CS303E Week 8 Worksheet: More on Strings

Name: _____   EID: _____

Read the questions carefully, and answer each question in the space provided. Use scratch paper to do your work and then copy your answers neatly and legibly onto the test paper. Only answers recorded on the test paper will be graded.

1. (11 points: 1 point each) The following are true/false questions. **Write either T or F in the boxes at the bottom of page 1.** If there's any counterexample, it's false.

   (a) Characters are a different type from strings in Python.

   (b) If strings s1 and s2 are equivalent, the expression `s1 in s2` will return False because "in" checks for partial matches and not the complete operand length.

   (c) In Python, you can directly modify a character within a string by using the index notation, like `s[2] = "z"`.

   (d) To loop over the indices of string s, you can do
   `for i in range(len(s) + 1)`.

   (e) Strings in Python are 0-based indexed (i.e., the first character is at index 0).

   (f) The `strip()` method in Python removes both leading and trailing whitespace from a string.

   (g) Python allows you to compare strings using the relational operators
   (`<, <=, >, >=`) based on their lengths.

   (h) Strings can indexed using negative numbers.

   (i) On string s, `min(s) == max(s)` will always evaluate to False.

   (j) `islower()`, `isdigit()` and `isalpha()` are all functions, so they take a string as a parameter rather than being directly called on a string.

   (k) When `s` is a string, in loops like `for i in s`, `i` will refer to a character of s each iteration.

a	b	c	d	e	f	g	h	i	j	k

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Questions 2-9 are multiple choice. Each counts 2 points. **Write the letter of the BEST answer in the box on the next page. Please write your answer in UPPERCASE. Each problem has a single answer.**

2. What is the result of `"oink oink" * 2 + " oink"`?

    A. `"oink oinkoink oink oink"`

    B. `"oink oinkoink"`

    C. `"oink oink oink oink"`

    D. Error

    E. None of the above

3. What is the result of `"Teehee".find("e")`?

    A. 1   B. 2   C. 4   D. 5   E. -1

4. Which operator can be used to check if a substring is present in a string?

    A. `contains`   B. `in`   C. `exists`   D. `substring`   E. Both A and B

5. If s = `"Basil and Wybie =)"`, what is the result of the expression
   `len(s) - len(s.replace(" ", ""))`?

    A. 0   B. 1   C. 2   D. 3   E. None of the above

6. Which of the following statements is true about Python strings?

    A. Strings can only contain letters and numbers.

    B. Strings can be modified in place.

    C. Strings must always be enclosed in double quotes.

    D. Strings can be converted to other data types.

    E. Both C and D

7. What does the `replace()` method do when applied to a string?

    A. It removes all whitespace from the string.

    B. It replaces all occurrences of one substring with another.

    C. It reverses the characters in the string.

    D. It raises an error since strings are immutable.

8. If you want to traverse through a string S using negative indices in Python, which loop should you use?

   A. `for char in S`
   B. `for i in range(len(S))`
   C. `for i in range(-len(S), 0, -1)`
   D. `for i in range(-len(S), 0)`
   E. `for i in range(-1, -len(S)-1, -1)`
   F. C, D, and E
   G. C and E

9. If s is a string, which expression will always evaluate to True?

   A. `chr(ord(s))) == s`
   B. `s.upper().lower() == s`
   C. `s[0:len(s)] == s`
   D. All of the above

2	3	4	5	6	7	8	9

The following 7 questions require you to trace the behavior of some Python code and identify the output of that code. For each question, write the output for the code segment on the provided line.

10. (3 points)

```python
s = "vpduwFrrnlh"
new = ""
for char in s:
    new += chr(ord(char) - 3)
print(new)
```

11. (3 points)

```python
s = "SillyGoose-781"
result = ""

for char in s:
    if char in str(not s):
        result += "B"
    elif char.isalpha():
        result += char.upper()
    elif char.isdigit():
        result += str(int(char) + 5)
    else:
        result += char

print(result)
```

12. (3 points)

```python
s = "oompaLoompa"
result = (s[-len(s):-len(s)+5] + " " + s[-6:])

print(result)
```

13. (3 points)

```
spongebob = "goofyG00ber"
patrick = "krus7ykr4b"
gary = "+25"

sandy = patrick.islower() and patrick[999:9999] == ""
squidward = gary.isalnum() and gary.isdigit()
mrKrabs = spongebob[6:8].isdigit() and spongebob.count("o") == 2

print(sandy, squidward, mrKrabs)
```


14. (3 points)

```
def catInTheHat(thing1, thing2):
    thing1 = thing1 + thing2
    thing2 = thing1
    print(thing1 is thing2)

string1 = "greenEggs"
string2 = "Ham"
catInTheHat(string1, string2)
print(string1, string2)
```


15. (3 points)

```
myGuineaPig = "Jerry"  # =)
print(myGuineaPig[0:1000] * 2)
```


16. (3 points)

```
alpha, beta = "castiel", "dean"
omega = beta[:2] + alpha[2:]
sigma = beta[:len(beta)] + alpha[:3]
print(min(omega, sigma), max(omega, sigma))
```


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