Green University of Bangladesh
Department of Computer Science and Engineering(CSE)

Faculty of Sciences and Engineering
Semester: (Spring, Year:2024), B.Sc. in CSE (Day)

LAB ASSIGNMENT NO #03

Course Title: Data Communication Lab
Course Code: CSE 308 Section: 221_D3

Experiment Name: IPv4 implementation of Decimal to Binary and vice versa

Student Details

Name		ID
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Lab Date : 16 – 03 – 2024
Submission Date : 20 – 03 – 2024
Course Teacher's Name : Sakhaouth Hossan

[For Teachers use only: Don't Write Anything inside this box]

Lab Report Status

Marks: …… **Signature:.....**
Comments:..... **Date:.....**

1. TITLE OF THE LAB EXPERIMENT:

IPv4 implementation of Decimal to Binary and vice versa

2. OBJECTIVES:

After complementing this lab experiment, we will gain practical knowledge and tthe outcomes of this experiment are

- To implement ip number conversion.

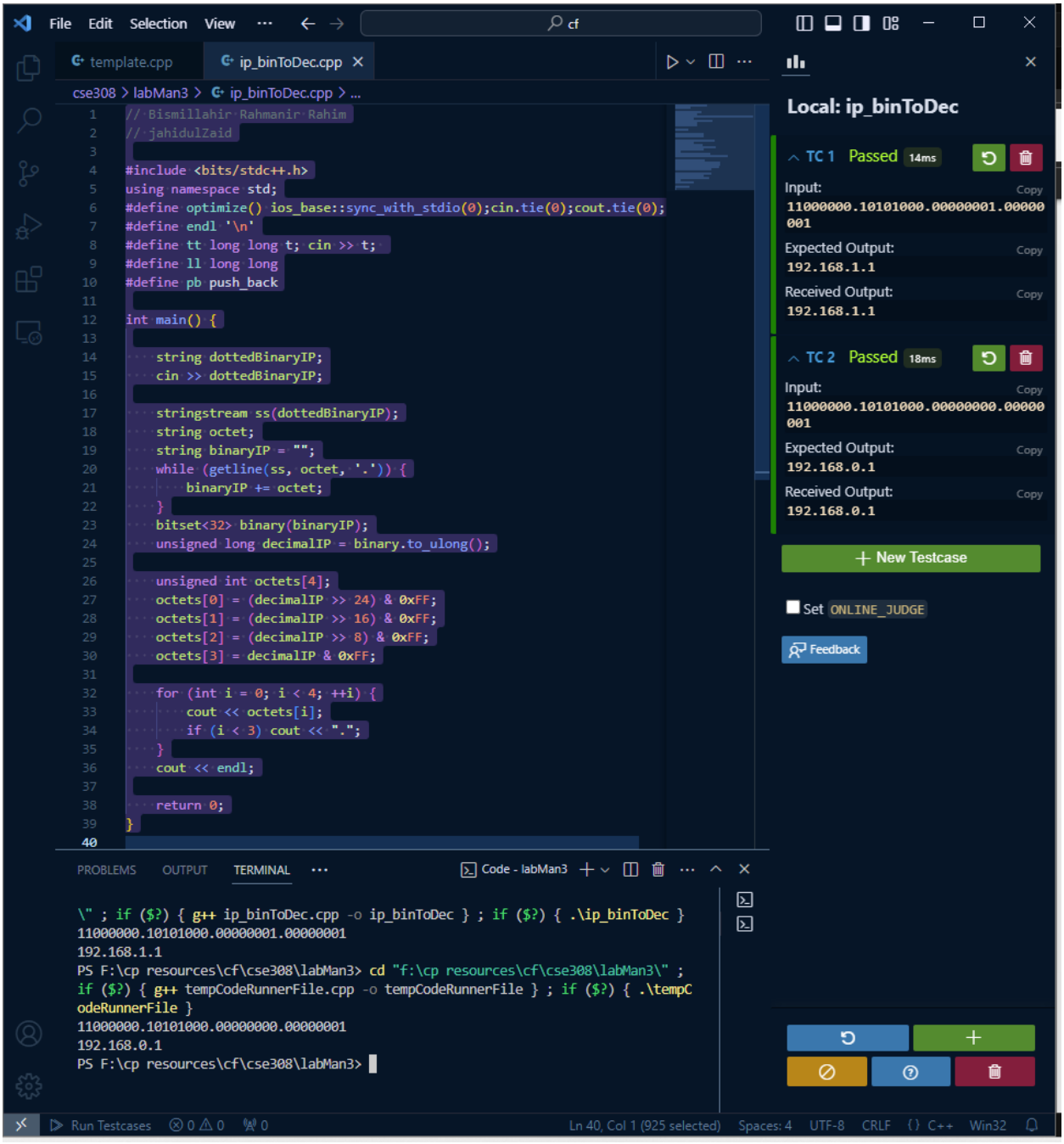
4. IMPLEMENTATION

