Lesson 6

Admin Matters

Programming Quiz For Week 6

- Begins promptly at the start of **Session 3**
- You have **30 minutes**. (If you are late you have less time)
- Check that you are logged in as yourself in Vocareum
- **NOTE: We will ONLY accept submissions via Vocareum.**

1D Project Presentation on Week 6 Session 3

- Each team should prepare a **4 to 5-minute presentation** and be ready for **2-3 minutes Q&A**.
- Maximum of **five slides**.
- Refer to the rubrics on our wikispaces
- Work out the sequence of presentation among yourselves

Homework

- Homework problems continue and submission is on Tutor.
- Don't forget to press "Check" before you submit.

Digital World + Chemistry Combined Assignment

- Please access the wikispaces page.
- Solve the problems progressively
- You can work in groups but you have to submit individually.
- The submission link is at Week 7 of Tutor and problems are due every week.

Your mid-term test

- Use the marks for each question as a guide as to how much time you should spend
- Do not wait until the end of the test to submit your codes on tutor

Strings

Recall your while loop

What is printed by this code?

```
lst = [3, 6, 9]
sum = 0
counter = 0
while counter < len(lst):
  sum += counter
  counter += 2
print(sum)
```

A) 18 **B**) 6 **C**) 2 **D**) 3 **E**) None of the above

Recall Tuples

```
65 poker_hands = [('6','7'),('A','J','Q'),
66                ('A','2','3')]
67
68 poker_hands[1][2] = 'K'
69 poker_hands[2] = (3,4)
70 print len( poker_hands )
```

Which line will produce an **error**?

A) line 68 **B**) line 69 **C**) line 70

D) a combination of the lines

E) None of the above – all lines will work

Overloaded Operators

```
44 out = 5
45 a = "five (" + '5' + ")"
46 b = ''*out
47 c = "five" + out
48 d = 'five'*out
49 e = str(out) + ' five'
```

Which of the lines produces an error?

A) line 45 **B**) line 46 **C**) line 47 **D**) line 48 **E**) line 49

Slicing

```
 7                '01234567890123456789012'
 8sentence = 'everything was as fresh'
```

What would make **`substring == 'was'`** true?

```
10substring = sentence[11:14]
11substring = sentence[11:13]
12substring = sentence[10:13]
13substring = sentence[10:14]
```

A) line 10 **B**) line 11 **C**) line 12 **D**) line 13 **E**) all of the above

Replace Method

```
18#               '01234567890123456789012'
19sentence = 'everything was as fresh'
20t = len( sentence.replace('as','x') )
```

The value of **`t`** is

A) 23 **B**) 22 **C**) 21 **D**) 20 **E**) 19

Upper Method

```
22word = 'everything'
23word.upper()
24print word
```

The output is **EVERYTHING** True/False

Count Method

```
27 name = 'uvuvwevwevwe onyetenyevwe'
28 substring =
29 print name.count(substring)
```

Which of the following values for **substring** will give the highest value in line 29?

A) `'e'` **B**) `'u'` **C**) `'v'` **D**) `'we'` **E**) `'vwe'`

Looping

Code Snippet A	Code Snippet B

`31 sentence = 'everything'`
`32 for a in sentence:`
`33  print a`
	`35 sentence = 'everything'`
	`36 for i in range(len(sentence)):`
	`37  print`

For B to do the same thing as A, **line 37** should be:

A) `print(i)` **B**) `print( sentence[i] )` **C**) `print sentence`

Is-methods

```
39 word = '6HelloWorld'
40 print word.isalnum()
41 print word.isalpha()
42 print word.islower()
43 print word.isupper()
```

Which of the lines is True?

A) line 40 **B**) line 41 **C**) line 42

D) line 43 **E**) a combination of A to D

Is-methods (2)

```
52 import string
53 word = '6HelloWorld'
54 for a in word:
55     print a in string.letters
```

Which of the following lines could replace line 55 and
the code snippet above will still produce the same output?

A) `print a.isalnum()` **B**) `print a.isalpha()`
C) `print a.isdigit()` **D**) `print a.islower()`
E) `print a.isupper()`

Extra Question - Counting Letters

Write a function **`count_letters(a)`** that takes in a string and returns a dictionary containing every letter in the line and the number of times it occurs. Spaces should be ignored.

```
a = 'Hello World'
```

`print( count_letters(a) )` gives

```
{'h': 1, 'e': 1, 'l':3 , 'o':2 , 'w':1 , 'r':1 ,
'd':1 }
```

Extra Questions – Converting phone number

Write a function **`convert_phone(number)`** that takes a phone number with spelling eg. 6HSBCNOW and returns the actual digits of the phone number as an integer. The phone number can be provided with either upper case or lower case.

Hint. Begin by creating a dictionary with each letter as a key with the associated number as the value. Also the string methods **`lower()`** or **`upper()`** will be helpful.

`print( convert_phone('6HSBCNOW') )` gives `64722669`

File Manipulation

Opening a file

```
 8 f = open('myfile.txt','r')
 9
10 for line in f:
11     print line
12
13 f.close()
```

Code Snippet A

```
15 f = open('myfile.txt','r')
16 s1 = f.readlines()
17 print s1
18 f.close()
```

Code Snippet B

```
20 f = open('myfile.txt','r')
21 s2 = f.readline()
22 while s2:
23     print s2
24     s2 = f.readline()
25
26 f.close()
```

Code Snippet C

```
28 f = open('myfile.txt','r')
29 s3 = f.read()
30 print s3
31 f.close()
```

Code Snippet D

Which code snippet(s) prints out each line of the file separately?

Which code snippet stores the entire file in a **list**?

Which code snippet stores the entire file in a **single string**?

Clicker Question

A file contains the following text:

```
1 I dreamed a dream
2 # Les Miserables
3 #  Claude-Michel Schönberg
4 There was a time when men were kind
5 When their voices were soft
```

This file is opened and its file object passed to **`check_lyrics`**.
What does this function return?

```
36 def check_lyrics(f):
37     line = f.readline()
38     line = f.readline()
39     while line[0] == '#' :
40         line = f.readline()
41
42     return f.readline()
```

A) Line 1
B) Line 2
C) Line 3
D) Line 4
E) Line 5