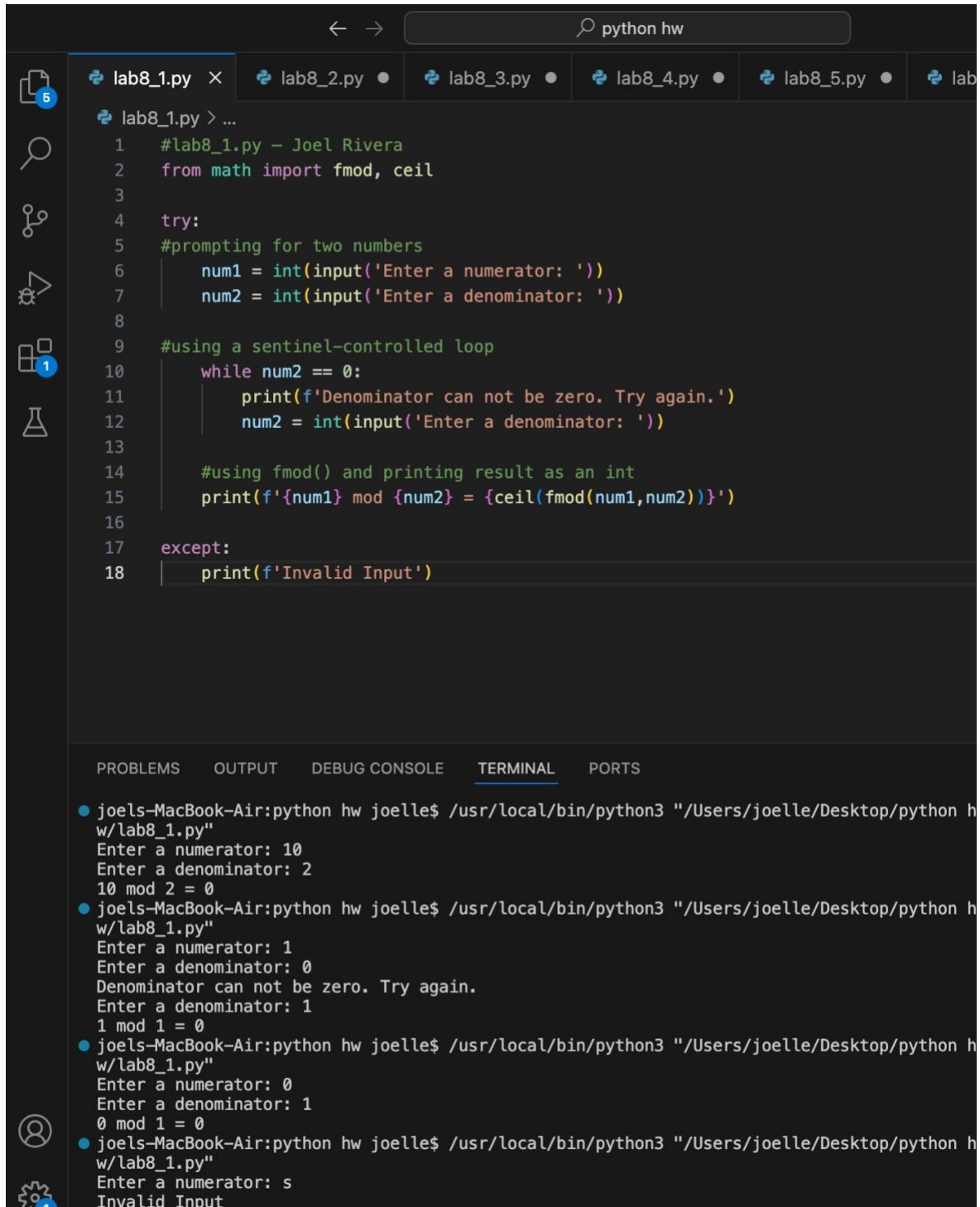


Joel Rivera

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Lab 8

11/1/2024



The screenshot shows a code editor with a dark theme. At the top, there's a search bar with the text "python hw". Below it, several tabs are open, labeled "lab8_1.py", "lab8_2.py", "lab8_3.py", "lab8_4.py", "lab8_5.py", and "lab8_6.py". The "lab8_1.py" tab is active, showing a Python script. The script is as follows:

```
1 #lab8_1.py - Joel Rivera
2 from math import fmod, ceil
3
4 try:
5     #prompting for two numbers
6     num1 = int(input('Enter a numerator: '))
7     num2 = int(input('Enter a denominator: '))
8
9     #using a sentinel-controlled loop
10    while num2 == 0:
11        print(f'Denominator can not be zero. Try again.')
12        num2 = int(input('Enter a denominator: '))
13
14    #using fmod() and printing result as an int
15    print(f'{num1} mod {num2} = {ceil(fmod(num1,num2))}')
16
17 except:
18     print(f'Invalid Input')
```

