**Experiment No: 5**

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**Program:**

#include <bits/stdc++.h>

using namespace std;

string XorOperation(string data, string generator)

{

cout << "Data to be Xored : " << data;

int genlenth = generator.length();

string subStr = data.substr(0, genlenth);

int j = genlenth - 1;

cout << endl << "Initial String : " << subStr;

int len = data.length();

int runned = 0;

while (j < len)

{

runned++;

if (j != genlenth - 1)

{

subStr += data[j];

subStr = subStr.substr(1, genlenth);

}

if (subStr[0] == '0')

{

cout << endl << "String : " << subStr << " Skipped " << j << " ";

j++;

continue;

}

string s;

for (int i = 0;i < genlenth;i++)

{

generator[i] == subStr[i] ? s += '0' : s += "1";

}

subStr = s;

cout << endl << "String : " << subStr;

j++;

}

subStr = subStr.substr(1, genlenth);

cout << "\nRemainder : " << subStr << "\n\n";

return subStr;

}

string crc()

{

string data, generator;

cout << "Enter data bits : ";

cin >> data;

cout << "Enter generator bits : ";

cin >> generator;

string poly(generator.length() - 1, '0');

string encoded = data + poly;

cout << "-------- Sender ---------- \n";

string rem = XorOperation(encoded, generator);

cout << "\n----------- Receiver --------- \n";

// string ans = XorOperation(data + SenderRem, generator);

string sender = data + rem;

string receiver;

cout << "Enter first " << data.size() << " data bits : ";

cin >> receiver;

receiver = XorOperation(receiver + rem, generator);

string ans;

if (sender != receiver)

ans = "No Errors Detected";

else

ans = "Error detected";

return ans;

}

int main()

{

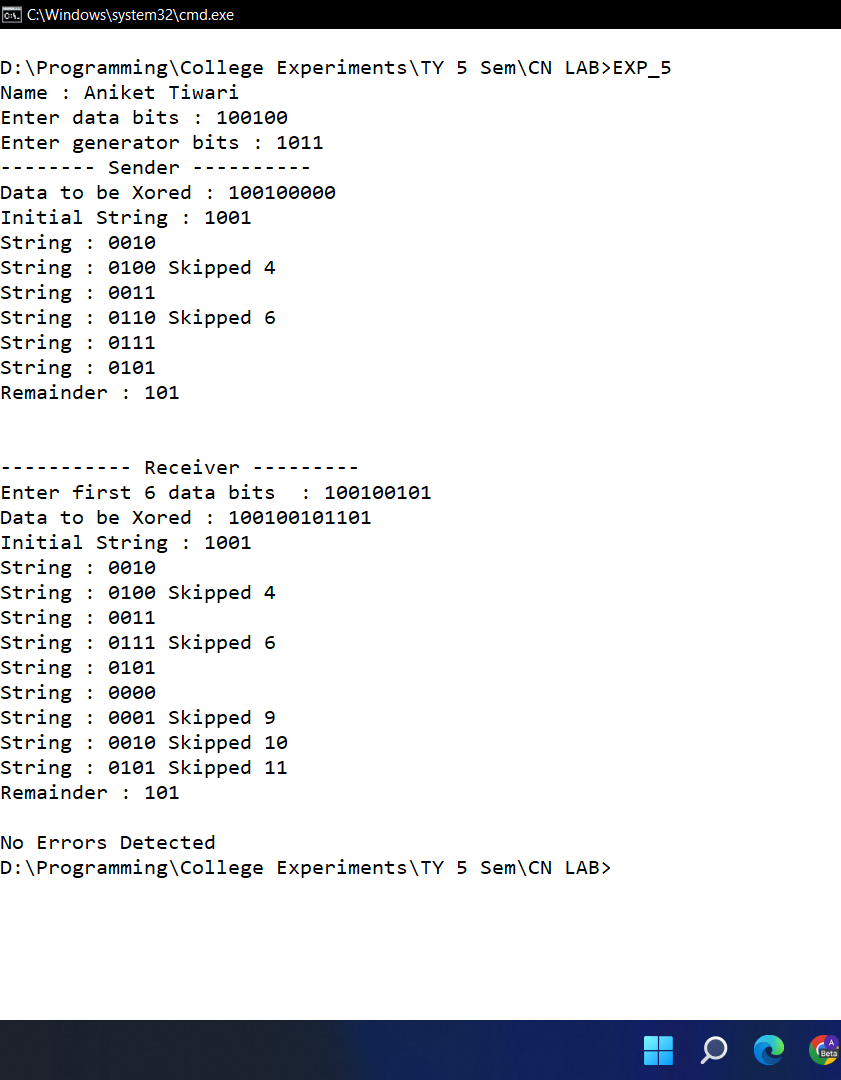
cout << "Name : Aniket Tiwari" << endl;

cout << crc();

return 0;

}

**Output:**

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