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**Green University of Bangladesh**

**Department of Computer Science and Engineering (CSE)**

**Semester: (Spring, Year:2024), B.Sc. in CSE (Day)**

**Lab Report NO #04**

**Course Title: Data Communication Lab**

**Course Code: CSE 308 Section: 221 D20**

**Lab Experiment Name:** Implementation of conversing IP dotted decimal to binary and binary to decimal.

**Student Details**

| **Name** | | **ID** |
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| **1.** | Tanvir Ahmed | 221002461 |

**Lab Date : 7/5/2024**

**Submission Date : 23/5/2024**

**Course Teacher’s Name : Md. Romazan Alom**

| **Lab Report Status**  **Marks: ………………………………… Signature:.....................**  **Comments:.............................................. Date:..............................** |
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**Introduction:**

We have the task of converting dotted IP decimal to binary and dotted IP binary to decimal. At first, I take an IP address in decimal, divide 4 decimal numbers from the IP then perform the decimal to binary conversion based on the previous class learning. Again take a binary IP and divide it into 4 parts perform each part binary to decimal conversion using the technique from the previous class. I declare 2 functions for the conversion part.

Source code:

#**include** <stdio.h>

#**include** <stdlib.h>

#**include** <string.h>

#**include** <math.h>

void **decimalToBinary**(char \*ipAddress) {

int octets[4];

sscanf(ipAddress, "%d.%d.%d.%d", &octets[0], &octets[1], &octets[2], &octets[3]);

printf("Binary IP Address: ");

int j = 3;

**for** (int i = 0; i < 4; i++) {

int d = octets[i],rem,b=0,i=1;

**while**(d!=0){

rem = d%2;

d = d/2;

b = b+(rem\*i);

i=i\*10;

}

printf("%d",b);

**if**(j>0)

printf(".");

j--;

}

printf("\n");

}

int **binaryOctetToDecimal**(long long n) {

int dec = 0, i = 0, rem;

**while** (n != 0) {

rem = n % 10;

n /= 10;

dec += rem \* pow(2, i);

++i;

}

**return** dec;

}

int **main**() {

char ipAddress[16];

char binaryAddress[36];

printf("Enter a dotted decimal IP address: ");

scanf("%s", ipAddress);

decimalToBinary(ipAddress);

printf("Enter a dotted binary IP address: ");

scanf("%s", binaryAddress);

char \*token = strtok(binaryAddress, ".");

printf("Decimal IP Address: ");

**while** (token != NULL) {

long long binaryOctet = atoll(token);

int decimalOctet = binaryOctetToDecimal(binaryOctet);

printf("%d", decimalOctet);

token = strtok(NULL, ".");

**if** (token != NULL) {

printf(".");

}

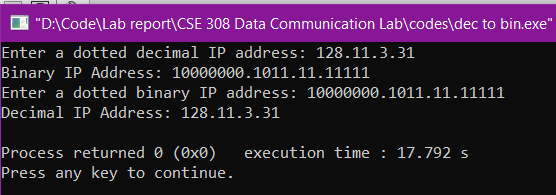
}

printf("\n");

**return** 0;

}

output:



**Discussion:**

I have completed the task properly, and the output showed correctly. I took some help from the previous class learning and lab manual to complete the task. I have learned how to convert binary to decimal and decimal to binary from the last class. I took help from chatgpt which is how to divide a string based on the ‘.’ cause I need to divide those IP addresses into 4 parts then I can perform the conversion in each part. After dividing I perform the conversion based on the knowledge that I get from the previous class. Finally, the output came properly.