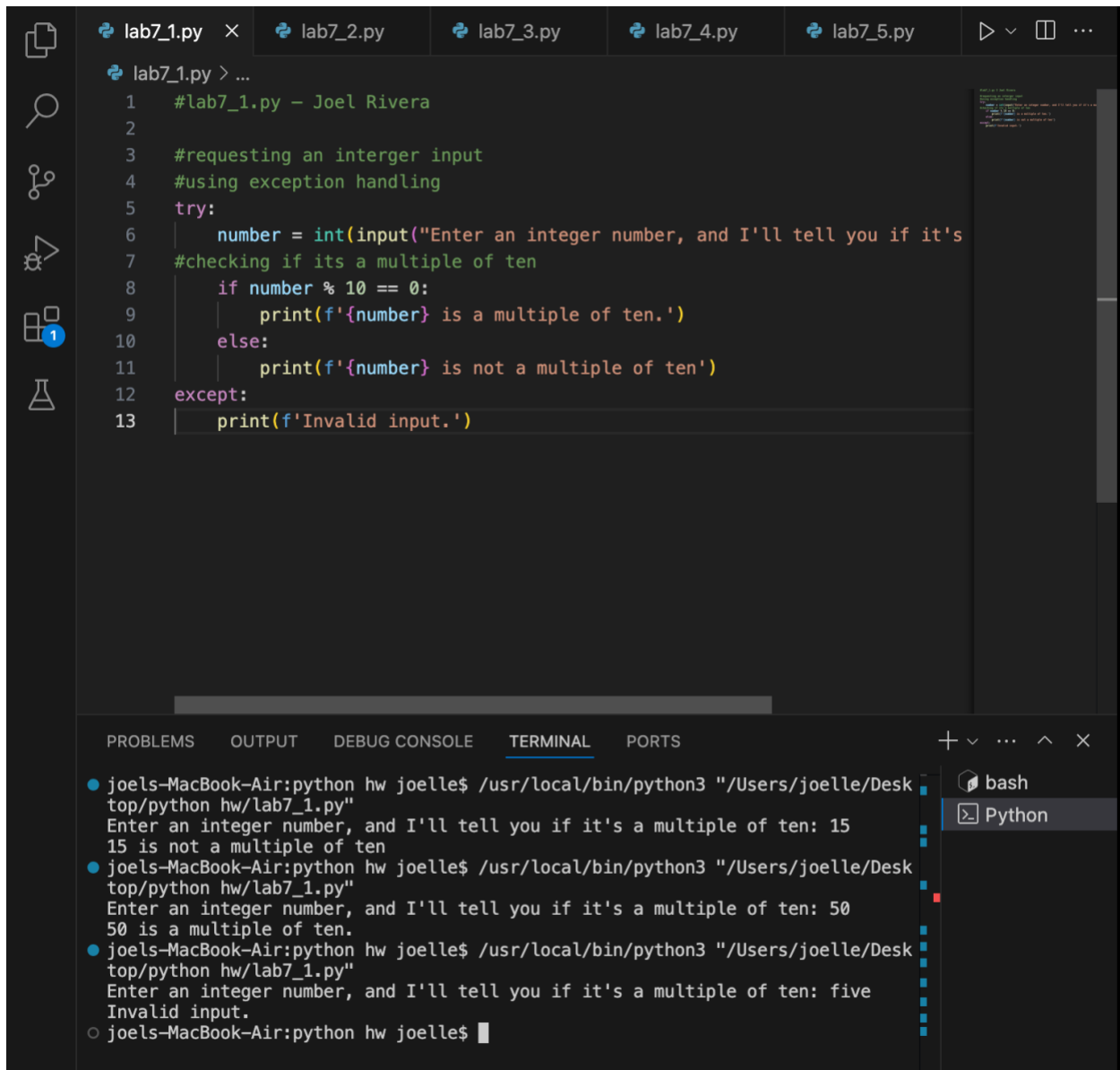


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Lab 7

10/28/2024



The image shows a Visual Studio Code editor window with a Python script named `lab7_1.py` open. The script is designed to request an integer input from the user and check if it is a multiple of ten. It uses a `try-except` block to handle potential `ValueError` exceptions. The script's logic is as follows:

```
1  #lab7_1.py - Joel Rivera
2
3  #requesting an interger input
4  #using exception handling
5  try:
6      number = int(input("Enter an integer number, and I'll tell you if it's
7  #checking if its a multiple of ten
8      if number % 10 == 0:
9          print(f'{number} is a multiple of ten.')
10     else:
11         print(f'{number} is not a multiple of ten')
12 except:
13     print(f'Invalid input.')
```

