Tasks for Lab 3:

Task A

Write a python program (script) which asks for user input by showing the prompt `user input`. It reads the input, does some processing and outputs the message received as input but with the case altered. Example,

user input: da108

case altered: DA108

user input: This course name is Python Programming!

case altered: tHIS COURSE NAMES IS pYTHON pROGRAMMING!

Instead of exiting after giving an output, the program should continue asking for next input. The user gives `q` as input.

Task B

Often while listening to a lecture on youtube we slow down/speed up the playback speed. In this task you will do something similar but with text. The program should work as follows.

$ python task_B.py

user input: Hello! I am Tommy!

output: Hello! ... I ... am ... Tommy!

The program should exit on typing `q`. Save the script as `task_B.py`.

Task C

"Ths tsk wll reqir you t rmove vwels frm a txt."

Hopefully you are were able to understand the above string as:

"This task will require you to remove vowels from a text." This is sometimes fascinating. Our brains can fill in the vowels in a string quite easily. In this task write a script/code which:

- takes user input as a string
- remove vowels from the string (take care if it is single character)
- output the vowel stripped string

The program should exit on typing `q`. Save the script as `task_C.py`.

Task D

Write a python script which takes input as number and outputs the number of bytes the number will require for its binary representation.

The program should exit on typing `q`. Save the script as `task_D.py`.

Task E

Consider a fragment of the DNA sequence provided below. Assign it to a variable in Python and do the following:

- Reverse each 8 length sequence (excluding space)
- Count number of times - “TTACT” has occurred

ATGTACTC ATTCGTTTCG GAAGAGACAG GTACGTTAAT AGTTAATAGC GTACTTCTTT TTCTTGCTTT CGTGGTATTC TTGCTAGTTA CACTAGCCAT CCTTACTGCG CTTCGATTGT GTGCGTACTG CTGCAATATT GTTAACGTGA GTCTTGTAAA ACCTTCTTTT TACGTTTACT CTCGTGTTAA AAATCTGAAT TCTTCTAGAG TTCCTGATCT TCTGGTCTAA

Additional resources:

Go through Unicode and how to use them in Python, example video:

- https://www.youtube.com/watch?v=ut74oHojxqo
