



Shri Vile Parle Kelavani Mandal's  
**INSTITUTE OF TECHNOLOGY**  
**DHULE (M.S.)**  
**DEPARMENT OF COMPUTER ENGINEERING**

**Subject:** Competitive Programming Lab (BTCOL606)

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**Roll No. :** 32

**Class :** TY Computer

**Batch :** T2

**Division:** T

**Expt. No. :** 02

**Date :** 10/03/2025

**Title :** Sales by Match Problem

Remark

Signature

**Language used :** C++

**Code:**

```
#include <iostream> //Mohammed Meraj Mohammed Ashfaque T2 32
using namespace std;

int main() {
    int n;
    cout << "---- SALES BY MATCH PROBLEM ---- by Mohammed Meraj T2
32\n\nEnter the number of socks: ";
    cin >> n;
    int temporary=0;
    int result_limiter = 0;
    int socks[n];
    if(n < 0){
        result_limiter = 1;
        cout << "\n\nNumber of Socks cannot be Negative. \n\n";
    }else{
        cout << "Enter the color code of each sock: " << endl;
    }
    for(int i = 0; i < n; i++) {
        cin >> temporary;
        if(temporary > 0){
```

```

        socks[i] = temporary;
    }else{
        cout << "Color Code Cannot be negative \n";
        result_limiter =1;
        break;
    }
    int totalPairedSocks = 0;

    for(int i = 0; i < n; i++) {
        for(int j = i+1; j < n; j++) {
            if(socks[i] == socks[j]) {
                if(socks[i] != -1){
                    totalPairedSocks += 2;
                    socks[i] = -1;
                    socks[j] = -1;
                }else{

                }

                if(socks[i] != -1 || socks[j] != -1){
                    socks[i] = -1;
                    socks[j] = -1;
                }

                break;
            }
        }
    }

    if(result_limiter == 0){
        cout << "\n\nPaired Socks: " << totalPairedSocks / 2;
        cout << "\n\nUnpaired Socks: " << n - totalPairedSocks;

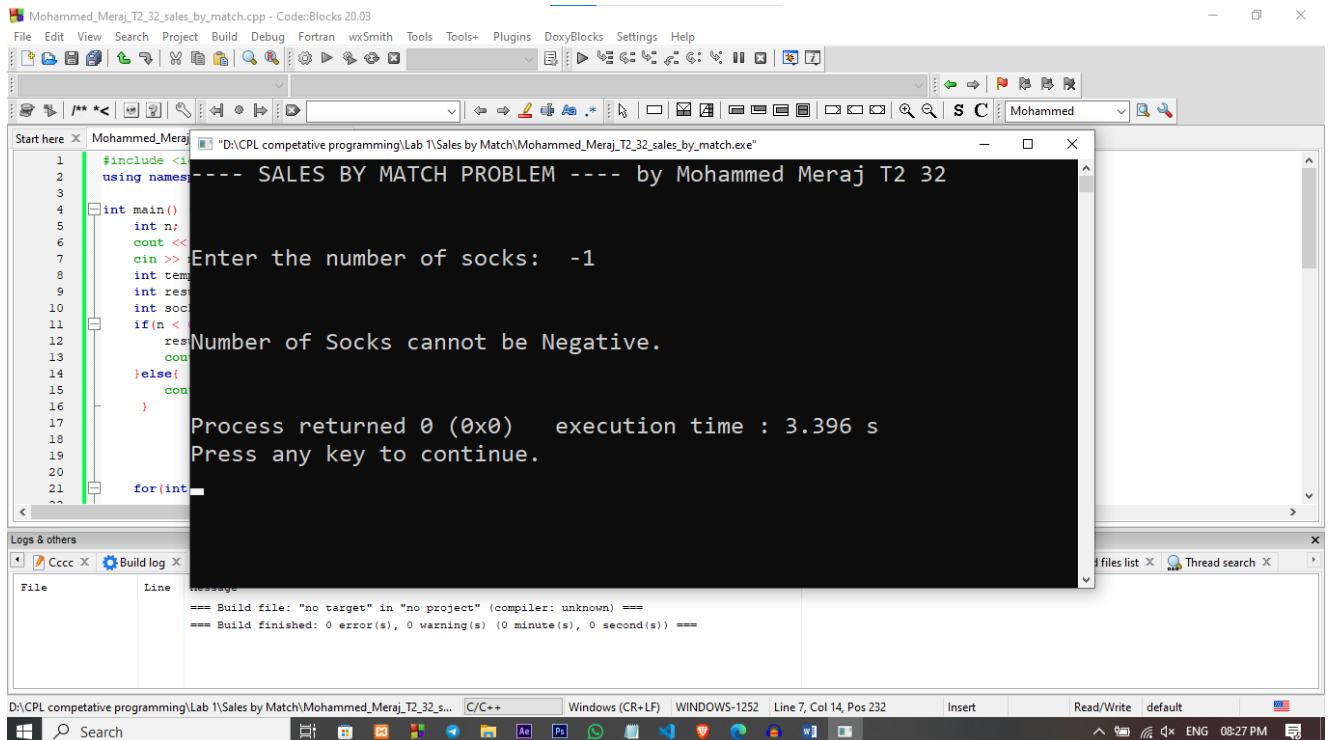
    }

    return 0;
}

