### Homework 2

100 points

Due date: 2/14/2020 - 11:59 pm

**Deliverable:** Submit a Python file (.py) for each question. Name the files as hwX-qY.py where X is the homework number and Y is the question number. For example, for the first question your file name should be hw2-q1.py. Follow the exact naming policy. Otherwise, you get zero. Your TA uses scripts and test cases to automate grading your codes. Wrong naming will interrupt this process.

#### Rubric:

- 1- You need to use loops to solve these questions. Do not use iterators, list comprehension, or any other topic which has not been covered in the class.
- 2- You get no points If the TA cannot run your code. This may happen because of a syntax error, wrong file name, or incorrect algorithm.
- 3- Your code must produce correct output (The TA test your code with a few test cases). There is an example after each question. Your output must appear on the screen similar to the examples.

1- **(50 points)** Write a Python script that takes an odd integer as an input and prints out a diamond using asterisks. The odd integer is the length of the diamond's diameter. For example, if user input is 15, the your code has to print out the following diamond.

For example:

#### Please enter an odd integer:

15



- 2- **(50 points)** Write a Python script to get a sentence and a letter from user. It then needs to:
  - Find any word in the sentence that contains the letter and shows how many times the letter appeared in the word.
  - Prints out how many of the letter exists in the whole sentence.

For example:

# Type a sentence:

I would like to introduce you to Mr. Jacobson.

## What letter are you looking for?

0

'would' has 1 'o'

'to' has 1 'o'

'introduce' has 1 'o'

'you' has 1 'o'

'to' has 1 'o'

'Jacobson.' has 2 'o'

Totally, there are 7 'o'(s) in your sentence.