

22

WK 48 - 327-039

NOVEMBER 2016
TUESDAY

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			
Su	M	T	W	T	F	S

NOVEMBER 2016

ADS

IBML915401

Arbax Ahmad

11/11/20/wed

B-Tree Insertion

class BTreeNode {

```

    int *key;
    int t, n;
    BTreeNode *C;
    bool leaf;
}

```

BTreeNode (int T, bool leaf)

```

{
    int t = T;
    keys = new int [t-1];
    C = new BTreeNode * [2*t];
    n = 0;
}

```

*void insert (int k)

```

if (root == null) {
    root = new BTreeNode (t, true);
    root->keys[0] = k;
}

```

```

else {
    root->n = 1;
}

```

```

if (root->n == 2*t-1) {

```

BTreeNode *S = new BTree(t, false);

S->L[0] = root

S->splitChild(0, root);

cnt P=0;

if (S->Keys[0] < K)

S->C[P] = insertNonFull(K);

root = S;

} else {

root->insertNonFull(K);

insertNonFull(cnt, K) {

int i = n-1;

if (leaf == true) {

while (i > 0 && Keys[i] > K) {

Keys[i+1] = Keys[i];

i--;

}

Keys[i+1] = K;

n = n+1;

} else { while (i > 0 && Keys[i] > K)

i--;

24

WK 48 - 329-037

NOVEMBER 2016

THURSDAY

	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30					
Su	M	T	W	T	F

if $(C[i+1] \rightarrow n == 2^{*}t-1)$

splitchild $(i+1, C[i+1]);$

if $(\text{lays}(i+1) < k)$

$i++;$

}

$C[i+1] \rightarrow \text{insertNonFull}(k);$

}

* splitchild (int i, BTreeNode *y)

BTreeNode *z = new BTreeNode(y->t, y->leaf);

z->n = t-1;

for (int j=0; j<t-1; j++)

z->lays[j] = y->lays[j+t];

if (y->leaf == false) {

for (j=0; j<t; j++)

z->C[j] = y->C[j+t];

y->n = t-1;

for (j=n; j>=i+1; j--)

C[j+1] = C[j];

	1	2	3	4
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28	29	30	31
T	W	T	F	Su

2016 NOVEMBER
FRIDAY

25

330-036 WK 48

$C(P+1) = Z$

for $(j = n-1 ; j \neq 0 ; j--)$

$Keys[j+1] = Keys[j];$

$Keys[i] = j \rightarrow Keys[j];$

$n = n+1;$

}