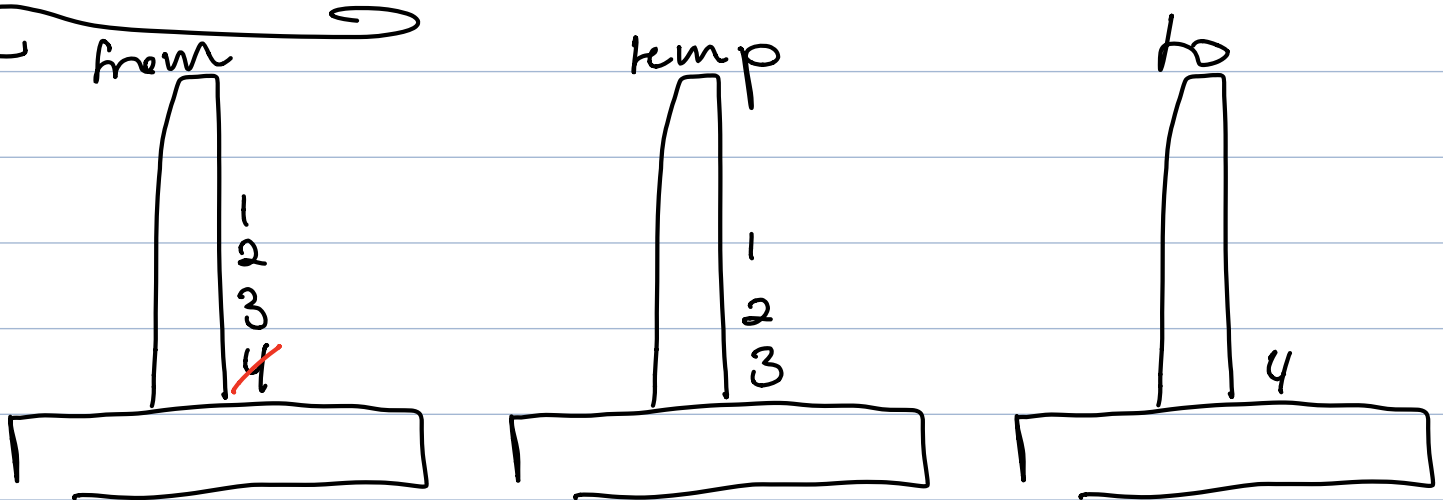
CECS 274 FINAL REVIEW

Recursion:
- What does the recursion output? (Reading rec. fn.)
- Three char. of recursive fn.? (CECS 274)

- Write a recursive fn for some problem
- Assignment 8 (Check solution online)

Binary Search Tree:
- Def of Binary Tree:
- Def of BST:
- Pre, In, Post Order traversals + code
- Ass. 9 (except removal)

Towers of Hanoi



Tower 1 Tower 2 Tower 3

Solve for n rings from T1 to T3

① Solve n-1 rings from 1 to 2

② Move 1 ring from 1 to 3

③ Solve n-1 rings from 2 to 3

```
public void Towers(int nRings)
{
   towerOne = new Stack<Integer>();
   towerTwo = new Stack<Integer>();
   towerThree = new Stack<Integer>();
   for(int i = nRings; i>0; i--)
   {
    towerOne.push(i);
   }
   solve(nRings, towerOne, towerThree, towerTwo);

}

private void solve(int nRings, Stack<Integer> from, Stack<Integer> to, stack<Integer> tmp)
```

```
{
  if (nRings == 1) move (from, to);
  else {
    solve(nRings-1, from, temp, to);
    move (from, to);
    solve (nRings-1, temp, to, from);
   }
}
public void move (Stack<Integer> f, Stack<Integer> t)
{
   t.push (f.pop());
}

private Stack<Integer> towerOne;
private Stack<Integer> towerTwo;
private Stack<Integer> towerThree;
```