

Bangladesh Army International University of Science & Technology
Department of Computer Science and Engineering

Lab Report

Lab Report No	04					
Lab Report Name	Implementation of Djkstra's Algorithm					
Course Title	Computer Algorithms & Complexity Sessional					
Course Code	CSE 222					
Name	Rayhan Alam Towhid					
ID	1119007					
Level	2	Term	II	Section		Group
Date of Submission	02-11-2025		Session	Fall-2025		

Marking Rubric:

Problem Understanding & Report Clarity (3)	Implementation (5)	Results & Analysis (2)	Total (10)

Key Learnings:

I have learned how to count equal items using a frequency array. I have understood that a regular polygon needs at least three sticks of the same length and learn to divide the sticks into groups of three to find how many polygons you can form. Finally, I have combined all groups to get the total number of polygons possible.

Code Implementation:

By Rayhan6244, contest: Codeforces Round 940 (Div. 2) and CodeCraft-23, problem: (A) Stickogon, Accepted, #, [Copy](#)

```
#include <iostream>
using namespace std;

int main() {
    int t;
    cin >> t;

    while (t--) {
        int n;
        cin >> n;

        int freq[101] = {0};

        for (int i = 0; i < n; i++) {
            int x;
            cin >> x;
            freq[x]++;
        }

        int ans = 0;
        for (int i = 1; i <= 100; i++) {
            ans += freq[i] / 3;
        }

        cout << ans << endl;
    }

    return 0;
}
```

Sample Input - Output:

—Judgement Protocol

Test: #1, time: 31 ms., memory: 0 KB, exit code: 0, checker exit code: 0, verdict: OK

Input

```
4
1
1
2
1
1
6
2 2 3 3 3 3
9
4 2 2 2 2 4 2 4 4
```

Output

```
0
0
1
2
```

Answer

```
0
0
1
2
```

Checker Log

```
ok 4 number(s): "0 0 1 2"
```

Test: #2, time: 31 ms., memory: 0 KB, exit code: 0, checker exit code: 0, verdict: OK

Input

```
100
2
1 1
4
1 1 1 1
7
1 1 1 1 1 1 1
```

Result Analysis / Discussion:

In this problem, we use a frequency array to count how many sticks of each length we have. Since a regular polygon needs at least three equal-length sticks, we divide the count of each length by three to find out how many polygons can be formed. Adding all these gives the maximum number of polygons possible. This teaches counting, grouping, and simple logical reasoning with constraints.