

```

public class MandC {
    int ML, MR, CL, CR, B; //B=0 means boat on left, B=1 means right

    public MandC(){ ML=3; MR=0; CL=3; CR=0; B=0; }

    public boolean goal(){if (MR==3) && (CR==3) return true;
                        else return false;

    public void move1M() {
        if (B==0) { //left
            if (ML>1 && ML >= CL+1) //legal
                { B=1; ML--; MR++; }
            else if (ML==1)
                { ML--; MR++; B=1; }}
        if (B==1) { //right
            if (MR>1 && MR >= CR+1) //legal
                { B=0; MR--; ML++; }
            else if (MR==1)
                { MR--; ML++; B=0; }}

    public void move2M() {}
    public void move1M1C() {}
    public void move1C() {}
    public void move2C() {}
}

```

```

public class 8Puzzle{
    int [][]board; int row,col; //where the blank is

    public 8Puzzle() {
        board = new int[3][3];
        row=2; col=2;
        board[0][0] = 7;
        board[1][0] = 3;
        ...}

    public boolean goal() {
        if (board[0][0] ==7 && board[1][0]==6 && ... then return true;
        else return false;

    public moveup(){
        if (row < 2) {
            board[row][col] = board[row+1][col];
            board[row+1][col] = 0; row=row+1; }
    public movedown() {}
    public moveright() {}
    public moveleft() {}

}

```