

## Home Assignment 1

### The program:

Your program must perform three different tasks in high precision.

- The first task is to count the vowels in a string. For our propose the letter 'y' will always be a vowel.
- The second task is to print the Nth Perfect Power number. Perfect Power numbers are defined in [https://en.wikipedia.org/wiki/Perfect\\_power](https://en.wikipedia.org/wiki/Perfect_power)
- The last task is to print the Nth lazy caterer number. lazy caterer numbers are defined in [https://en.wikipedia.org/wiki/Lazy\\_caterer%27s\\_sequence](https://en.wikipedia.org/wiki/Lazy_caterer%27s_sequence)

### Input using the argparse library:

one string ('task') and another argument ('arg')

### Output:

The answer should be printed to the terminal (use print() function).

### Constraints:

You can **only** use the argparse library.

### Some Examples:

- Running from the terminal: python sample.py --task=vowels--arg=import\_antigravity  
Output: 7
- Running from the terminal: python sample.py --task=vowels--arg="You only killed the bride's father, you know. I didn't mean to. Didn't mean to? You put your sword right through his head. Oh dear... is he all right?"  
Output: 46
- Running from the terminal: python sample.py --task=perfect --arg=1  
Output: 1
- Running from the terminal: python sample.py --task=perfect --arg=15  
Output: 125
- Running from the terminal: python sample.py --task=lazy --arg=37  
Output: 667
- Running from the terminal: python sample.py --task=lazy --arg=94  
Output: 4372

### Pay Attention:

- 'task' can be any string, but only the strings: 'vowels', 'lazy', 'perfect' will operate the program. For any other string, the script will print 'wrong input' and exit.
- 'arg' will be string for the 'vowels' task, and for the other tasks it will be integer between **1 to 100**. Assume the input is correct for 'arg'.
- You should submit a **single .py** file through the Moodle website with the name of **YOUR\_ID\_NUMBER.py** were YOUR\_ID\_NUMBER should be your id number.
- Avoid copying!