Lab - Lesson 2

1. String Indexing

Given the string **s = 'Python'**, use indexing to print the following:

- 'o'
- 'Pyth'
- 'yth'
- 'nohtyP'

2. Nested List

Given the list **l = [3, 7, [1, 4, 'hello']]**, change the value 'hello' to 'goodbye'.

3. Dictionaries – Access Values

Using keys and indexing, retrieve the value 'hello' from the following dictionaries:

d1 = {'simple_key':'hello'}

d2 = {'k1':{'k2':'hello'}}

d3 = {'k1':[{'nest_key':['this is deep',['hello']]}]}

4. Sets – Unique Values

Use a set to find the unique values in the list:

mylist = [1,1,1,1,1,2,2,2,2,3,3,3,3]

5. Print Formatting

You are given the variables:

age = 4

name = 'Sammy'

Use print formatting to display:

"Hello my dog's name is Sammy and he is 4 years old"

6. Loop – Power Calculation

Write a program that takes two integers as input (base and exponent) and calculates the

power using loops.

7. Tuple – Sum of Elements

Write a program that calculates the sum of all elements in a given tuple.

8. Tuple with Condition

Create a new tuple that contains only the even numbers from a given tuple of integers.

9. Dictionaries – Merge

Write a program that merges two dictionaries into one. If a key exists in both, the value from the second dictionary should be used.

10. List Comprehension – Even Numbers

Write a program that takes a list of integers and uses list comprehension to create a new list containing only the even numbers.

11. String – Reverse

Write a program that takes a string as input and prints the reversed string.