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```c
#include <stdio.h>
#include <string.h>
#define N strleng(q)

char modif[28], checksum[28], gen[28];
int i, j, k, a, c;
void xor()
{
    for (i=1; i<N; i++)
    { checksum[i] = ((checksum[i] == gen[i]) ? '0' : '1');
    }
}


void crc()
{
    for (a=0; a<N; a++)
    {
        checksum[a] = modif[a];
        do
        {
            if (checksum[0] == '1')
            xor();
            for (i=0; i<N-1; i++)
            {
                checksum[i] = checksum[i+1];
            }
            checksum[i] = modif[a++];
        }
```

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```c
    while (a <= a + N-1);
}

int main()
{
    int flag=0;
    strcpy (g, "1100000000000000101");
    printf (" \n entu data: ");
    scanf ("%.s", modif);
    printf (" \n generating polynomial :%.s", g);
    i = strlen (modif);
    for (c=i ; c<i+N-1 ; e++)
        modif[e]= '0';
    printf (" \n --- \n");
    printf (" modified data is :%.s", modif);
    crc();
    printf (" Checksum is :%.s", checksum);
    for (c=i ; c<i+N-1 ; c++)
    modif[c] = checksum [c-i];
    printf (" final codeword is :%.s", modified);
    printf (" test error detection o(yes) 1(no)?: ");
    scanf ("%.d", &c);
    if (c==0)
    {
        do {
            printf (" Entu the position where error is to
                        be inserted");
            scanf ("%.d", &c);
        }
        while (c==0 || c > i + N-1);
```

```
modif [c-1] = (modif [c-1] == '0') ? '1' : '0';
printf (" #erroneous data: %.s ", t);
}

crcl)
for (c=0; (c<@N-1) && (cheuksum[c] != '1');
                                        c++);

if (c < N-1)
  printf ("error detected \n\n ");
  elu
  printf (" no essor ");
}
while (flag! = 1);
}
```