```java
import java.util.List;

/**
 *  Creates a Hash Table
 *
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 *  @date    2016-04-14
 */

public class HashTable2 {

    /**
     *  Create an object of the HashTable class.
     */

    private int MaxSize;
    private HashEntry[] HTable;
    private int Function;
    private int Modulo;
    private int CollisionCount, CollisionNum;

    public HashTable2()
    {
        CollisionCount = 0;
        CollisionNum = 0;
    }

    public void RunHashTable(List<Integer> Items, int size, int function, int modulo)
    {
        System.out.println("\nEntered Hash Table method.");
        Function = function;
        MaxSize = size;
        Modulo = modulo;
        System.out.println("Probe Type: Chaining Modulo: " + modulo);
        HTable = new HashEntry[MaxSize];
        for (int i = 0; i < MaxSize; i++)
        {
            HTable[i] = null;
        }
        for (int key : Items)
        {
            insert(key, hash(key));
        }
        printHashTable();
    }

    /** Function to get hash code of a given Key **/
    private int hash(int Key)
    {
        if (Function == 1)
        {
            return Key % Modulo;
        }
        else if (Function == 2)
        {
            return (Key^2) % Modulo;
        }
        else
        {
```

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            System.out.println("Invalid Value for Hash Function.");
            return 0;
        }
    }

    /** Function to insert Key-value pair **/
    private void insert(int Key, int Hash)
    {
        int HashVal = Hash;
        if (HTable[HashVal] == null)
        {
            HTable[HashVal] = new HashEntry(Key);

        }
        else
        {
            CollisionCount++;
            CollisionNum++;
            HashEntry Entry = HTable[HashVal];
            while (Entry.getNext() != null)
            {
                CollisionNum++;
                Entry = Entry.getNext();
            }
            Entry.setNext(new HashEntry(Key));
        }
    }

    /** Function to print HashTable **/
    private void printHashTable()
    {
        int counter = 0;
        boolean flag;
        System.out.println("\nHash Table: ");
        for (int i = 0; i < MaxSize; i++)
        {
            if (HTable[i] == null)
            {
                if (counter == 4)
                {
                    System.out.print("\n Index: " + i + " Value: Null");
                    counter = 0;
                }
                else
                {
                    System.out.print(" Index: " + i + " Value: Null");
                    counter++;
                }
            }
            else
            {
                HashEntry Entry = HTable[i];
                flag = false;
                if (Entry.getNext() != null)
                {
                    while (Entry.getNext() != null)
                    {
                        if (counter == 4)
                        {
```

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119                             System.out.print("\n Index: " + i + " Value: " +
    Entry.getKey());
120                             counter = 0;
121                             flag = true;
122                         }
123                         else
124                         {
125                             if (flag == false)
126                             {
127                                 System.out.print(" Index: " + i + " Value: " +
    Entry.getKey());
128                                 counter++;
129                                 flag = true;
130                             }
131                             else
132                             {
133                                 System.out.print(" Value: " + Entry.getKey());
134                                 counter++;
135                             }
136                         }
137                         Entry = Entry.getNext();
138                     }
139                 }
140                 else
141                 {
142                     if (counter == 4)
143                     {
144                         System.out.print("\n Index: " + i + " Value: " +
    Entry.getKey());
145                         counter = 0;
146                         flag = true;
147                     }
148                     else
149                     {
150                         System.out.print(" Index: " + i + " Value: " +
    Entry.getKey());
151                         counter++;
152                         flag = true;
153                     }
154                 }
155             }
156         }
157         System.out.print("\nNumber of Collision: " + CollisionCount);
158         System.out.print("\nTotal Number of Collision: " + CollisionNum);
159     }
160 }
```