The terminal window at the bottom displays the execution of the script. It shows three separate runs where the user enters different numbers: 15, 50, and five. The output for each run correctly identifies whether the number is a multiple of ten or if the input is invalid.

```
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_1.py"
Enter an integer number, and I'll tell you if it's a multiple of ten: 15
15 is not a multiple of ten
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_1.py"
Enter an integer number, and I'll tell you if it's a multiple of ten: 50
50 is a multiple of ten.
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_1.py"
Enter an integer number, and I'll tell you if it's a multiple of ten: five
Invalid input.
joels-MacBook-Air:python hw joelle$
```

lab7_1.py lab7_2.py lab7_3.py lab7_4.py lab7_5.py

lab7_2.py > ...

```
1  #lab7_2.py - Joel Rivera
2
3  #using a for loop to print even && multiple of 3 numbers
4  for num in range(1,1000):
5      if num % 2 ==0 and num % 3 == 0:
6          print(f'{num}', end=' ')
7  print()
8
9  #converting to a while loop
10 #using a counter
11 i = 1
12 while i < 1000:
13     #incrementing counter with each iteration
14     i+=1
15     if i % 2 ==0 and i % 3 == 0:
16         print(f'{i}', end=' ')
17 print()
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
32 738 744 750 756 762 768 774 780 786 792 798 804 810 816 822 828 834 840 846
852 858 864 870 876 882 888 894 900 906 912 918 924 930 936 942 948 954 960 9
66 972 978 984 990 996 joels-MacBook-Air:python hw joelle$ /usr/local/bin/pyth
top/python hw/lab7_2.py"
6 12 18 24 30 36 42 48 54 60 66 72 78 84 90 96 102 108 114 120 126 132 138 144
150 156 162 168 174 180 186 192 198 204 210 216 222 228 234 240 246 252 258 2
64 270 276 282 288 294 300 306 312 318 324 330 336 342 348 354 360 366 372 378
384 390 396 402 408 414 420 426 432 438 444 450 456 462 468 474 480 486 492 4
98 504 510 516 522 528 534 540 546 552 558 564 570 576 582 588 594 600 606 612
618 624 630 636 642 648 654 660 666 672 678 684 690 696 702 708 714 720 726 7
32 738 744 750 756 762 768 774 780 786 792 798 804 810 816 822 828 834 840 846
852 858 864 870 876 882 888 894 900 906 912 918 924 930 936 942 948 954 960 9
66 972 978 984 990 996
6 12 18 24 30 36 42 48 54 60 66 72 78 84 90 96 102 108 114 120 126 132 138 144
150 156 162 168 174 180 186 192 198 204 210 216 222 228 234 240 246 252 258 2
64 270 276 282 288 294 300 306 312 318 324 330 336 342 348 354 360 366 372 378
384 390 396 402 408 414 420 426 432 438 444 450 456 462 468 474 480 486 492 4
98 504 510 516 522 528 534 540 546 552 558 564 570 576 582 588 594 600 606 612
618 624 630 636 642 648 654 660 666 672 678 684 690 696 702 708 714 720 726 7
32 738 744 750 756 762 768 774 780 786 792 798 804 810 816 822 828 834 840 846
852 858 864 870 876 882 888 894 900 906 912 918 924 930 936 942 948 954 960 9
66 972 978 984 990 996
joels-MacBook-Air:python hw joelle$
```

lab7_3.py × lab7_4.py lab7_5.py lab7_6.py lab7_7.py

lab7_3.py > ...
1 #lab7_3.py - Joel Rivera
2
3 #using a for loop to calculate the sum of 1-100
4 total= []
5 for num in range(1,101):
6 total.append(num)
7 print(f'Sum = {sum(total)}')
8
9 #using a while loop for the sum of all even
10 total=[]
11 i=1
12 while i <101:
13 #checking if even
14 if i % 2 == 0:
15 total.append(i)
16 i+=1
17 print(f'Sum = {sum(total)}')

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_3.py"
Sum = 5050
Sum = 2550
○ joels-MacBook-Air:python hw joelle\$

bash
Python

lab7_3.py lab7_4.py lab7_5.py lab7_6.py lab7_7.py

lab7_4.py > ...
1 #lab7_4.py - Joel Rivera
2
3 #implement a while loop
4 i = 9
5 while i>0:
6 print(f'{i}')
7 i-=1
8 print(f'Happy New Year!')
9
10 #converting to a for loop
11 for num in range(9,0,-1):
12 print(f'{num}')
13 print(f'Happy New Year!')

