Practical No 1

maintaining a collection of key–value pairs and looking up the value associated with a given key

Linear Probing

$h'(x) = x \ mod \ m$
$h(x, i) = (h'(x) + i) mod \ m$

The value of i| = 0, 1, . . ., m – 1. So we start from i = 0, and increase this until we get one freespace. So initially when i = 0, then the h(x, i) is same as h´(x).

Quadratic Probing:

$h' = (x) = x \ mod \ m$

$h(x, i) = (h'(x) + i2) mod \ m$

We can put some other quadratic equations also using some constants

The value of i = 0, 1, . . ., m – 1. So we start from i = 0, and increase this until we get one free space. So initially when i = 0, then the h(x, i) is same as h´(x).

Practical No 3

Binary Search Tree:

A Binary Search Tree (BST) is a tree in which all the nodes follow the below-mentioned properties −

The left sub-tree of a node has a key less than or equal to its parent node's key.

The right sub-tree of a node has a key greater than or equal to its parent node's key.

left_subtree (keys) ≤ node (key) ≤ right_subtree (keys)

Basic Operation:

- Insert
- search
- Traversal : 1.Inorder(left-root-right)
  2.preOrder(root-left-right)
  3.Postorder(left-right-root)

Practical 4(TBT)

A threaded binary tree is a type of binary tree data structure where the empty left and right child pointers in a binary tree are replaced with threads that link nodes directly to their in-order predecessor or successor, thereby providing a way to traverse the tree without using recursion or a stack.