

```
struct Node {
```

```
    int val, degree;
```

```
    Node* parent, *child, *sibling;
```

```
    int key
```

```
Node() {
```

```
    val = key;
```

```
    degree = 0;
```

```
    child = sibling = parent = NULL;
```

```
}
```

```
};
```

```
void decreaseKeyBHeap(Node* H, int old, int new) {
```

```
    Node* node = FindNode(H, old);
```

```
    if (node == NULL)
```

```
        return;
```

```
    node->val = new - val;
```

```
    Node* parent = node->parent;
```

```
    while (parent && parent->val > node->val) {
```

```
        swap(node->val, parent->val);
```

```
        node = parent;
```

```
        parent = parent->parent;
```

```
    }
```

```
}
```

```
Node* heapDelete(Node* h, int val) {
```

```
    if (!h)
```

```
        return NULL;
```

```
    decreaseKeyBHeap(h, val, INT_MIN);
```

```
    return extractMinBHeap(h);
```

```
}
```