**RSA**

#include <bits/stdc++.h>

using namespace std;

int gcd(int a, int h)

{

int temp;

while (1) {

temp = a % h;

if (temp == 0)

return h;

a = h;

h = temp;

}

}

int main()

{

double p = 3;

double q = 7;

double n = p \* q;

double e = 2;

double phi = (p - 1) \* (q - 1);

while (e < phi) {

if (gcd(e, phi) == 1)

break;

else

e++;

}

int k = 2; // A constant value

double d = (1 + (k \* phi)) / e;

double msg = 12;

printf("Message data = %lf", msg);

double c = pow(msg, e);

c = fmod(c, n);

printf("\nEncrypted data = %lf", c);

double m = pow(c, d);

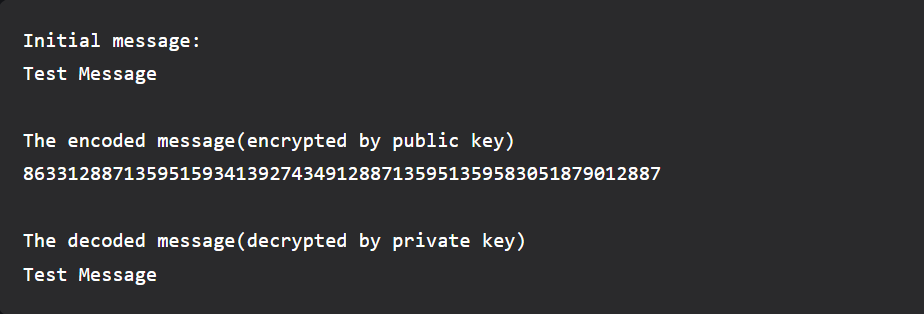
m = fmod(m, n);

printf("\nOriginal Message Sent = %lf", m);

return 0;

}.

**Output:**

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