COMPUTER NETWORKS-CS303

LAB EXPERIMENT – 8

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Experiment: Write a program for error detecting code using CRC-CCITT (16- bits)

Code:

```
#include <iostream>
#include <string.h>

using namespace std;

int crc(char *ip, char *op, char *poly, int mode)
{
   strcpy(op, ip);
   if (mode)
   {
      for (int i = 1; i < strlen(poly); i++)
         strcat(op, "0");
   }

   for (int i = 0; i < strlen(ip); i++)
   {
      if (op[i] == '1')
      {
         for (int j = 0; j < strlen(poly); j++)
         {
            if (op[i + j] == poly[j])
               op[i + j] = '0';
            else
               op[i + j] = '1';
         }
      }
   }
   for (int i = 0; i < strlen(op); i++)
      if (op[i] == '1')
         return 0;
   return 1;
```

```
}

int main()
{
   char ip[50], op[50], recv[50];
   char poly[] = "10001000000100001";

   cout << "Enter the input message in binary" << endl;
   cin >> ip;
   crc(ip, op, poly, 1);
   cout << "The transmitted message is: " << ip << op + strlen(ip) << endl;
   cout << "Enter the recevied message in binary" << endl;
   cin >> recv;
   if (crc(recv, op, poly, 0))
      cout << "No error in data" << endl;
   else
      cout << "Error in data transmission has occurred" << endl;

   return 0;
}
```

Output:

```
Enter the input message in binary
100101
The transmitted message is: 1001010111010011000111
Enter the recevied message in binary
1001010111010011001111
Error in data transmission has occurred
```

```
Enter the input message in binary
100101
The transmitted message is: 1001010111010011000111
Enter the recevied message in binary
1001010111010011000111
No error in data
```