

IDSN 599: Machine Intelligence

Lab 4

Due: 9/19/2021, 11:59pm

Goal

You will accept user input and then display factor frequencies.

Setup

- Create a Python file called **lp04.py**.
- Your **lp04.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 4
'''
```

Requirements

Your program must perform the following:

- Ask the user for a number (we'll call it n).
- Generate that many random numbers between 0 and 10,000.
- Determine what numbers between 2 and 51 evenly divide each of the random numbers (we'll call those *factors*).
- Display a frequency chart that indicates which *factors* evenly divide each of the n random numbers. All you need is the number from *factors* and stars (using the asterisk) to indicate how many of the n random numbers it evenly divides.
- **HINT:** Use a dictionary where the keys are numbers 2 through 51 and the values are initialized to 0.
- **HINT:** Use `random.randrange(X)` from the `random` module to generate random numbers.

Sample output

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

```
Gimme a number: 100
For 100 random numbers, are the factor frequencies...
2      : *****
3      : *****
4      : *****
5      : *****
6      : *****
7      : *****
8      : *****
9      : *****
```

```
10 : ****
11 : ****
12 : ****
13 : ****
14 : ****
15 : ****
16 : ****
17 : ****
18 : ****
19 : ****
20 : ***
21 : ****
<etc...>
```

Deliverables

1. A compressed folder containing **lp04.py**, named **lab04.zip**.