#### Roger Williams University

#### ENGR 430 Computer Vision

#### Homework 1 Python Baby Steps

#### 15 Points

Please name each file according to the homework and problem number, for example H1P1.py, H1P2.py, H1P1.JPG, etc. Bridges automatically places the submissions of each student in a separate folder, so please do not submit as a compressed folder. Any files your scripts need to run, for example the original image files, must also be uploaded to Bridges. Put a header like the example shown on each script file submitted:

############################

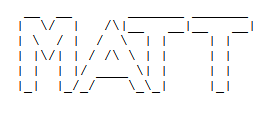
# Ash Ketchum

# ENGR430 Computer Vision H1P1.py

# 9/15/2017

#############################

1.1 Print your name, or at least four letters of your name as ASCII art at least 6 rows high, as per the example shown below. You may use easy-to-find online sources for ideas on creating the letters but your script must produce output using print statements and not image files.



1.2 Create a mxn array where m is the number of letters in your first name and n is the number of letters of your second name. Fill it with random integers between 1 and m\*n and print it to the command window.

1.3 Write a python script that prompts the user to enter a text string between 10 and 30 characters. Scold the user if the string has less than 10 characters and prompt again until the user cooperates and provides at least 10 characters. Ignore characters beyond 30. Convolve the user’s string with the first seven letters of your name, repeated. For example, the first seven letters of my name are

MattSte

And the ASCII equivalent of these characters (in decimal) are:

077 097 116 116 083 116 101

Add these values in order to each character the user enters and wrapping around values greater than lower case z back to capital A. For example if the user enters

The Ritz in the Pip

The ASCII equivalent values are:

084 104 101 032 082 105 116 122 032 105 110 032 116 104 101 032 080 105 112

Add the values of your name repeated to each letter:

+

|  |
| --- |
| 084 104 101 032 082 105 116 122 032 105 110 032 116 104 101 032 080 105 112 |
| 077 097 116 116 083 116 101 077 097 116 116 083 116 101 077 097 116 116 083 |
| 161 201 217 148 165 221 217 199 129 221 226 115 232 205 178 129 196 221 195 |

But A is 65 and lower case z is 122; so subtract 65 from every result and subtract another 57 from any result still above 122 to yield:

`O\_Sdc\_M@ch2nSq@JcI

(Also apply the procedure to the space character (32) although this may yield strange characters). Script may terminate after printing successful encryption.