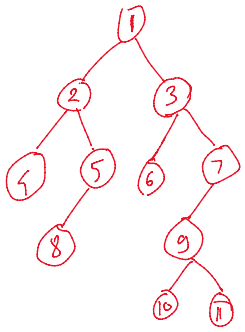
Day 28 - Binary Tree

14 September 2022 10:32

height = 5

Breadth first Traversal

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



← 1 ← → 1

← 2 ← → 2, 3

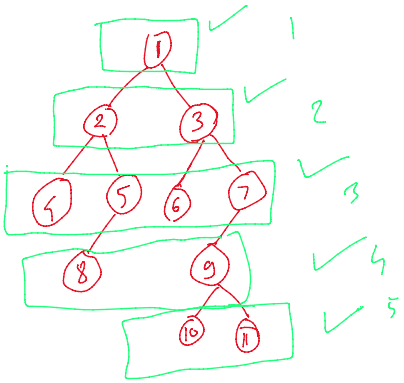
← 3 ← → 4, 5, 6, 7

→ 8, 9

← 4 ←

→ 10, 11

← 5 ←



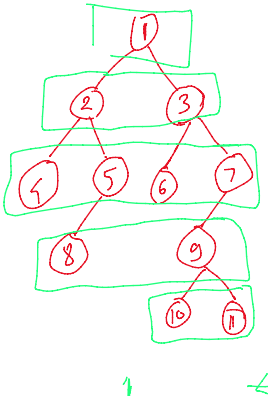
queue

Push()

Pop() ←

```
q.push(root);
while(!q.empty()){
Node* n = q.front()
Print(n)
q.pop()
if(left) Push(left);
if(right) Push(right);
}
```

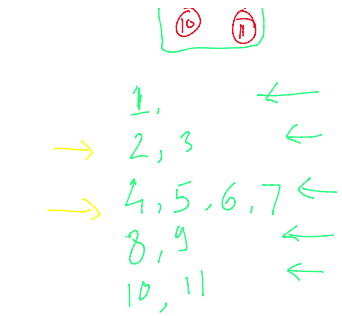
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

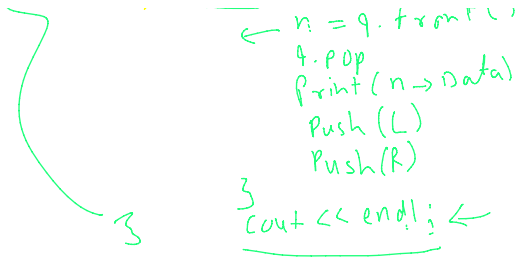


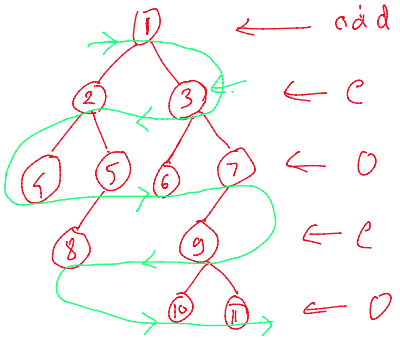
Pop ←

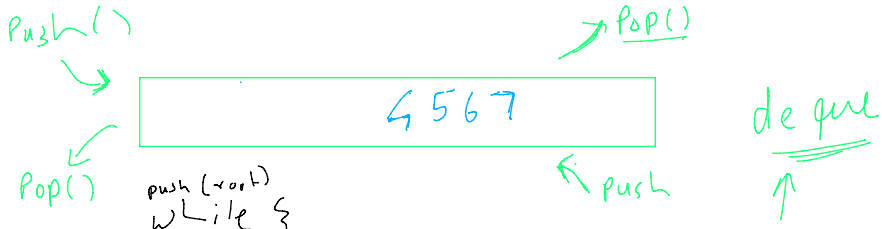
```
Push(root)
while(!q.empty()){
  s = q.size = 2
  for(0 → 2){
    n = q.front()
    q.pop
    Print(n->Data)
```

O(n)










```
push (root)
while {
    s = q.size()
    for (0 -> s) {
        if (L == odd)
            n = front(); Pop_front();
            Print (n)
            Push_Back (L)
            Push_Back (R)
        else (even)
            n = Back(); Pop_back();
            Print (n)
            Push_front (R)
            Push_front (L)
    }
    Level ++;
}
```

1, 3, 2, 4, 5, 6, 7, 9, 8, 10, 11