



CS202

HW No. 4

Section No. 02

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22101310

Inserting 7 into AVL tree:

```
7
```

Inserting 91 into AVL tree:

```
7
 \
 91
```

Inserting 3 into AVL tree:

```
7
 / \
3  91
```

Inserting 24 into AVL tree:

```
7
 / \
3  91
   /
  24
```

Inserting 12 into AVL tree:

```
7
 / \
3  24
   / \
  12 91
```

Inserting 33 into AVL tree:

```
24
 / \
7  91
 / \ /
3 12 33
```

Inserting 45 into AVL tree:

```
24
 / \
7  45
 / \ / \
3 12 33 91
```

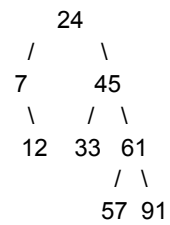
Inserting 61 into AVL tree:

```
24
 / \
7  45
 / \ / \
3 12 33 91
      /
     61
```

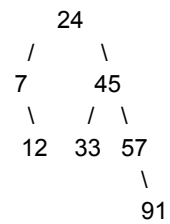
Inserting 57 into AVL tree:

```
24
 / \
7  45
 / \ / \
3 12 33 61
      / \
     57 91
```

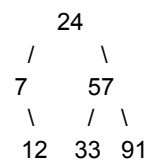
Deleting 3 from AVL tree:



Deleting 61 from AVL tree:



Deleting 45 from AVL tree:



Inserting 7 into 2-3 tree:

7

Inserting 91 into 2-3 tree:

7|91

Inserting 3 into 2-3 tree:

```

  7
 / \
3  91
  
```

Inserting 24 into 2-3 tree:

```

  7
 / \
3 24|91
  
```

Inserting 12 into 2-3 tree:

```

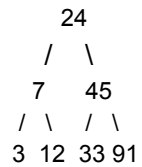
  7|24
 / | \
3 12 91
  
```

Inserting 33 into 2-3 tree:

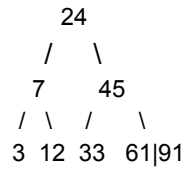
```

  7|24
 / | \
3 12 33|91
  
```

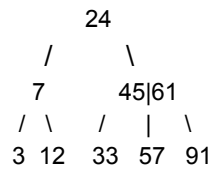
Inserting 45 into 2-3 tree:



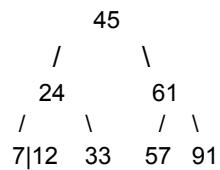
Inserting 61 into 2-3 tree:



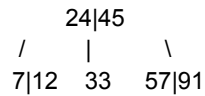
Inserting 57 into 2-3 tree:



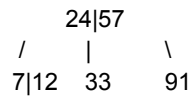
Deleting 3 from 2-3 tree:



Deleting 61 from 2-3 tree:



Deleting 45 from 2-3 tree:



Inserting 7 into 2-3-4 tree:

7

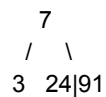
Inserting 91 into 2-3-4 tree:

7|91

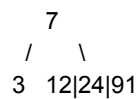
Inserting 3 into 2-3-4 tree:

3|7|91

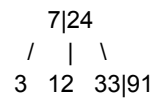
Inserting 24 into 2-3-4 tree:



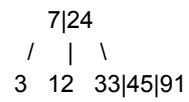
Inserting 12 into 2-3-4 tree:



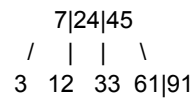
Inserting 33 into 2-3-4 tree:



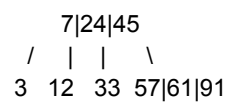
Inserting 45 into 2-3-4 tree:



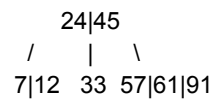
Inserting 61 into 2-3-4 tree:



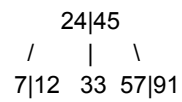
Inserting 57 into 2-3-4 tree:



Deleting 3 from 2-3-4 tree:



Deleting 61 from 2-3-4 tree:



Deleting 45 from 2-3-4 tree:

