COMP2611 Tutorial #3

1. Consider the following data

Key	Value
76	A
18	B
71	C
1	D
86	E
16	F
45	G
28	H

These keys are integers, and the values are strings. Suppose we want to implement a dictionary using a hashtable with 10 buckets. Show the final state of the hashtable after inserting these values when the following collision resolution techniques are used:

a. Chaining
b. Linear Probing
c. Quadrating Probing
d. Double hashing where $h_2(x) = 3 - (x \bmod 3)$

2. Using the Linear Probing code in the Github Repo as a base, write:
a. A hashtable that implements Quadrating Probing
b. Implements Double hashing, where the secondary hash function is an argument to Hashtable constructor

3. Consider the data provided in definitions.txt. Each line contains a word and its meaning separated by a colon. Write a programme that reads in the definitions in definitions.txt and stores them in Hashtable such that we can access the definitions by their word. You should normalise the strings that you read into your programme by transforming them to lowercase (https://www.tutorialspoint.com/python/string_lower.htm). Your programme should accept input from the user and then display the definition or report that the word was not found.