CIS 210 Fall 2020
Lab Week 4

Focus this week:
- passing functions as arguments
- midterm review (Q/A)

(1) Lab 4 Preparation - Midterm Review

Review class notes, labs, projects, project solutions, and the text to prepare for the midterm exam scheduled for Tuesday week 5. Bring your questions to section.

(2) Lab 4 Section – Midterm Review Q/A

(3) More Lab 4 Exercises – Python assert

You may have noticed two assert statements in the posted solution to Project 2c Approximate Square Root:

```python
assert n > 0
assert isinstance(n, int)
```

Python assert statements are basic, handy tools that are useful to check certain conditions during code development and debugging. The assert statements from project 2c are confirming that n, the argument passed to function mysqrt, is a positive integer.

When the Python interpreter program encounters the keyword assert during program execution, the Boolean expression immediately following is evaluated. If the expression evaluates to True, Python continues program execution. If the expression evaluates to False, Python raises an AssertionError exception and stops program execution.

(Note that the Python interpreter program can be directed to ignore assert statements, so you cannot rely exclusively on assert for error checking. Python has other tools, such as try/except, for this that we will look at later in the term.)

Try it:
```python
def foo(x, y):
    '''(x: int, y: int) -> int
    return quotient of x divided by y, for positive y
    '''
    assert isinstance(x, int)
    assert isinstance(y, int)
    assert y > 0
    return x // y

# print(foo(8, 4))
# print(foo(8.0, 4.0))
# print(foo(8, 0))
# print('the end')
```
Now write a function, `double_your_num`, that asks the user to enter an integer between 1 and 10, and then prints the number * 2. Check that the input value is valid (type and range). Test your code with correct and incorrect input values.