**Sample exercise about hashing**

The following hash-table is produced after a few insertions for a hash table of size 10:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| T(k) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| k | 10 |  | 42 |  | 24 |  |  | 57 |  | 9 |

Show step-by-step how collision problem is resolved using different techniques when are inserted sequentially into the ***original*** hash-table.

[NOTE: For each question, consider the original hash above before answering part (a) through part (d). In other words, each question is INDEPENDENT).

* 1. Separate chaining.
  2. Linear probing.
  3. Quadratic probing.
  4. Double hashing using (R- K mod R with R = 7) as H2(K)