Below the code editor, there's a terminal window with the following output:

```
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_1.py"
Enter a numerator: 10
Enter a denominator: 2
10 mod 2 = 0
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_1.py"
Enter a numerator: 1
Enter a denominator: 0
Denominator can not be zero. Try again.
Enter a denominator: 1
1 mod 1 = 0
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_1.py"
Enter a numerator: 0
Enter a denominator: 1
0 mod 1 = 0
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_1.py"
Enter a numerator: s
Invalid Input
```

lab8_1.py lab8_2.py × lab8_3.py lab8_4.py lab8_5.py lab8_6.py

lab8_2.py > ...
1 #lab8_2.py - Joel Rivera
2 import random
3 import math
4
5 #generating a random number
6 randNum = random.randint(1,100)
7
8 #using isqrt() and printing result
9 print(f'Square root of {randNum} = {math.isqrt(randNum)}')

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_2.py"
Square root of 4 = 2
● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_2.py"
Square root of 8 = 2
○ joels-MacBook-Air:python hw joelle\$

lab8_1.py lab8_2.py lab8_3.py × lab8_4.py lab8_5.py

lab8_3.py > ...
1 #lab8_3.py - Joel Rivera
2
3 #writing hello function
4 def hello():
5 | print(f'Hello World')
6
7 #calling function
8 hello()

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desk
w/lab8_3.py"
Hello World
○ joels-MacBook-Air:python hw joelle\$