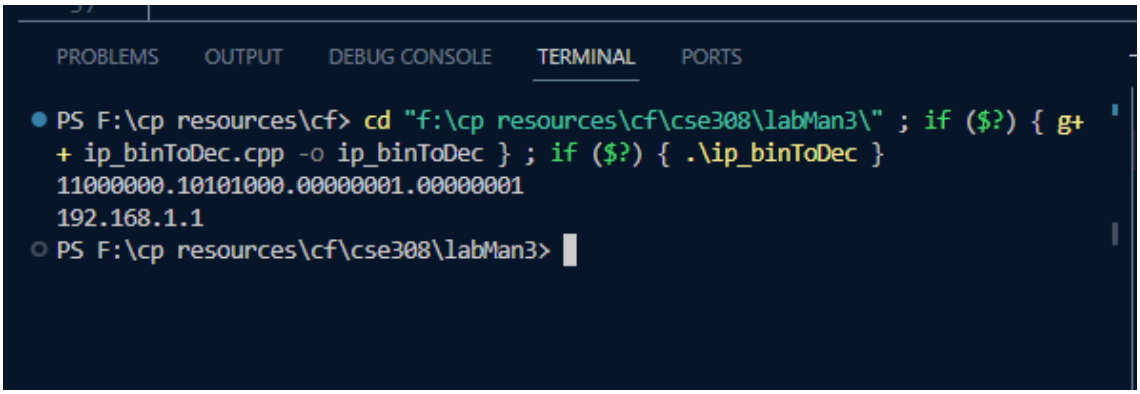
An ipv4 dotted binary IP to decimal IP:

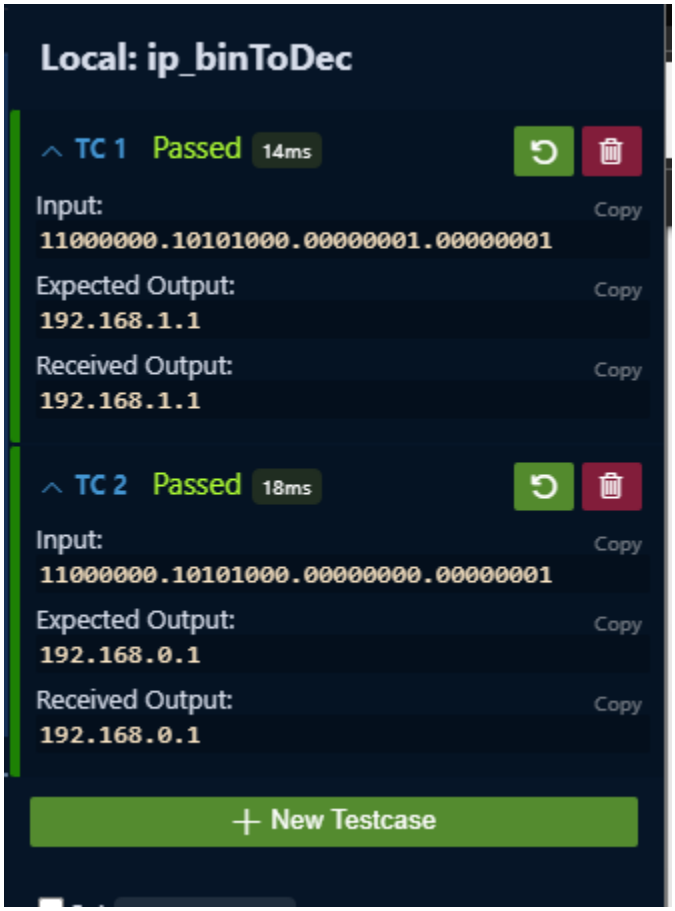
```cpp
// Bismillahir Rahmanir Rahim
// jahidulZaid
#include <bits/stdc++.h>
using namespace std;
#define optimize() ios_base::sync_with_stdio(0);cin.tie(0);cout.tie(0);
#define endl '\n'
#define tt long long t; cin >> t;
#define pb push_back

int main() {
    string dottedBinaryIP;
    cin >> dottedBinaryIP;
    stringstream ss(dottedBinaryIP);
    string octet;
    string binaryIP = "";
    while (getline(ss, octet, '.')) {
        binaryIP += octet;
    }
    bitset<32> binary(binaryIP);
    unsigned long decimalIP = binary.to_ulong();
    unsigned int octets[4];
    octets[0] = (decimalIP >> 24) & 0xFF;
    octets[1] = (decimalIP >> 16) & 0xFF;
    octets[2] = (decimalIP >> 8) & 0xFF;
    octets[3] = decimalIP & 0xFF;
    for (int i = 0; i < 4; ++i) {
        cout << octets[i];
        if (i < 3) cout << ".";
    }
    cout << endl;
    return 0;
}
```

