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package stack;

class Node {

int data ;

Node next ;

public Node (int i) {

//A constructor to initialize members data and next

this.data=i;

this.next=null;

}

public void display () {

//A method to display the data in the node

System.out.print(data);

}

}

class Stack {

private Node top ; // holds a reference to the top node

public Stack () {

this.top=null;

}

public boolean isEmpty () {

// A method to check the stack is empty or not

return (top==null);

}

public void push (int i) {

// A method to push an `int ' i onto the stack

Node add=new Node(i);

add.next=this.top;

top=add;

}

public Node pop () {

//A method to remove the top node and returns the reference of the removed node

Node temp=top;

top=top.next;

return temp;

}

public int peek () {

//A method to peek the top node

if(top!=null)

{

return top.data;

}

else{

return 0;

}

}

public void displayStack()

{

Node current = top;

while(current != null)

{

current.display();

current = current.next;

}

System.out.println("");

}

public static void main(String[]args)

{

//main method to run

DecimalToBinary db1=new DecimalToBinary(25);

db1.tobinary();

db1.display();

}

}

class DecimalToBinary {

private int deci;

Stack bin=new Stack();

public DecimalToBinary(int i){

this.deci=i;

}

public void tobinary()

{

//convert decimal to binary

int value=deci;

while(value!=0)

{

bin.push(value%2);

value=value/2;

}

}

public void display()

{

System.out.println("Binary value of " + deci +" is " );

bin.displayStack();

}

}