Name: (as it would appear on official course roster)	Shravan Sharath Shenoy
UCSB email address:	shravansharathshenoy **@ucsb.edu**
Lab Section:	Monday 9:00 AM
Optional: name you wish to be called if different from above	—
Optional: name of "homework buddy" (leaving this blank signifies "I worked alone")	—

h06: String Formats and File I/O

Assigned: Wednesday, May 15th, 2019
Due: Tuesday, May 21st, 2019
Points: 100

- You may collaborate on this homework with AT MOST one person, an optional "homework buddy". MAY ONLY BE TURNED IN THE LECTURE LISTED ABOVE AS THE DUE DATE. There is NO MAKEUP for missed assignments; in place of that, we drop the single lowest score (if you a zero, that is the lowest score.)
- **IMPORTANT**: When submitting this homework:
  - **DO NOT USE STAPLES**
  - WRITE YOUR **NAME ON EACH PAGE** IN THE SPACE PROVIDED
  - USE DARK INK PENS – PLEASE **DO NOT USE PENCIL**
  - PRINT THIS HOMEWORK **DOUBLE-SIDED** PLEASE!
- **REMEMBER**: If you use code/techniques we have not learned in class, you will **NOT** get credit!

READING ASSIGNMENT: Read Chapter 4 in Perkovic, review your lecture slides/notes. Then complete these problems.

1. (10 pts) Finish the code below such that I am printing numbers from 7 to 12 like this (IMPORTANT: note the use of space character(s) BEFORE the numbers):

```
 7
 8
 9
10
11
12
```

```
for num in range(7, 13):
    print('{:>2}'.format(num))
```

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2. (30 pts) Write Python code that will show the square roots of all integers from 0 to 10, printed on ONE line, each separated by a comma and space (except for the last entry, which has a newline at the end), and showing up to 3 places after the decimal point.

Exactly like this:
`0.0, 1.0, 1.414, 1.732, 2.0, 2.236, 2.449, 2.646, 2.828, 3.0, 3.162`

```
for i in range (11):
    if i != 10:
        print('{:.4}'.format(i**(1/2)),end=", ")
    else:
        print('{:.4}'.format(i**(1/2)))
```

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3. (60 pts) Go to **https://sites.cs.ucsb.edu/~zmatni/cs8s19/itsybitsy.txt.**

   a. Copy the text and save it on your computer on a file using your favorite text editor (example, Notepad or Notepad++ on Windows, or Sublime or TextEdit on MacOS, or vim or emacs on Linux). ***Be careful to save it as a simple TEXT file only*** (that is, NOT as a Rich Text File or Microsoft Word File, etc...).

   b. Run the following Python program that reads the file in part (a) **and then explain what it does and why**. Specifically, explain:

      i. Why do the print statements inside the for-loops have the **end=''** option?
      ii. What differences do the strings **f1** and **f2** seem to do?
      iii. How are each of the 3 runs in the program different from one another?

      (write your answers on the next blank page)

```
f1 = '{0:1}'
f2 = '{0:>55}'

InFile = open('itsybitsy.txt', 'r', encoding='utf-8')
LoL = InFile.readlines()

print("***RUN 1***")
for line in LoL:
    print(line, end='')

print("***RUN 2***")
for line in LoL:
    if "and" in line:
        line = line.replace("and", "AND")
    print(f1.format(line), end='')

print("***RUN 3***")
for line in LoL:
    if "spider" in line:
        line = line.replace("spider", "Gaucho")
    print(f2.format(line), end='')

InFile.close()
```

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Write your answers for question 3 here:

i) end = ' ' is included in the for loops because there would be an extra line that is created without it. The extra line would have been between lines.

ii) f1 essentially keeps the string to be normally printed out.

f2 saves 55 spaces for every line of the string. In addition, extra spaces are placed before the string so it seems like the printed lines are on the right side of the results (right-justified)

iii) In Run 1 and 2, 'and' is capitalized to 'And' because it utilizes replace().

Run 3 looks right justified while 1 and 2 do not. In addition, 'spider' is replaced with 'Gaucho' in Run 3 using replace.