class Main {

static Node head = null;

static Node tail = null;

static class Node {

Node prev;

int data;

Node next;

Node(int val) {

prev = null;

data = val;

next = null;

}

}

public static void insert(int val) {

Node newNode = new Node(val);

if (head == null) {

head = newNode;

tail = newNode;

} else {

tail.next = newNode;

newNode.prev = tail;

tail = newNode;

}

}

public static void insertAtPosition(int x, int pos) {

Node newNode = new Node(x);

if (pos == 0) {

newNode.next = head;

if (head != null) {

head.prev = newNode;

}

head = newNode;

} else if (tail == null) {

head = newNode;

tail = newNode;

} else {

Node current = head;

int index = 0;

while (index < pos - 1 && current != null) {

current = current.next;

index++;

}

if (current == null) {

newNode.prev = tail;

tail.next = newNode;

tail = newNode;

} else {

newNode.next = current.next;

if (current.next != null) {

current.next.prev = newNode;

}

current.next = newNode;

newNode.prev = current;

if (current == tail) {

tail = newNode;

}

}

}

}

public static void display() {

Node temp = head;

while (temp != null) {

System.out.print(temp.data + " ");

temp = temp.next;

}

System.out.println();

}

public static void main(String[] args) {

insert(10);

insert(20);

insert(30);

display();

insertAtPosition(15, 0);

display();

}

}