

```

//Handles the case with case sensitivity too. 😊
import java.util.*;
public class MovieFlex {
    public static void main(String[] args) {
        char c = '!';
        String s = c + "!" + c;
        System.out.println("add movies to MovieFlex, enter " + s + "
to terminate");
        MovieHT mht1 = new MovieHT();
        Scanner scan = new Scanner(System.in);
        while(true) {
            String currentLine = scan.nextLine();
            if(currentLine.equals("!")) break;
            mht1.insertMovie(currentLine);
        }
        mht1.showHashTableContents();
        scan.close();
    }
}

class MovieHT{

    public MovieHT() {
        for(int i = 0; i < 13; i++) {
            movieArr[i] = new MovieList();
        }
    }
    MovieList[] movieArr = new MovieList[13];
    HashSet<String> alreadyInTheMap = new HashSet<>();
    public int computeHashValue(String movieName) {
        int totalScore = 0;
        int endingChar = (movieName.length() >= 6) ? 6 :
movieName.length();
        for(int i = 0; i < endingChar; i++) {
            int multiplier = (int) Math.pow(3, i);
            totalScore += ((movieName.charAt(i) - 0)*multiplier);
        }
        return (totalScore%13);
    }

    public void insertMovie(String movieName) {
        if(alreadyInTheMap.contains(movieName.toLowerCase())) {
            System.out.println("movie already exists");
            return;
        }
    }
}

```

```

        alreadyInTheMap.add(movieName.toLowerCase());
        int indexToInsert = computeHashValue(movieName);
        movieArr[indexToInsert].AddToStart(movieName);
    }

    public void showHashTableContents() {
        System.out.println("=====\n");
        for(int i = 0; i < 13; i++) {
            System.out.println("index " + i + " has");
            if(movieArr[i].size() == 0) {
                System.out.println("empty");
            }
            else{
                movieArr[i].displayContents();
            }
            int collisions = (movieArr[i].size() - 1) <= 0 ? 0 :
(movieArr[i].size() - 1);
            System.out.println(collisions + " collisions");
            if(i == 12) {
                break;
            }
            System.out.println();
        }
    }

    class MovieList{
        private MovieNode head = null;
        @SuppressWarnings("unused")
        private MovieNode tail = null;
        private int size = 0;

        class MovieNode{
            private MovieNode next;
            private String name;

            public MovieNode(String name, MovieNode nxt) {
                next = nxt;
                this.name = name;
            }
        }

        public void AddToStart(String movieName) {
            head = new MovieNode(movieName, head);
            size += 1;
        }
    }

```

```
public void AddAtEnd(String movieName) {
    size += 1;
    MovieNode temp = head;
    if(temp == null) {
        head = new MovieNode(movieName, null);
        return;
    }
    while(temp.next != null) {
        temp = temp.next;
    }
    MovieNode newNode = new MovieNode(movieName, null);
    temp.next = newNode;
}

public void displayContents() {
    MovieNode temp = head;
    if(temp != null) System.out.print(temp.name);
    while(temp.next != null) {
        System.out.print(", " + temp.next.name);
        temp = temp.next;
    }
    System.out.println();
}

public int size() {
    return size;
}

public boolean contains(String movieToSearch) {
    MovieNode temp = head;
    while(temp != null &&
!temp.name.equals(movieToSearch)) {
        temp = temp.next;
    }
    if(temp == null) return false;
    return true;
}
}
```

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The screenshot shows the Eclipse IDE with a Java project named 'comp6481'. The main editor displays the 'try.java' file, which contains a Java program. The program defines a 'MovieHT' class with methods for inserting movies into a hash table and displaying its contents. The console on the right shows the output of the program, listing movies and their collision counts. A 'Judge's Response' dialog box is open in the foreground, displaying the problem name 'Movie_Flex', the language 'Java', the run ID '60', and the judge's response 'Yes'.

```
7      MovieHT mht1 = new MovieHT();
8      Scanner scan = new Scanner(System.in);
9      while(true) {
10         String currentLine = scan.nextLine();
11         if(currentLine.equals("!")) break;
12         mht1.insertMovie(currentLine);
13     }
14     mht1.showHashTableContents();
15     scan.close();
16 }
17
18 class MovieHT{
19
20
21     public MovieHT() {
22         for(int i = 0; i < 13; i++) {
23             movieArr[i] = new MovieList();
24         }
25     }
26     MovieList[] movieArr = new MovieList[13];
27     HashSet<String> alreadyInTheMap = new Hash
28     public int computeHashValue(String movieNa
29     int totalScore = 0;
30     int endingChar = (movieName.length() >
31     for(int i = 0; i < endingChar; i++) {
32         int multiplier = (int) Math.pow(3,
33         totalScore += ((movieName.charAt(i
34     )
35     return (totalScore%13);
36 }
37
38     public void insertMovie(String movieName)
39     if(alreadyInTheMap.contains(movieName)
40         System.out.println("movie already
41         return;
42     }
43     alreadyInTheMap.add(movieName.toLowerCase());
44     int indexToInsert = computeHashValue(movieName);
45     movieArr[indexToInsert].AddToStart(movieName);
46 }
47
48     public void showHashTableContents() {
49         System.out.println("=====n");
50         for(int i = 0; i < 13; i++) {
51             System.out.println("index " + i + " has");
52             if(movieArr[i].size() == 0) {
53                 System.out.println("empty");
```

0:42
Submit Run View Run Judgement Received X Options
Problem: Movie_Flex
Language: Java
Main File: G:\workspace\comp6481\src\try.java
Additional Files:
Run Id: 60
Judge's Response: Yes
OK Submit

index-2 has
Speed 2
0 collisions
index 3 has
Saving Private Ryan, Jurassic Park, Groundhog Day, The Lord of the Rings, Fly Me to
4 collisions
index 4 has
Wall-E
0 collisions