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**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**

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| **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]**

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| **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:

// 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**

**A screenshot of a computer program

Description automatically generated**

A computer screen shot of a computer code

Description automatically generated

A screenshot of a computer program

Description automatically generated

**6. ANALYSIS AND DISCUSSION:**

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