

```
#include <stdio.h>
```

```
char m[50], g[50], q[50], temp[50];
```

```
void caltrans(int);
```

```
void crc(int);
```

```
void calram(int)
```

```
void shift();
```

```
int main()
```

```
{
```

```
    int n, i = 0;
```

```
    char ch, flag = 0;
```

```
    printf("Enter the frame bits");
```

```
    while ((ch = getc(stdin)) != '\n')
```

```
        m[i++] = ch;
```

```
        n = i;
```

```
    for (i = 0; i < 16; i++)
```

```
        m[n++] = '0';
```

```
        m[n] = '\0';
```

```
    printf("message after appending 16 zeros: %s", m);
```

```
    for (i = 0; i < 16; i++)
```

```
        g[i] = 0;
```

```
    g[0] = g[4] = g[8] = g[12] = g[16] = '1'; g[17] = '\0'
```

```
    printf("In generator: %s\n", g);
```

```
    crc(n);
```

```
    printf("In In quotient: %s", q);
```

```
    caltrans(n);
```

```
    printf("In transmitted frame: %s", m);
```

```
    printf("In Enter transmitted frame: ");
```

①

```
scanf("%i.%s", m);
```

```
printf("(RC checking\n");
```

```
crc (n);
```

```
printf("\n\nlast remainder : %.5f", r);
```

```
for (i=0; i<16; i++)
```

```
if (r[i] != '0')
```

```
flag = 1;
```

```
else
```

```
continue;
```

```
if (flag == 1)
```

```
printf("Error during transmission");
```

```
else
```

```
printf("\n\nReceived frame correctly");
```

```
}
```

```
void crc (int n)
```

```
{
```

```
int i, j;
```

```
for (i=0; i<n; i++)
```

```
temp[i] = m[i];
```

```
for (i=0; i<16; i++)
```

```
r[i] = m[i];
```

```
printf("\n intermediate remainder\n");
```

```
for (i=0; i<n-16; i++)
```

```
{
```

```
if (r[0] == '1')
```

```
{
```

```
r[i] = '1';
```

```
calbam();
```

```
}
```

(2)

else

{

q[i] = '0';

shift();

}

r[16] = m[17+i];

r[17] = '\0';

printf("\n remainder %d : %s", i+1, r);

for(j=0; j<=17; j++)

temp[j] = r[j];

}

q[n-16] = '\0';

}

void calram()

{

int i, j;

for(i=1; i<=16; i++)

r[i-1] = ((int)kmp[i]-48) ^ ((int)g[i]-48)+48;

}

void shift()

{

int i;

for(i=1; i<=16; i++)

{ r[i-1] = r[i];

}

```
void calbars(int n)
```

```
{
```

```
    int i, k = 0;
```

```
    for (i = n - 16; i < n; i++)
```

```
        m[i] = ((int)m[i] - 48) ^ ((int)s[k++] - 48) ^ 48;
```

```
    m[i] = '10' ;
```

```
}
```