University of Windsor
School of Computer Science
https://cs.uwindsor.ca

Master of Applied Computing
COMP-8347
Internet Applications and Distributed Systems

Dr. Adel Abusitta – adel.abusitta@uwindsor.ca

LAB 1 – Introduction to Python

NOTE: Use Python's **IDLE** interactive tool. Write your answer beside each command in this sheet in **bold**.

Part 1 - Lists in Python: Given the following two lists:

L1 = ['university', 'blue', 29, (4, 99, 186), [(6,'w'), 19, (5,'z')], 'DATA', 'N9E', 21, 'Delta']

L2 = ['openai', 'law', 98, 8.00, 'lion', 'extranet']

1.1 - Work with list indexing and slicing:

Indicate the results if you type the following commands in IDLE:

a) L1[2][1]
b) L1[3][0]
c) L1[4][2][1]
d) len(L1)
e) L1[14]
f) L1[-4:-1]
g) L1[2:14]
h) L2+L1
i) L2*2
j) L1[4][1] = 4
k) del L2[-3]

1.2 - Work with list methods and data types:

Type python commands to do the following:

a) append the string 'ublike' to L1
b) remove the last element of L2
c) insert the item 4.8 at index 3 in L1
d) add the integers in the list [44, 50] at the end of L2

Part 2 - Strings in Python: Given the following two strings:

s1 = "One should note that IEEE Transactions are extremely selected"

s2 = "There are two areas in cloud computing: performance and security"

Work with string indexing, slicing, striding, assignment, concatenation: Indicate the results if you type the following at the Python prompt in IDLE interactive mode. Indicate the type of error if the command is wrong:

a) s1[:9]
b) s2[-1:-4]
c) s2[-2:]
d) s2[0:15:2]
e) s1+" "+s2

Work with string methods: Use **str** methods to do the following and indicate the corresponding results:

a) Check if the string s2 ends with the word 'security'
b) Return a list of words from s2
c) Convert s1 and s2 to all uppercase letters
d) Replace the string 'data' of s2 with empty string
e) Count the number of times 'E' occurs in s1

1) **Part 3- Dictionary in Python:** Define the following *dicts*:

```
#dictionary literals
d1={"name": "Alex", "age": 35, (4, 'f'):['x', 'y', 'z'],  6: "Canada",  44: 99, 19:555}

#dictionary using sequences
d2 = dict([("name","Nancy"),  ('age',  44),  ((3,4), ['a', 'b', 'c']),  (0,  'black'),  (33,  67)])

#dictionary using keywords
d3 = dict(id=777, name='Michel', siblings=['Fung', 'Martin', 'Richard'])
```

Work with dict methods: Type the following commands at the Python prompt in IDLE interactive mode and indicate the result of each command:

a) d1.keys()
b) d2.values()
c) d3.get('id')
d) d2.get('age')
e) d3.get('age')
f) d3.get('name', 'Tim')
g) d2.items()
h) d3['siblings']
i) d2['siblings']
j) d2.update(d3)
k) d2['siblings']*****
l) d2['name']*****

m) d1 == d2

n) len(d2)

o) for key in d1.keys():
    print(key)

p) for key in d2.keys():
    print(d2[key]) *****

*****_means after_ update.