```

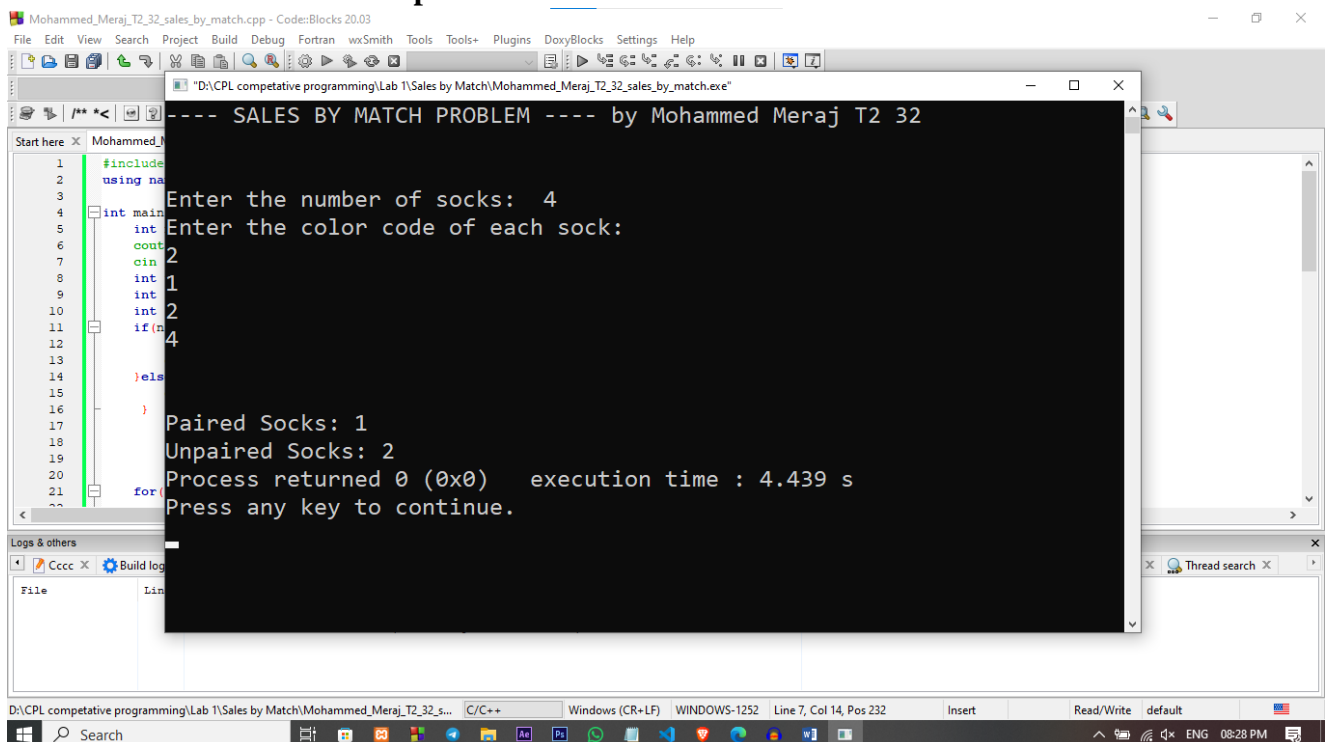
**Output:**

### **Case 1 : Giving Negative Value in Number of Socks**



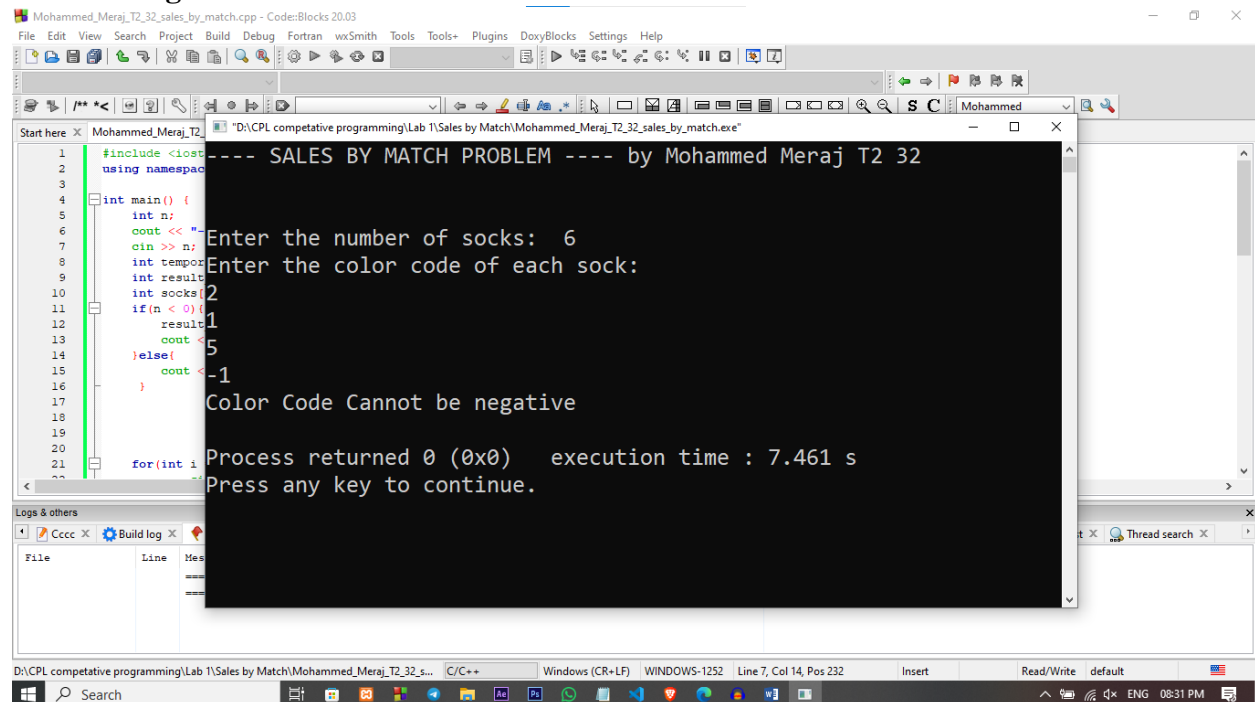
```
----- SALES BY MATCH PROBLEM ----- by Mohammed Meraj T2 32
Enter the number of socks: -1
Number of Socks cannot be Negative.
Process returned 0 (0x0) execution time : 3.396 s
Press any key to continue.
```

### **Case 2 : Four socks with One pairs**



```
----- SALES BY MATCH PROBLEM ----- by Mohammed Meraj T2 32
Enter the number of socks: 4
Enter the color code of each sock:
2
1
2
4
Paired Socks: 1
Unpaired Socks: 2
Process returned 0 (0x0) execution time : 4.439 s
Press any key to continue.
```

