Hi Dr. Moovsi, my name is Shalini Thiru and I am in my 4th year of environmental science. Im taking this course as an elective but I have been super interested to learn programming for the last couple years.

This is an explainer video for lab 2. Im going to start off with 2A , specifically the the merging in git level. So here we have 2 different branches, that were independent of each other and the goal was to merge them so that a commit from either branch would include all the work. Ultimately, the command git merge bugfix merged was used to merge both bugfix into main and now a commit from main encompasses both bugfix and main, which is all the work on our repository. Now, each branch represents all the work in the repository and not just one.

Starting with Task 1.1 here we were asked to split the following string into a list. This was fairly easy as I just sued the split function to do so. So yeah because we were slotting on the space character, we left the brackets blank but if it was splitting on a comma for example there would be a comma in quote in the brackets.

For task 1.2, we dealt with F strings, which are a formatting mechanism for convenience to format a string. It uses f and {} .And as we can see for this question we wanted the sentenceto say “ the speed of light is 2.99” so we set a variable thing, and assigned the value light to it. and we set speed as a variable and assigned the value of speed of light to it. That also allowed us to format the exponent for the speed of light using :2e.

For task 1.3 and 1.4, it was focused on manipulating lists and dictionaries. 1.3 was fairly simple and I used the built in function for nested lists which is L. Python lists begin with a 0, the second is 1, so on so forth. So in order to grab the word “MDS” I had to access MDS which was in the 3rd level. To access it the numer [5 is in the 2ns….

For 1,4, it is similar to the previous question however while lists are based on indexes starting from 0,1,2,3, here we are working with dictinary,which is based on keys and values. Keys are defined by quote in colon. And values are in the square brackets. This was a nested dictionary to what we did for the list in the previous question. In this dictionary, there were sublists and subdictionaries so we had to traverse through the list up until we got to data 301 which is in the 6th level. Instead of l we used d and followed similar steps as last question.

For task 1.5, we were asked to come up with conditional statements according to some rules. To do this, I used if/elif/else statements. So for the first condition, we want the output as I love snakes only if the language matches exactly “python”. But even if as language contains python with upper ase, we have language.lower command to force it to become a lower case. I did the same thing for the 2nd and third conditions, with elif and else, and changed the parameters.

So for this question, since language = python, the first condition is satisfied and true hence, it printed I love snakes.

So now we are at Task 2.

Task 2.1 is similar to the earlier tast from the previous section. Here I are counting the number of characters. I did that using the len() dunction. If the length of the characters is more than 18, as we can see if satisfies the first condition, and the output will be “ name Shalini thiru is more than 18 charc long” and as we go down the list, if any of the conditons or true it will print the associated statement if not, the last command becomes true and is executed where it says name is short.

I found tasl 2.2 quite challenging initially. Here since we needed to print that pattern, we used a for loop function. Since there are 9 rows in this pattern, our range is from 1-9 however when we write it its 1-10, because the value 10 is not included. I was able to figure out how to get half of the pattern quite easily but to get the mirror image was tricky. Then after playing around with it for awhile I saw that after the 5th ileration the number of A’s reduces by 1. Hence I used an if statement. So up untul 5, the number of A will increase, and anything else it will become less.

For task 2.3.1, we used for list, loop and conditional statement to isolate some values according to some bounds whoch were values within 15 and 40. So first data was defined as a lsit. And then to find the total number of values, we used len(data) and we set that as a variable n. For this range, we start with 0 according to python indexing and we go up all the way to n. In order to satisfy the condition that the numbers are in between 15 and 40, we set an if statement . Since the question said within, I used the greater than and equal and the lesser than and equal. So in this every value was read, and compared. So if it was then in between 15 and 40, it would be printed. As we can see we get the correct output.

For task 2.3.2 , I was able to use one of the many built in functions that python has. Honestly it makes the coding a lot more easier espceically for beginners like me because I feel like the code I see makes sense. Here we just used the various, max, min, sum, len built in functions to execute what we want. For average, I did try using the mean() built in function but it was not working so I had to just do sum and divide it by n or the count. And yeah we got the correct output.

Lastly we have task 3. Starting at 3.1 we were asked to create a dictionary with some fake information. I set my dictionary as staff info and created 3 keys, for name, age and salary and then filled in dummy info. Then did print staff info for output.

Similarly, task 3.2 asked to create a dictionary as well but it wanted entries for 5 diff people. So I still kept 3 keys for name, age and salary and instead of 1 value, made each value into a list. Likewise, I did print staff info to see it.

And then for 3.3, we were to calculate the frequency of each letter from a paragraph. So I followed the hint and did some research and found that I have to import from collections import counter. Then I set text as a string with the data. Counter function has a built in frequency counter where it counted the number of characters. and then to sort it in ascending order, I had to use this sortedlist= sorted so usinf the keys I sorted it and was abel to get the corrext output

Test 1