

List of Python exercises 02

- Write a function to count the number of characters (character frequency) in a string.
- Write a function to swap comma and dot in a string.

Sample string: "32.054,23"

Expected Output: "32,054.23"

- Given a list of non-empty tuples, write a function which returns a list of tuples, sorted in ascending order by the last element in each tuple.
- Write a function to generate all permutations of a list in Python.
- Write a function to return a list by concatenating elements of given list and elements of range from 1 to n.

Sample list : ['p', 'q']

n = 5

Sample Output : ['p1', 'q1', 'p2', 'q2', 'p3', 'q3', 'p4', 'q4', 'p5', 'q5']

- Write a function to read a file line by line and store it into a list.
- Write a function to assess if a file is closed or not.
- Write a function to copy the contents of a file to another file.
- Write a function to multiply all the values in a dictionary by some value.
- Write a function to sort a dictionary by key.
- Create a program which will return table with exponents:

```
0 0 0 0 0
0 1 2 3 4
0 2 4 6 8
0 3 6 9 12
0 4 8 12 16
```

- Game time! Let's create a hangman game together

The game should look like this. Separate project into functions and modules, take care of good descriptive names and write comments. You should also put everything to git.

- Computer will randomly choose a word (as a beginning out of 3 options). Also for simplicity use lower case and only words where a letter is used only once. Eg. Mentoring 😊
- Default setting of "status" is a string with that many underscores as there are letters in chosen word.
- Default setting of unsuccessful tries is zero.
- Keep repeating:
 - Ask player for a letter.
 - If the letter is in chosen word, replace in "status" corresponding underscores with letter. Write a function for this.
 - If the letter is not present, add one to unsuccessful tries.
 - Print out the "status" – string with underscores and letters now.
 - If in the strings are no underscores, congratulate to a player and end the game.
 - Print out number of unsuccessful tries and (if you want) print out corresponding picture.
 - If the number of unsuccessful tries is 9 or higher, player loose the game and end the game.

Advanced exercises + algorithms:

- Write a Python program to calculate the harmonic sum of $n-1$.
- Write a Python program to calculate the geometric sum of $n-1$
- Upgrade the hangman game:
 - Make it work for words with more same letters
 - If the player does not pass any letter, do not consider it as a turn
 - After game end, add possibility to play again