SchoolNova Computer Science 201
Homework 1-30-2022

Save your code as lastname_homework.py and submit on Google Classroom.

Task 1

Study the posted solution to the Dragon's problem (classwork 1-30-2022). Make sure you understand everything!

Task 2

Download 'puzzle.csv' (from Google Classroom) to your computer and load in Python as a list. For example, you can save the file to a specific folder and then use numpy's loadtxt:

```
import numpy as np
import os
os.chdir('C:\\python')
X = np.loadtxt("puzzle.csv") # after the file is saved to the folder above
```

Verify that the values are successfully loaded.

Task 3

There are 1000 numbers in X. The numbers follow a particular (secret!) pattern. Notice that the relationship is stochastic as there is a some 'noise' (randomness) and some relationships are [statistically] stronger than others.

In the future, we will use machine learning to figure out the pattern. Without using machine learning, is there anything you can do to figure out the patterns (that is, guess which numbers are more likely to follow the previous sequence of numbers). Hint: the pattern is based on the previous few numbers.

Do your best!
(Note: If you are more comfortable working with a list instead of a numpy array, you can always transform the 1D array into a list using list() function).