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public class HashTable<T> {

    int length;

    Object[] table;

    int cont;

    //double fullFactor;

    HashTable(){

        // si el numero de la tabla es primo es mejor
        length = 101;

        table = new Object[length];

        cont = 0;

    }

    HashTable(int length){

        this.length = length;

        table = new Object[length];

        cont = 0;

    }

    public int size(){

        return cont;

    }

    // checar si es mejor dejar la funcion aqui adentro o mejor como metodo externo

    /*private int fnHash(T elem){

        return 0;

    }*/

    public void add(T elem, double clave){

        cont++;

        /*if(cont/length > fullFactor)

            increase();*/

        //int pos = fnHash(elem) % length;

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int pos = (int)(clave % length);

HashNode<T> temp = (HashNode<T>) table[pos];

HashNode<T> novo = new HashNode<T>(elem);

novo.setNext(temp);

table[pos] = novo;
}

/*private void increase(){

HashNode<T>[] aux = (HashNode<T>[]) new Object[2*length];

HashNode<T> actual, auxNode, next;

int newPos;

for(int i = 0; i<length; i++){

actual = (HashNode<T>)table[i];

while(actual != null){

newPos = fnHash(actual.getElem()) % aux.length;

auxNode = aux[newPos];

next = actual.getNext();

actual.setNext(auxNode);

aux[newPos] = actual;

actual = next;

}

}

table = aux;

length*=2;

}*/

public boolean find(T elem, double clave){

HashNode<T> actual;

//int pos = fnHash(elem) % length;

int pos = (int)(clave % length);

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    actual =(HashNode<T>) table[pos];
    while (actual != null && !actual.elem.equals(elem))
        actual = actual.getNext();
    return actual != null;
}

private HashNode<T> findNode(T elem, double clave){
    HashNode<T> actual, previous;
    //int pos = fnHash(elem) % length;
    int pos = (int)(clave % length);
    actual = (HashNode<T>) table[pos];
    previous = (HashNode<T>) table[pos];
    while (actual != null && !actual.elem.equals(elem)){
        previous = actual;
        actual = actual.getNext();
    }
    if (actual == null)
        return null;
    else
        return previous;
}

public void delete(T elem, double clave){
    HashNode<T> preFind = findNode(elem, clave);
    if (preFind != null){
        HashNode<T> toDelete = preFind.getNext();
        preFind.setNext(toDelete.getNext());
        toDelete.setNext(null);
        cont--;
    }
}

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public double promColisiones(){
    double prom = 0;
    if(this.size()==0)
        return 0;
    else{
        for(int i = 0; i<table.length; i++){
            prom+=conteoColisiones(i);
        }
        return prom/table.length;
    }
}

public int conteoColisiones(int pos){
    HashNode<T> actual =(HashNode<T>) table[pos];
    int cont = -1;
    while(actual != null){
        cont++;
        actual = actual.getNext();
    }
    return cont;
}

public double getFullFactor(){
    return this.size()/table.length;
}

}

```