代码

一：班长

```
import java.util.*;

public class Main {

    static int[] fa;

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int m = sc.nextInt();
        fa = new int[n + 1];
        for (int i = 1; i <= n; i++) {
            fa[i] = i;
        }
        for (int i = 0; i < m; i++) {
            int type = sc.nextInt();
            if (type == 1) {
                merge(sc.nextInt(), sc.nextInt());
            } else if (type == 2) {
                int a = sc.nextInt();
                int root = find(a);
                fa[a] = a;
                fa[root] = a;
            } else {
                System.out.println(find(sc.nextInt()));
            }
        }
    }

    public static void merge(int x, int y) {
        fa[find(x)] = find(y);
    }

    public static int find(int x) {
        if (fa[x] != x) {
            fa[x] = find(fa[x]);
        }
        return fa[x];
    }
}
```

二：索道

```
import java.util.*;

public class Main {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int k = sc.nextInt() - 1;
        int[] arr = new int[n];
        for (int i = 0; i < n; i++) {
            arr[i] = sc.nextInt();
        }
        int[] dp = new int[n];
        int max1 = 0;
        if (arr[0] < arr[k]) {
            dp[0] = 1;
            max1 = 1;
        }
        for (int i = 1; i < k; i++) {
            if (arr[i] < arr[k]) {
                dp[i] = 1;
                for (int j = 0; j < i; j++) {
                    if (arr[i] > arr[j]) {
                        dp[i] = Math.max(dp[i], dp[j] + 1);
                    }
                }
            }
            max1 = Math.max(max1, dp[i]);
        }
        int max2 = 0;
        if (k + 1 < n && arr[k + 1] < arr[k]) {
            dp[k + 1] = 1;
            max2 = 1;
        }
        for (int i = k + 2; i < n; i++) {
            if (arr[i] < arr[k]) {
                dp[i] = 1;
                for (int j = k + 1; j < i; j++) {
                    if (arr[j] > arr[i]) {
                        dp[i] = Math.max(dp[i], dp[j] + 1);
                    }
                }
            }
            max2 = Math.max(max2, dp[i]);
        }
        System.out.println(max1 + max2 + 1);
    }

}
```

三：排列字母

```
import java.util.HashMap;
import java.util.Map;
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String str = sc.next();
        Map<Character, Integer> map = new HashMap<>();
        for (char c : str.toCharArray()) {
            map.merge(c, 1, Integer::sum);
        }
        if (map.size() == 1) {
            System.out.println(1);
        } else if (map.size() == 2) {
            System.out.println(3);
        } else {
            System.out.println(6);
        }
    }
}
```

四：显示器比例

```
import java.util.Arrays;
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int[] arr =
Arrays.stream(sc.next().split("\\*")).mapToInt(Integer::valueOf).toArray();
        int gcd = gcd(arr[0], arr[1]);
        System.out.println(arr[0] / gcd + ":" + arr[1] / gcd);
    }

    public static int gcd(int a, int b) {
        while (a > 0) {
            int tmp = b % a;
            b = a;
            a = tmp;
        }
        return b;
    }
}
```