```java
import java.util.Scanner;

public class Optimal {
    public static void main(String args[]) {
        int ref[], frame[];
        int n, m, j = 0, hit = 0, miss = 0, list = 0;

        Scanner it = new Scanner(System.in);

        System.out.println("Enter the string size : ");
        n = it.nextInt();

        System.out.println("Enter the frame size : ");
        m = it.nextInt();

        ref = new int[n];
        frame = new int[m];

        for (int i = 0; i < m; i++) {
            frame[i] = -1;
        }

        System.out.println("Enter the reference string : ");
        for (int i = 0; i < n; i++) {
            ref[i] = it.nextInt();
        }

        System.out.print("\nReference string : ");
        for (int i = 0; i < n; i++) {
```

```java
        System.out.print(ref[i] + " ");

    }


    System.out.println("\n\n-------------------------Optimal--------------------------\n");


    int u = n;

    int flag = 0;

    int i = 0;

    int d = -1;

    int max;

    int set = 0;

    int f = 0;

    int common = 0;

    int rp = 0;


    while (f < m) {

        for (int k = 0; k < m; k++) {

            if (ref[j] == frame[k]) {

                set = 1;

            }

        }


        if (set != 1) {

            frame[f] = ref[j];

            f++;


            System.out.print("[" + ref[j] + "]   ");


            for (int a = 0; a < m; a++) {
```

```java
                System.out.print(frame[a] + " |");
            }


            System.out.print("     <---Miss\n");

            j++;

        } else {
            set = 0;
            hit++;


            System.out.print("[" + ref[j] + "]   ");


            for (int a = 0; a < m; a++) {
                System.out.print(frame[a] + " |");
            }


            System.out.print("     <---Hit\n");

            j++;
        }

    }


    while (j < n) {

        System.out.print("[" + ref[j] + "]   ");


        for (int b = 0; b < m; b++) {
            if (j < n && ref[j] == frame[b]) {
                flag = 1;
```

```java
            hit++;
        }
    }


    max = Integer.MIN_VALUE;
    int c;


    for (int a = 0; a < m; a++) {
        for (c = j + 1; c < n; c++) {
            if (frame[a] == ref[c]) {
                d = c;
                break;
            }
        }


        if ((max < d && d != -1) && c != n && common != 1) {
            max = d;
            rp = a;
        }


        if (c == n && common != 1) {
            rp = a;
            common = 1;
        }
        c = j + 1;
    }


    if (flag != 1) {
        frame[rp] = ref[j];
```

```java
            for (int a = 0; a < m; a++) {

                System.out.print(frame[a] + " |");

            }


            System.out.print("      <---Miss\n");
        } else {
            flag = 0;


            for (int a = 0; a < m; a++) {

                System.out.print(frame[a] + " |");

            }


            System.out.print("      <---Hit\n");
        }


        j++;
        common = 0;


    }


    System.out.println("\nTotal Hits : " + hit);
    System.out.println("Total Miss : " + (n - hit));


    System.out.print("\n--------------------------------------------------------");
  }

}
```