import java.util.\*;

import java.io.\*;

class LongestPath{

public static class Node{

Node left,right;

int data;

}

public static Node newNode(int val){

Node t = new Node();

t.data = val;

t.left = t.right = null;

return t;

}

public static ArrayList<Integer> longestPath(Node root){

if(root == null){

ArrayList<Integer> res = new ArrayList<Integer>();

return res;

}

ArrayList<Integer> left = longestPath(root.left);

ArrayList<Integer> right = longestPath(root.right);

if(left.size() > right.size()){

left.add(root.data);

}

else{

right.add(root.data);

}

if(left.size() > right.size()){

return left;

}

return right;

}

public static void main(String args[]){

Node root = newNode(1);

root.left = newNode(4);

root.right = newNode(5);

root.left.left = newNode(3);

root.left.right = newNode(2);

root.left.right.right = newNode(6);

ArrayList<Integer> ans = longestPath(root);

int n = ans.size();

for(int i=n-1;i>=1;i--){

System.out.print(ans.get(i)+" -> ");

}

System.out.print(ans.get(0));

}

}