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_4.py"
9
8
7
6
5
4
3
2
1
Happy New Year!
9
8
7
6
5
4
3
2
1
Happy New Year!
joels-MacBook-Air:python hw joelle\$

bash

Python

lab7_3.py • lab7_4.py • lab7_5.py × lab7_6.py lab7_7.py

lab7_5.py > ...
1 #lab7_5.py - Joel Rivera
2 import random
3
4 #requesting an integer
5 number = int(input('Enter the number of grades in the list: '))
6
7 #use a loop to generate random grades
8 grades = []
9 for num in range(number):
10 r=random.randint(1,100)
11 grades.append(r)
12
13 #requesting the passing grade
14 passingNum=int(input('Enter the passing grade: '))
15
16 passGrades=[]
17 for n in grades:
18 if n >= passingNum:
19 passGrades.append(n)
20 print(f'Updated List: {passGrades}\nOriginal List: {grades}')

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

n1 = n2

● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_5.py"
Enter the number of grades in the list: 10
Enter the passing grade: 65
Updated List: [95, 96, 89]
Original List: [32, 95, 33, 4, 96, 12, 89, 31, 52, 57]
○ joels-MacBook-Air:python hw joelle\$

lab7_3.py • lab7_4.py • lab7_5.py • lab7_6.py × lab7_7.py

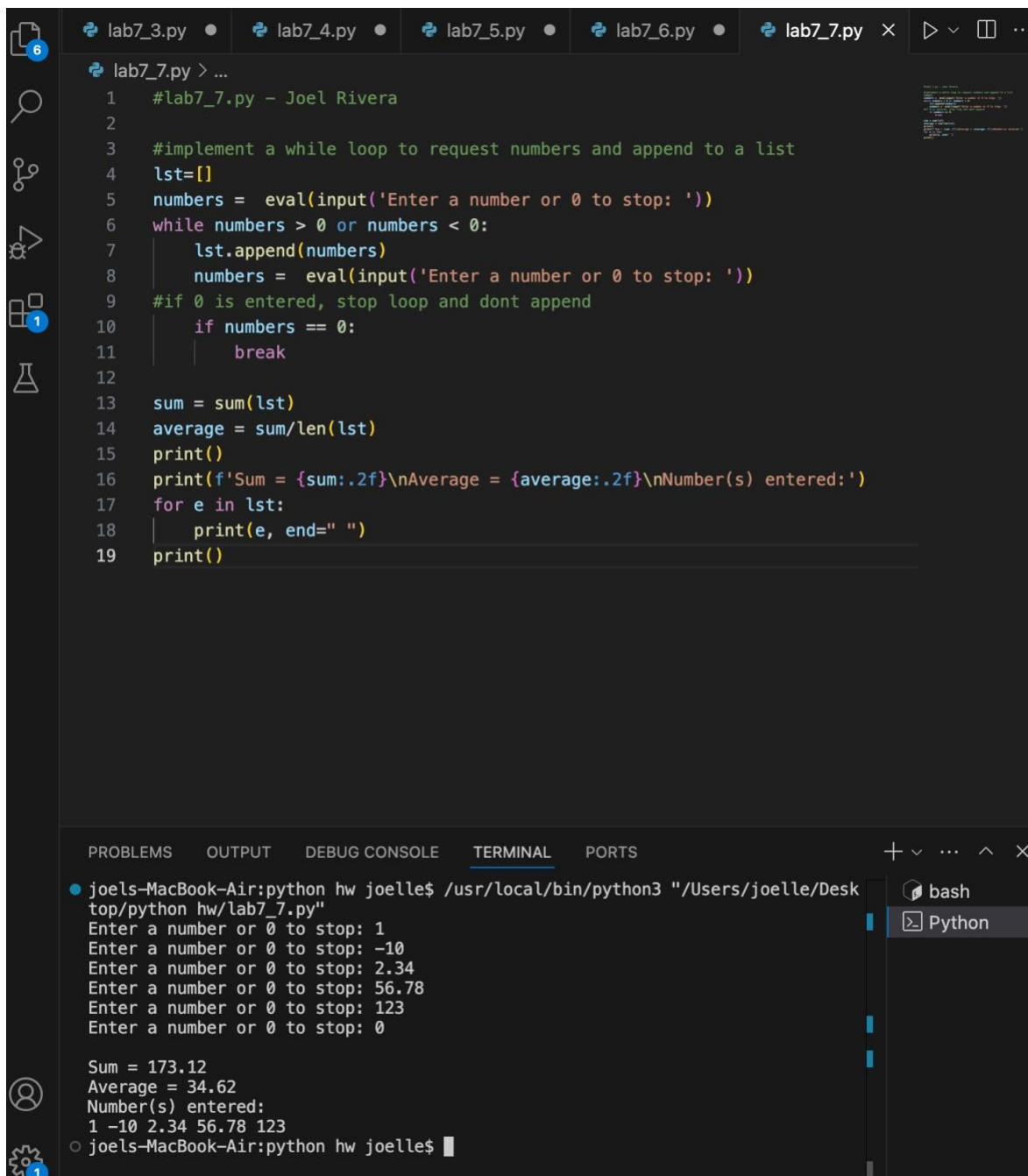
lab7_6.py > ...
1 #lab7_6.py - Joel Rivera
2
3 #requesting two numbers from console
4 nOne = int(input('Enter a number n1: '))
5 nTwo = int(input('Enter a number n2: '))
6
7 #use a while loop to print if n1 < n2
8 if nOne < nTwo:
9 while nOne < nTwo+1:
10 print(f'{nOne}', end='|')
11 nOne += 1
12
13 #using a for loop to print if n1 > n2
14 elif nOne > nTwo:
15 for num in range(nOne, nTwo-1, -1):
16 print(f'{num}', end='|')
17
18 #if equal
19 else:
20 print(f'n1 = n2')
21 print()

