

FALL 2019 - COMP 141

MIDTERM 2 PRACTICE PROBLEMS

1. Which method could be used to convert a numeric value to a string?
 - a. `str`
 - b. `value`
 - c. `num`
 - d. `chr`

2. Which of the following statements are true? (circle all that are true)
 - a. When you open a file for reading, if the file does not exist, an error occurs.
 - b. When you open a file for writing, if the file does not exist, an error occurs.
 - c. When you open a file for reading, if the file does not exist, the program will open an empty file.
 - d. When you open a file for writing, if the file does not exist, a new file is created.
 - e. When you open a file for writing, if the file exists, the existing file is overwritten with the new file.

3. Which method would you use to determine whether a substring is present in a string?
 - a. `endswith(substring)`
 - b. `find(substring)`
 - c. `replace(string, substring)`
 - d. `startswith(substring)`

4. What would be the value of the variable `list` after the execution of the following code?

```
list = [1, 2]
list = list * 3
```

 - a. `[1, 2] * 3`
 - b. `[3, 6]`
 - c. `[1, 2, 1, 2, 1, 2]`
 - d. `[[1, 2], [1, 2], [1, 2]]`

5. What method is commonly used to add items to the end of a list?
 - a. `append`
 - b. `index`
 - c. `insert`
 - d. `add`

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6. What would be displayed by the following code?

```
list1 = [1, 3, 5]
list1[0] = 2
list1.insert(2, 4)
print(list1)
```

- a. [2, 3, 5, 2]
- b. [2, 3, 4, 5]
- c. [1, 3, 5, 4]
- d. [1, 3, 4, 5]

7. What will be displayed by the following code?

```
myList = [1, 2, 3, 4, 5, 6]
for i in range(1, 6):
    myList[i - 1] = myList[i]

for i in range(0, 6):
    print(myList[i], end = " ")
```

- a. 2 3 4 5 6 1
- b. 6 1 2 3 4 5
- c. 2 3 4 5 6 6
- d. 1 1 2 3 4 5

8. What is the value of the variable `string1` after the execution of the following code?

```
string1 = 'Hello'
string1 += ' world'
```

9. What is the output for `y`?

```
y = 0
for i in range(1, 10):
    y += i
print(y)
```

10. What is the output for `y`?

```
y = 0
for i in range(2, 10, 2):
    y += i
print(y)
```

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11. Each character in a string has a(n) _____ which specifies its position in the string.
12. Strings are _____, which means that once a string is created, it cannot be changed.
13. A(n) _____ is a span of characters that are taken from within a string.
14. To open a file scores.txt for writing, use _____.
15. To open a file scores.txt for reading, use _____.
16. To read the next line of the file from a file object infile, use _____.
17. Given the string `s = "Programming is fun"`, answer the following questions.
 - a. What is `s[:2]`?
 - b. What is `s[4:6]`?
 - c. What is `len(s)`?
 - d. What is `s.find('ram')`?
 - e. What is `s.startswith('m')` ?
 - f. What is `s.replace('fun', 'awesome')`?
 - g. What is `s.lower()`?

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18. Given the following function

```
def nPrint(message, n):  
    while n > 0:  
        print(message)  
        n -= 1
```

What will be displayed by the call `nPrint('a', 4)`?

19. Given the following program:

```
def nPrint(message, n):  
    while n > 0:  
        print(message)  
        n -= 1  
def main():  
    k = 2  
    nPrint("A message", k)  
    print(k)  
main()
```

What is the value of `k` printed out in `main`?

20. What will be displayed by the following code?

```
def f1(x):  
    y = x + 2  
    print(y)  
def main():  
    x = 1  
    f1(x)  
    print(x)  
main()
```

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21. Write a function called **productDigits** that takes in a string containing letters and numbers and returns the product of all the single digits in the string. Example: string = "a2514b" returns 40 since $2*5*1*4 = 40$.

22. Write a function called **total_time** that takes in a string in the format "Hours:Minutes:Seconds" where Hours, Minutes and Seconds can be any number of digits, and it returns the total seconds in that time.

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23. Write a function called **indexSmallest** that takes in a list of integers, and returns the index of the smallest integer in the list.

24. Write a function called **isValid** that takes in as parameters the 3 sides of a triangle as integers, and returns True if the sum of any two sides is greater than the third side, and returns False otherwise.

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25. Write a function called **sumFile** that takes in as a parameter the name of the file, and returns the sum of the numbers in that file. (You can assume that the file will have exactly 1 number per line.)

26. Write a function called **interleave** that takes two string arguments, called `s1` and `s2`, and returns a new string that combines their characters in the following manner: the first character from `s1`, then the first character from `s2`, then the second character from `s1`, then the second character from `s2`, and so on.

For example, `interleave("abc", "xyz")` would return `"axbycz"`.

You may assume that `s1` and `s2` have the same number of characters.