

IDSN 599: Machine Intelligence

Lab 5

Due: 9/26/2021, 11:59pm

Goal

You will accept user input and display a letter frequency histogram based on the input.

Setup

- Create a Python file called **lp05.py**.
- Your **lp05.py** file must begin with comments in the following format (replace the name and email with your actual information):

```
'''
Name
IDSN 599, Fall 2021
USC email
Lab practical 5
'''
```

Requirements

Your program must perform the following:

- Use a dictionary to store each letter in the alphabet and a corresponding frequency. The alphabet should use uppercase letters as the keys and integer counters for the values. You will use one entry for both uppercase and lowercase letters (for example "A" will be the key for both "a" and "A").
- **HINT:** You can use a loop to create the initial the key-value pairs. Using **ord** and **chr** in a loop you can generate all the keys and initialize their values to 0.
- Repeatedly ask the user for text. When the user enters no text, the input loop should end.
- Display the letter frequency from the user's text as a histogram with "*" to indicate each letter occurrence. The histogram must display the letters in alphabetical order but omit letters with no occurrences.
- **HINT:** Because the keys are not necessarily stored in ascending in the dictionary, you should first generate a list of all the keys. Then use the list's **sort** function to get the keys in the correct order.

Sample output

Below is your target output for a full run-through of the program. User input is in **red**.

```
Gimme some text: In west Philadelphia born and raised
Gimme some text: On the playground where I spent most of my days
Gimme some text: Chilling out, maxing, relaxing all cool
Gimme some text: And all shooting some b-ball outside of the school
Gimme some text:
```

Here's the letter frequency...

```
A : *****  
B : ***  
C : ***  
D : *****  
E : *****  
F : **  
G : *****  
H : *****  
I : *****  
L : *****  
M : ****  
N : *****  
O : *****  
P : ****  
R : *****  
S : *****  
T : *****  
U : ***  
W : **  
X : **  
Y : ***
```

Deliverables

1. A compressed folder containing **lp05.py**, named **lab05.zip**.