LAB-11 PROGRAM-10

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Sem: V 'B' section Date: 16/10/2020

Delete(H) & DecreaseKey(H) Function on Binomial Heap.

```
// Decrease Key by new value in Bheap

void decreasekeyBino(Node *H, int old_val,
                                int new_val){
    // 1. Check element is present or not
    // 2. Return if node is not present
    // 3. Reduce value to minimum
    // 4. Update the heap according to reduced
    // value.

Node *node = findNode(H, old_val); // 1
    if (node == NULL)
        return; // 2
    node->val = new_val;
    Node *parent = node->parent; // 3
while (parent != NULL && node->val < parent->val)
{   swap(node->val, parent->val);
        node = parent;
        parent = parent->parent; // 4
    }}
```

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16/12/2020

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// Function to Delete an Element from Binomial Heap

```
Node *bionoDelete (Node *h, int val) {
    // 1. check if heap is empty or not
    // 2. Reduce value to minimum
    // 3. Delete minimum element From Binomial Heap
    if (h == NULL)
        return NULL;  // 1
    decreaseKeyBino (h, val, INT_MIN);  // 2
    return extractMin (h);
}
```

// Function Find Node

```
Node *FindNode (Node *h, int val) {
    if (h == NULL)
        return NULL;
    if (h->val == val)
        return h;
    Node *res = findNode (h->child, val);
    if (res != NULL)
        return res;
    return findNode (h->sibling, val);
}
```


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16/12/2000.