

## Program 10

```

void decreaseKey (Node *H, int old_val,
                  int new_val)
{
    Node *node = findNode (H, old_val);
    if (node == NULL)
        return;
    node->val = new_val;
    Node *parent = node->parent;
    while (parent != NULL && node->val < (parent->val))
    {
        Swap (node->val, parent->val);
        node = parent;
        parent = parent->parent;
    }
}

```

## ii) delete(H)

```

Node *del (Node *H, int val)
{
    if (H == NULL)
        return NULL;
    decreaseKey (H, val, INT_MIN);
    return extractMinBheap(H);
}

```

```

Node *findNode (Node *h, int val)
{
    if (h == NULL) return NULL;
    if (h->val == val)
        return h;
}

```

```

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);
```

```
}
```

```
int binomialLink (Node *h1, Node *h2)
```

```
{
```

```
    h1->parent = h2;
```

```
    h1->sibling = h2->child;
```

```
    h2->child = h1;
```

```
    h2->degree = h2->degree + 1;
```

```
}
```