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Lab 5

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The screenshot shows a VS Code editor window with a dark theme. The top bar displays 'python hw'. The editor has four tabs: 'lab5_1.py', 'lab5_2.py', 'lab5_3.py', and 'lab5_4.py'. The 'lab5_1.py' tab is active, showing a Python script. The script contains comments and code for two tasks: Task A (printing odd numbers) and Task B (printing cubes). A tooltip is visible over the word 'int' in the list comprehension, showing '(variable) num: int'. The bottom panel shows the 'TERMINAL' tab with the command 'python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab5_1.py"' and its output. The output shows the first task's result and the second task's result, which is a list of cubes. The status bar at the bottom shows 'Ln 20, Col 29', 'Spaces: 4', 'UTF-8', 'LF', 'Python', '3.12.6 64-bit', 'Go Live', 'Prettier', and a bell icon.

```
1 #lab5_1.py - Joel Rivera
2
3 #A: Print all the odd numbers from 1 to 9 inclusive in a list, odd_num.
4 odd_num=[]
5 for num in range(10):
6     if (num%2!=0):
7         odd_num.append(num)
8 print(odd_num)
9
10 #B: Make a list of the first 10 cubes.
11 #Use a for loop to print out the value of each cube in a new line (see output below).
12 for num in range(11):
13     print(num**3)
14
15 #C: Use a list comprehension to create a list of the first 10 cubes.
16 #Use a for loop to print out the value of each cube in a row separated by a '|' (see output below).
17 firstTen=[num**3 for num in range(11)]
18
19 for num in firstTen:
20     print(f'{num}', end='|')
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
9 X 3 = 27
10 X 3 = 30
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab5_1.py"
[1, 3, 5, 7, 9]
0
1
8
27
64
125
216
343
512
729
1000
joels-MacBook-Air:python hw joelle$
```

Ln 20, Col 29 Spaces: 4 UTF-8 LF Python 3.12.6 64-bit Go Live Prettier

The image shows a Visual Studio Code editor window with a dark theme. The top bar shows a search icon and the text "python hw". Below the top bar, there are four tabs: "lab5_1.py", "lab5_2.py" (active), "lab5_3.py", and "lab5_4.py". The active tab "lab5_2.py" contains the following Python code:

```
1 #lab5_2.py - Joel Rivera
2
3 #using list comprehension to generate a list of even numbers
4 evenNums=[num for num in range(101) if num%2==0]
5
6 #use slicing to print the first 5 numbers
7 print(f'{evenNums[0:5]}')
8
9 #use slicing to print the last 5 numbers
10 print(f'{evenNums[-5:]}')
11
12 #use slicing and index to print 44-88
13 start, end=evenNums.index(44), evenNums.index(88)+1
14 print(f'{evenNums[start:end]}')
```

Below the code editor, there is a panel with four tabs: "PROBLEMS", "OUTPUT", "DEBUG CONSOLE", and "TERMINAL" (active). The "TERMINAL" tab shows the output of the Python script:

```
0
1
8
27
64
125
216
343
512
729
1000
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab5_2.py"
[0, 2, 4, 6, 8]
[92, 94, 96, 98, 100]
[44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88]
joels-MacBook-Air:python hw joelle$
```

On the right side of the terminal panel, there is a dropdown menu with "bash" and "Python" options. At the bottom of the window, there is a status bar showing "Ln 14, Col 32", "Spaces: 4", "UTF-8", "LF", "Python", "3.12.6 64-bit", "Go Live", "Prettier", and a bell icon.

python hw

lab5_1.py lab5_2.py lab5_3.py X lab5_4.py

lab5_3.py > ...
1 #lab5_3.py - Joel Rivera
2
3 #creating a list comprehension
4 multiFour=[num*4 for num in range(11)]
5 print(f'{multiFour}')6
7 #creating an empty list, and using a for loop to append each item
8 secList=[]
9 for num in multiFour:
10 halved=int(num/2)
11 secList.append(halved)
12 print(f'{secList}')13
14 #using slicing to copy the list
15 thirdList=secList[:]
16 #using a for loop to iterate through the length of thirdList
17 for num in range(len(thirdList)):
18 #replacing the original value with half value while in place
19 thirdList[num] = int(thirdList[num]/2)
20 print(f'{thirdList}')

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

512
729
1000
● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab5_2.py"
[0, 2, 4, 6, 8]
[92, 94, 96, 98, 100]
[44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88]
● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab5_3.py"
[0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40]
[0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
● joels-MacBook-Air:python hw joelle\$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab5_3.py"
[0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40]
[0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
○ joels-MacBook-Air:python hw joelle\$

bash
Python

Ln 20, Col 22 Spaces: 4 UTF-8 LF Python 3.12.6 64-bit Go Live Prettier

The image shows a VS Code editor window with a file explorer on the left and a terminal at the bottom. The active file is `lab5_4.py`, which contains the following Python code:

```
1 #lab5_4.py - Joel Rivera
2
3 #using for loop with input
4 try:
5     #prompting integer range
6     numRange=int(input('Enter a range: '))
7
8     #implementing a list of numbers from 1 to range inclusive
9     newList=list(range(1, numRange+1))
10
11     #prompting integer number
12     newNum=int(input('Enter an integer number: '))
13
14     #using a for loop to print multiplication table of number
15     print(f'Multiplication table of {newNum}')
16     for num in newList:
17         print(f'{num}\tX\t{newNum}\t=\t{num*newNum}')
18 except:
19     print(f'Invalid Input.')
```

The terminal output shows the execution of the script. It prompts for a range (5) and an integer number (10), then prints a multiplication table for 10. The output is as follows:

```
[0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40]
[0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab5_4.py"
Enter a range: 5
Enter an integer number: 10
Multiplication table of 10
1 X 10 = 10
2 X 10 = 20
3 X 10 = 30
4 X 10 = 40
5 X 10 = 50
joels-MacBook-Air:python hw joelle$ /usr/local/bin/python3 "/Users/joelle/Desktop/python hw/lab5_4.py"
Enter a range: string
Invalid Input.
joels-MacBook-Air:python hw joelle$
```

5. The first challenge I faced was in the 3rd problem of the lab. I was having an issue copying the second list into the third list and then modifying the list without appending to a forth list, similar to how I appended the variable 'halved' into secList. To find a solution I went on stack overflow where I learned I could replace the original value with value/2 in place while the for loop was iterating and then could print the list, giving me the correct output. The 2nd issue I faced was getting the entire range to output in the last question. I realized I was missing a '+1' so it only iterated to the last index but didn't include it into the output.