

1 Hash Tables

The ten most common words in English, along with their hash codes according are as in Table 1.

Order	Word	Hash Code
1	the	114801
2	of	3543
3	to	3707
4	and	96727
5	a	97
6	in	3365
7	is	3370
8	it	3371
9	you	119839
10	that	3558823

Table 1: The ten most common words in English, along with their hash codes.

Task-1: Suppose these strings are inserted into a 14-bucket hash table in the order shown above. Each string's bucket is its hash code modulo 14. If collisions occur, each bucket is implemented as a simple unsorted map, with new items added to the end of the list. Show the contents of all buckets after these strings are inserted. Give each bucket as a bucket number followed by a list of strings, with the head of the list at the left.

Task-2: Suppose these strings are inserted into a 14-bucket hash table in the order shown. Each string's initial bucket is its hash code modulo 14. If collisions occur, use linear probing with a step size of 1. Show the contents of all buckets after these strings are inserted. Give each bucket as a bucket number followed by the string in that bucket, if any.

2 Instructions

Pertaining to the answers of this homework, **correct typing** of superscripts (e.g., n^2) and subscripts (e.g., n_0) **matters**. Due to this reason, this homework may be done on paper and **returned as a PDF** file containing the answer sheet captures (photos, scanned files). If you would like you can use MS Word or Latex, but your deliverable has to be a **single** PDF file. PDF file should be created so that the answers appears in the same order as the questions shown in the homework assignment document.

A Homework-09 page will be generated soon after the start date of this homework. All deliveries should be done over ODTUClass. Please also be aware of the late penalties (Please check the Announcements – Homework and Assignment Policy in ODTUClass if you have not already done so.). Should you have any questions pertaining to homework tasks, please ask them in advance (not on the due date) for your own convenience.