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Національний університет «Львівська політехніка»

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Лабораторна робота №11

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```
class
Node<T>{
                private Node<T> next;
                private Object data;


                public Node<T> getNext() {
                    return next;
                }
                public void setNext(Node<T> next) {
                    this.next = next;
                }
                public Object getData() {
                    return data;
                }
                public void setData(Object data) {
                    this.data = data;
                }
            }
            public class ElevenLab<T> {
                private Node<T> head;
                private Node<T> tail;
                public ElevenLab() {
                }


                public void add(Object data) {
                    Node<T> node = new Node<T>();
                    node.setData(data);
                    if (head == null) {
                        head = node;
                        tail = node;
                    }
                    else {
                        tail.setNext(node);
                        tail = node;
                    }
                }


                public Object get(int index) {
                    Node<T> current = head;
                    if(current == null)
                        return null;
                    if(index > size()){
                        return null;
                    }
```

```
        for (int i=0; current!=null && i <
index; i++){
            current = current.getNext();
        }
        return current.getData();
    }


    public boolean delete(int index) {
        Node<T> previous = null;
        Node<T> current = head;
        int i;
        for (i=1; current!=null && i <=
index; i++){
            previous = current;
            current = current.getNext();
        }
        if (i-1 == index) {
            if (previous != null) {

previous.setNext(current.getNext());
                if (current.getNext() ==
null) {
                    tail = previous;
                }
            }
            else {
                head = head.getNext();
                if (head == null) {
                    tail = null;
                }
            }
            return true;
        }
        return false;
    }


    public int size() {
        Node<T> current = head;
        int i = 0;
        for (; current!=null; i++){
            current = current.getNext();
        }
        return i;
    }
    public void clear(){
```

```
        head.setNext(null);
        head.setData(null);
        head = null;
    }
    public Object[] toArr(){
        Object arr[] = new Object[size()];
        Node<T> current = head;
        for (int i = 0; current!=null; i++){
            arr[i] = current.getData();
            current = current.getNext();
        }
        return arr;
    }
    @Override
    public String toString(){
        String str = "";
        Node<T> current = head;
        for (int i = 0; current!=null; i++){
            str +=
current.getData().toString();
            current = current.getNext();
        }
        return str;
    }


    public boolean isExist(Object value){
        Node<T> current = head;
        for (int i = 0; current!=null; i++){

if(value.equals(current.getData()))
                return true;
            current = current.getNext();
        }
        return false;
    }


    public static void main(String[] args) {
        TradePoint firstPoint = new
TradePoint("Adress", "Name", 123,
"Programmer");
        TradePoint secondPoint = new
TradePoint("strett", "Point Name", 456,
"Lazier");
        ElevenLab<TradePoint> list = new
ElevenLab<>();
```

```
        list.add(firstPoint);
        list.add(secondPoint);

System.out.println(list.isExist(firstPoint));
        System.out.println(list);
        System.out.println(list.delete(1));
        System.out.println(list);
        System.out.println(list.size());
        list.clear();
        System.out.println(list);
        System.out.println(list.size());
    }
}
```