CS 340 Assignment 3

Due on 14th November

Q3. Implement the basic variant of cuckoo hashing in Python. Note that in the basic variant includes using two hash tables of equal sizes). Using hash1 as hash1(key) = key%11 and hash2(key) = (key/11)%11, Implement:

- search(key)
- insert(key)
- delete(key)
- print_tables() - to print both the hash tables

For your ease, assume that the keys are numeric and the maximum number of keys to be inserted as 11.

Your code should take the keys to be added as an input from the console. Take a look at a sample run of the program: **[100]**

```
Please enter the key(s) that you wish to insert:
20
20 added successfully
Search(20)
20 is present in table1[9]
Delete(20)
Element 20 deleted successfully
```

Helpful resource: https://15445.courses.cs.cmu.edu/fall2018/slides/06-hashtables.pdf **(slides 39-51)**

Please remember that your submissions will be checked for originality. Here a few test cases to get you all started. Your code will be tested on these and a few other test cases. Good luck!

Test cases:

1. Input: 500, 20, 36, 75, 100, 3, 105, 67, 53

   Print_tables() results in: table1: empty 67 empty 3 empty 500 105 empty empty 53 empty

   table 2: empty 20 empty 36 empty empty 75 empty empty 100 empty

2. Input: 20, 50, 53, 75, 100, 67, 105, 3, 36, 39, 6
   - In this example a cycle is present, you will need to rehash the keys. how you do it is up to you.