

## DICTIONARY and FOR loop

Rishit found a bae in the insti, now he wanted to chat with her :) but he is not sure whether the messages are private on her end. So, they both decided to talk in coded language, the coding rules are as follows:

1. Some words are decided as keywords which are given in the table below.
2. There would be an in-place replacement of these words in the encrypted string.
3. Words not in the keywords are written in the reverse order like (hello -> olleh), (is->si) ...  
etc For example: "hello i love you" is coded as "olleh jerry plays tom".

meet	cooks
love	plays
you	tom
i	jerry

Now can you write a python code to help Rishit and her bae easily encrypt messages? :)

(All the messages will only contain space-separated words in lowercase )

You Need to design a function that takes in input as the given string and prints the encrypted string.

**INPUT:** A string of messages.

**OUTPUT:** Print the Encrypted message on the Console.

**Submission:** A single Python file containing this function with the name **"Codechat"**.

## NUMPY and Matplotlib

Guramrit wants to know how to perfectly write digits in order to impress the professor and maintain his Institute Rank 1. He has a large set of handwritten digits, as of now he just wants to see the mean of all ten digits. Help him maintain his reputation and he would definitely reward you. Don't forget to take the treat from him xD

**Problem:** You are given an image dataset “**mnist.mat**”.

Data - set: [Handwritten-digits](#)

Steps you have to follow:

1. Load the dataset and convert it into a dictionary. (Look up mat73 module).
2. This dictionary contains 60000 Images in the form of  $(28 * 28 * 60000)$  NumPy array at key “**digits\_train**” and the label of each of these 60000 images (i.e whether the image is the image of 0 or 1 or any other digit) is given at key “**labels\_train**” of the dictionary.
3. Your task is to find the mean array of all the 10 digits and then show all the 10 mean images in a single figure using subplots.

**Submission:** You need to submit the python file and the final image on a link which would be provided later. Hopefully, with your help, Guramrit would maintain his IR-1.