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Users/joelle/Desktop/python hw/lab7_6.py"
● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_6.py"
Enter a number n1: 1
Enter a number n2: 11
1|2|3|4|5|6|7|8|9|10|11|
● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_6.py"
Enter a number n1: 11
Enter a number n2: 1
11|10|9|8|7|6|5|4|3|2|1|
● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_6.py"
Enter a number n1: 11
Enter a number n2: 11
n1 = n2

bash

Python



The screenshot shows a code editor with a dark theme. At the top, there are tabs for several Python files: lab7_3.py, lab7_4.py, lab7_5.py, lab7_6.py, and lab7_7.py. The active file is lab7_7.py, which contains the following Python code:

```
1 #lab7_7.py - Joel Rivera
2
3 #implement a while loop to request numbers and append to a list
4 lst=[]
5 numbers = eval(input('Enter a number or 0 to stop: '))
6 while numbers > 0 or numbers < 0:
7     lst.append(numbers)
8     numbers = eval(input('Enter a number or 0 to stop: '))
9 #if 0 is entered, stop loop and dont append
10 if numbers == 0:
11     break
12
13 sum = sum(lst)
14 average = sum/len(lst)
15 print()
16 print(f'Sum = {sum:.2f}\nAverage = {average:.2f}\nNumber(s) entered:')
17 for e in lst:
18     print(e, end=" ")
19 print()
```

Below the code editor is a terminal window. The terminal shows the command to run the script and its output:

```
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab7_7.py"
Enter a number or 0 to stop: 1
Enter a number or 0 to stop: -10
Enter a number or 0 to stop: 2.34
Enter a number or 0 to stop: 56.78
Enter a number or 0 to stop: 123
Enter a number or 0 to stop: 0

Sum = 173.12
Average = 34.62
Number(s) entered:
1 -10 2.34 56.78 123
joels-MacBook-Air:python hw joelle$
```

8. I faced two challenges in this week's lab. The first I encountered when I got to question 5, I couldn't figure out how to generate a random number. I looked online and I kept seeing `random.randint()` being used but I wasn't sure if there was another way. However, while looking through the example problems, I saw an example where I saw `random` was being imported and used so I decided to use it here. The second challenge I faced came from question 7. Originally, I was having an issue with having a 0 being appended to the list if it was the first integer inputted. I realized my mistake was having `lst.append(numbers)` right after line 5 in my code. I removed this line and it fixed my error.