] V [2, 4, 6]
```

3. What is the output of the following code snippet?

```
def swapZero(d, e):
    f = d[:]
    d[0] = e[0]
```

```
e[0] = f[0]

u = [1, 3, 5]
v = [2, 4, 6]
swapZero(u, v)
print("U", u, "V", v)
U [2, 3, 5] V [1, 4, 6]
```