

~~void~~

```
class B_treenode {
```

```
    int *keys;
```

```
    int m;
```

```
    B_treenode **child;
```

```
    int n;
```

```
    bool leaf;
```

```
}
```

```
friend class B_tree {
```

```
    B_treenode *root;
```

```
    int m;
```

```
    void insert(int k)
```

```
}
```

```
void B_tree::insert(int k)
```

```
{    int i;
```

```
    if root == NULL
```

```
    {    root = new B_treenode(m, true);
```

```
        root->keys[0] = k
```

```
        root->n = 1;
```

```
    }
```

```
    else {
```

```
        if (root->n == 2 * m - 1)
```

```
        {
```

```
            B_treenode *t = new B_treenode(m, false);
```

```
            t->child[0] = root;
```

```
            t->split(a root);
```

```
            i = 0;
```

```
            if (t->keys[0] < k)    i++;
```

```
t → child[i] → insertnonfull(k);
```

```
root = t;
```

```
}
```

```
else
```

```
root → nonfullinsert(k);
```

```
}
```

```
}
```

```
void nonfullinsert(int k)
```

```
{ int i = n-1;
```

```
  if (leaf == true)
```

```
  { while (keys[i] > k && i >= 0)
```

```
  {
```

```
    keys[i+1] = keys[i];
```

```
    i --;
```

```
  }
```

```
  keys[i+1] = k;
```

```
  n = n+1;
```

```
}
```

```
else { while (keys[i] > k && i >= 0) i --;
```

```
  if (child[i+1] → n == 2(m)-1)
```

```
  {
```

```
    split(i+1, child[i+1]);
```

```
    if (keys[i+1] < k)
```

```
      i ++;
```

```
  }
```

```
  child[i+1] → nonfullinsert(k);
```

```
}
```

```
}
```