2

1

lab8_1.py

lab8_2.py

lab8_3.py

lab8_4.py ×

lab8_4.py > hello

```
1  #lab8_4.py - Joel Rivera
2
3  #writing hello function
4  def hello():
5      print(f'Hello World')
6
7  #writing helloNum function and adding a parameter
8  def helloNum(n):
9      i = 0
10     while i < n:
11         i+=1
12         hello()
13
14
15     #calling function
16     helloNum(3)
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

PORTS

● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joeT
w/lab8_4.py"
Hello World
Hello World
Hello World

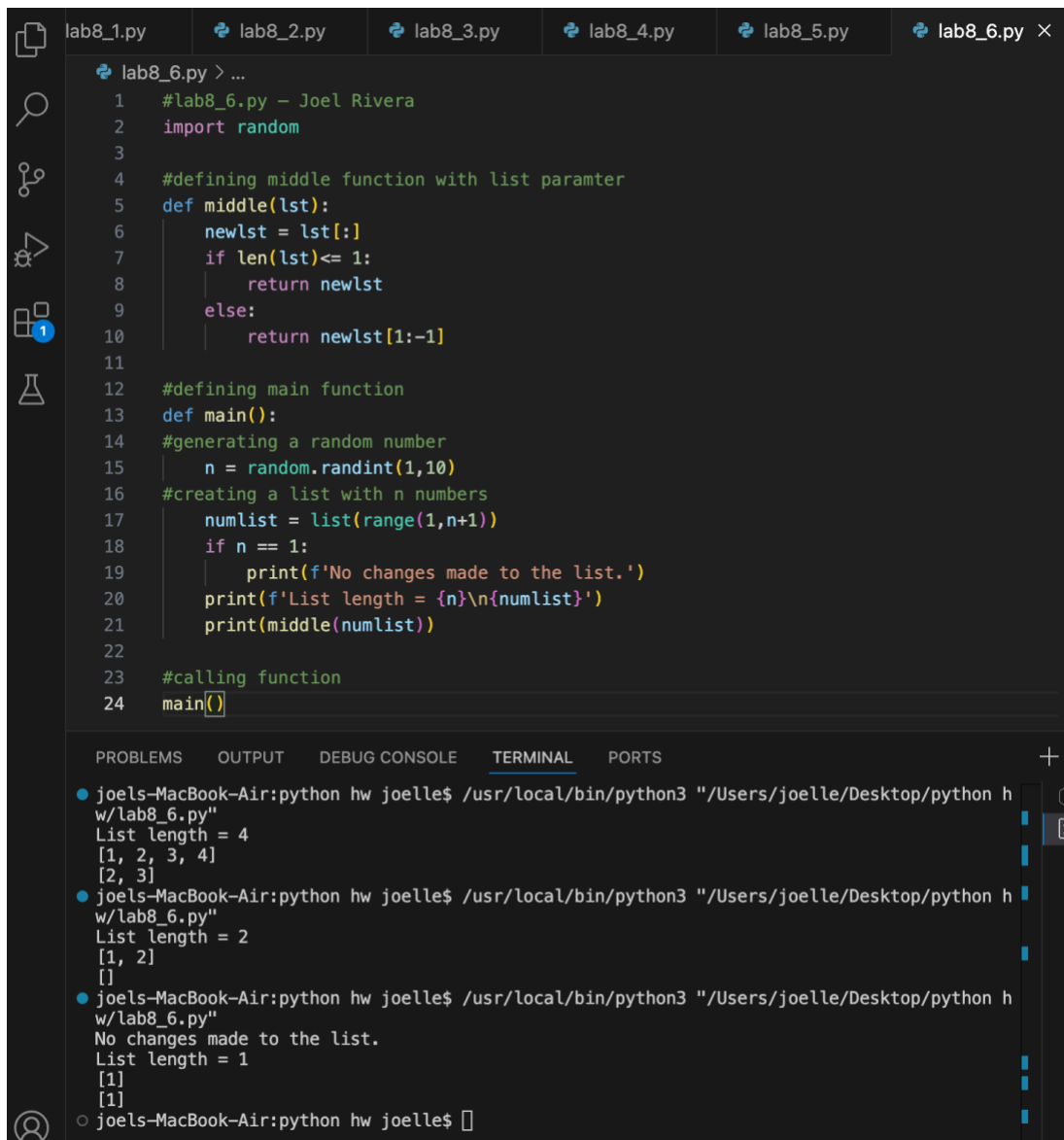
○ joels-MacBook-Air:python hw joelle\$ █

lab8_1.py lab8_2.py lab8_3.py lab8_4.py lab8_5.py x lab8_6.py

lab8_5.py > ...
1 #lab8_5.py - Joel Rivera
2 import random
3
4 #defining message function to print p1, p2 times
5 def message(p1, p2):
6 i = 0
7 while i < p2:
8 print(f'{p1}')
9 i +=1
10
11 #defining main function
12 def main():
13 #requesting a text and printing
14 text = input('Enter a text: ')
15 print(f'text = {text}')
16 #generating a random number and printing
17 n = random.randint(1,10)
18 print(f'n = {n}\nmessage(text, n) will print the following:')
19 message(text, n)
20 main()

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_5.py"
Enter a text: Looking Ahead To Spring
text = Looking Ahead To Spring
n = 3
message(text, n) will print the following:
Looking Ahead To Spring
Looking Ahead To Spring
Looking Ahead To Spring
○ joels-MacBook-Air:python hw joelle\$



The image shows a VS Code editor window with a Python file named `lab8_6.py`. The code defines a `middle` function that takes a list `lst` and returns a new list. If the length of `lst` is 1 or less, it returns `lst`. Otherwise, it returns `lst[1:-1]`. The `main` function generates a random number `n` between 1 and 10, creates a list `numlist` of `n` numbers using `list(range(1, n+1))`, and prints the list length and the list itself. It then calls the `middle` function and prints the result.

```
1 #lab8_6.py - Joel Rivera
2 import random
3
4 #defining middle function with list paramter
5 def middle(lst):
6     newlst = lst[:]
7     if len(lst) <= 1:
8         return newlst
9     else:
10        return newlst[1:-1]
11
12 #defining main function
13 def main():
14     #generating a random number
15     n = random.randint(1,10)
16     #creating a list with n numbers
17     numlist = list(range(1,n+1))
18     if n == 1:
19         print(f'No changes made to the list.')
20     print(f'List length = {n}\n{numlist}')
21     print(middle(numlist))
22
23 #calling function
24 main()
```

The terminal output shows three runs of the script. In the first run, `n` is 4, and the list is `[1, 2, 3, 4]`, which is transformed to `[2, 3]`. In the second run, `n` is 2, and the list is `[1, 2]`, which is transformed to `[1]`. In the third run, `n` is 1, and the list is `[1]`, which remains `[1]` because no changes are made.

```
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_6.py"
List length = 4
[1, 2, 3, 4]
[2, 3]
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_6.py"
List length = 2
[1, 2]
[1]
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python h
w/lab8_6.py"
No changes made to the list.
List length = 1
[1]
[1]
joels-MacBook-Air:python hw joelle$
```

7. I faced two challenges in this week's lab, both came from the last question lol. The first challenge came from line 17; I had originally written 'numlist = list(range(n))' and was confused as to why my list kept starting at zero. I realized that the range() function with a single parameter is read as start from zero up until the parameter number but not including it, so I rewrote the range function to start at one and end at n+1 to include the last number. The second challenge I faced came from trying to return the original list if the variable 'n' was equal to one. I used if else statements to check whether the length of the list was one and if it was, I returned the original list.