### Case 3 : Negative value in Color Code



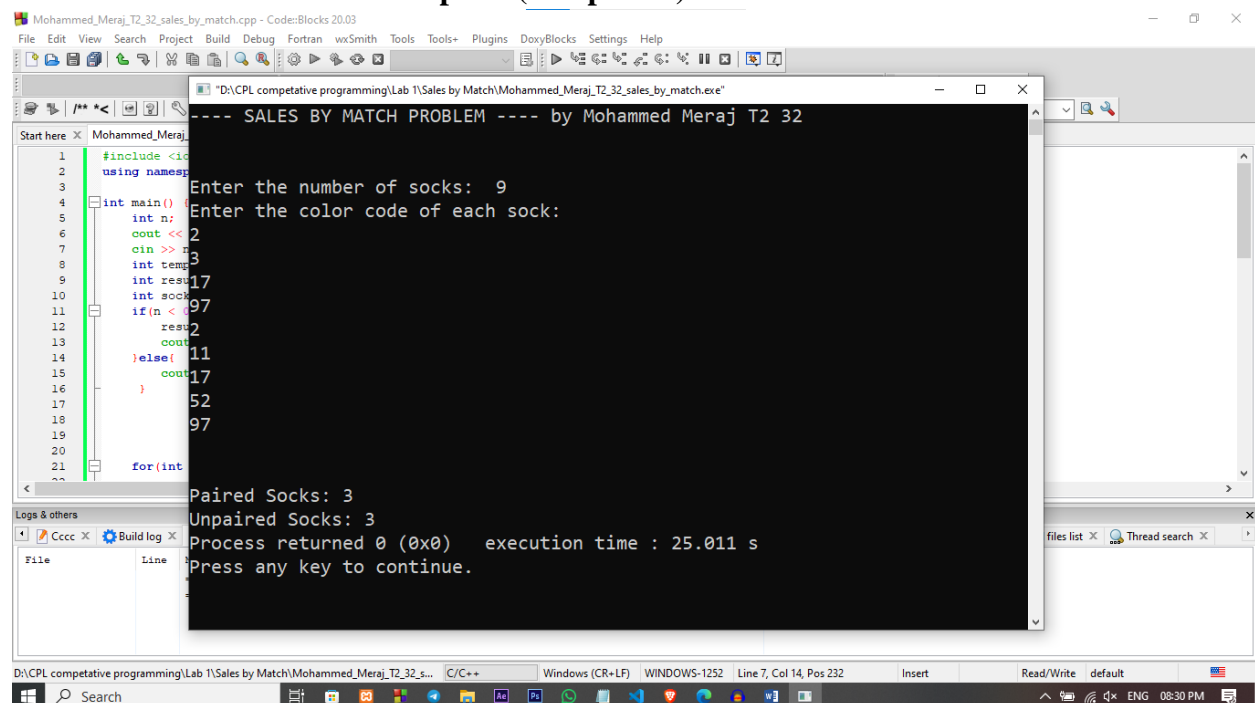
The screenshot shows a C++ IDE with the file `Mohammed_Meraj_T2_32_sales_by_match.cpp`. The code is as follows:

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int n;
6     cout << "Enter the number of socks: ";
7     cin >> n;
8     int temp;
9     int result;
10    int socks[n];
11    if(n < 0){
12        result = 1;
13        cout << "Error\n";
14    }else{
15        cout << "Enter the color code of each sock:\n";
16        for(int i = 0; i < n; i++){
17            int color;
18            cin >> color;
19            socks[i] = color;
20        }
21    }
22    return 0;
23 }
```

The terminal output shows the program execution with the following input and output:

```
----- SALES BY MATCH PROBLEM ----- by Mohammed Meraj T2 32
Enter the number of socks: 6
Enter the color code of each sock:
2
1
5
-1
Color Code Cannot be negative
Process returned 0 (0x0)   execution time : 7.461 s
Press any key to continue.
```

### Case 4 : Nine socks with Three pairs (3 unpaired)



The screenshot shows the same C++ IDE with the same code as in Case 3. The terminal output shows the program execution with the following input and output:

```
----- SALES BY MATCH PROBLEM ----- by Mohammed Meraj T2 32
Enter the number of socks: 9
Enter the color code of each sock:
2
3
17
97
2
11
17
52
97
Paired Socks: 3
Unpaired Socks: 3
Process returned 0 (0x0)   execution time : 25.011 s
Press any key to continue.
```