5. OUTPUT


File Edit Selection View
cf
template.cpp
ip_binToDec.cpp
cse308 > labMan3 > ip_binToDec.cpp > ...
// Bismillahir Rahmanir Rahim
// jahidulZaid
#include <bits/stdc++.h>
using namespace std;
#define optimize() ios_base::sync_with_stdio(0);cin.tie(0);cout.tie(0);
#define endl '\n'
#define tt long long t; cin >> t;
#define ll long long
#define pb push_back
int main() {
string dottedBinaryIP;
cin >> dottedBinaryIP;
stringstream ss(dottedBinaryIP);
string octet;
string binaryIP = "";
while (getline(ss, octet, '.')) {
binaryIP += octet;
}
bitset<32> binary(binaryIP);
unsigned long decimalIP = binary.to_ulong();
unsigned int octets[4];
octets[0] = (decimalIP >> 24) & 0xFF;
octets[1] = (decimalIP >> 16) & 0xFF;
octets[2] = (decimalIP >> 8) & 0xFF;
octets[3] = decimalIP & 0xFF;
for (int i = 0; i < 4; ++i) {
cout << octets[i];
if (i < 3) cout << ".";
}
cout << endl;
return 0;
}
PROBLEMS OUTPUT TERMINAL
Code - labMan3
\" ; if ($?) { g++ ip_binToDec.cpp -o ip_binToDec } ; if ($?) { .\ip_binToDec }
11000000.10101000.00000001.00000001
192.168.1.1
PS F:\cp resources\cf\cse308\labMan3> cd "f:\cp resources\cf\cse308\labMan3\" ;
if ($?) { g++ tempCodeRunnerFile.cpp -o tempCodeRunnerFile } ; if ($?) { .\tempC
odeRunnerFile }
11000000.10101000.00000000.00000001
192.168.0.1
PS F:\cp resources\cf\cse308\labMan3>
Local: ip_binToDec
TC 1 Passed 14ms
Input:
11000000.10101000.00000001.00000001
Expected Output:
192.168.1.1
Received Output:
192.168.1.1
TC 2 Passed 18ms
Input:
11000000.10101000.00000000.00000001
Expected Output:
192.168.0.1
Received Output:
192.168.0.1
New Testcase
Set ONLINE_JUDGE
Feedback
Run Testcases
Ln 40, Col 1 (925 selected)
Spaces: 4
UTF-8
CRLF
C++
Win32





6. ANALYSIS AND DISCUSSION:

After following the above steps we successfully obtained the desired results.