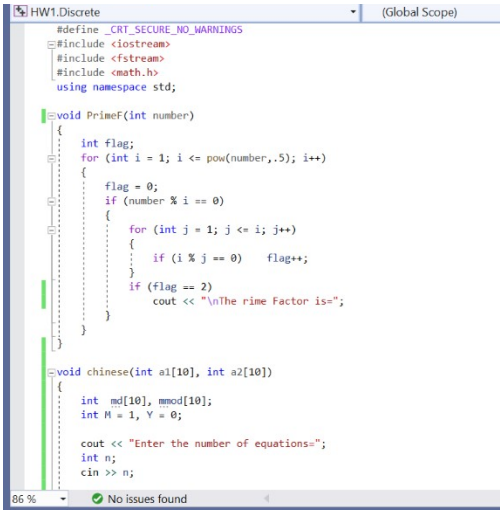
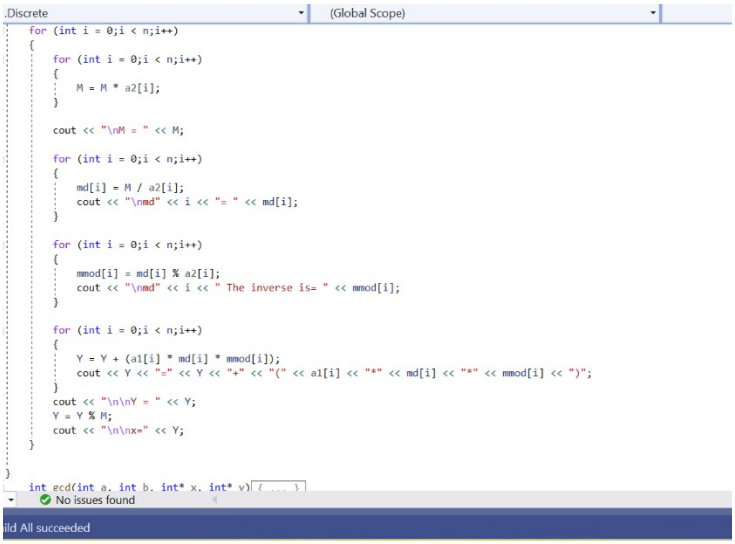
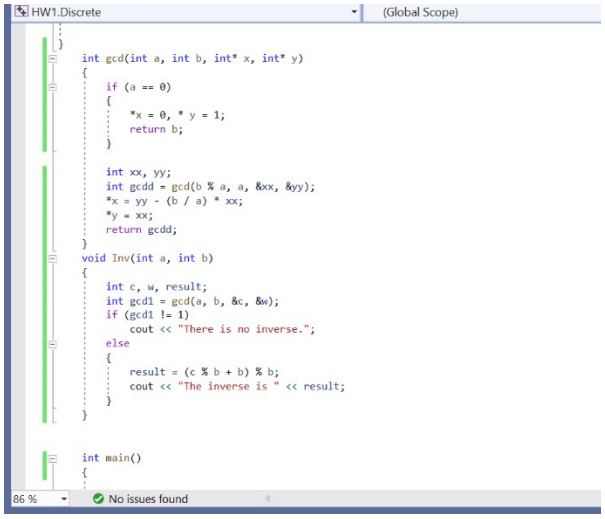
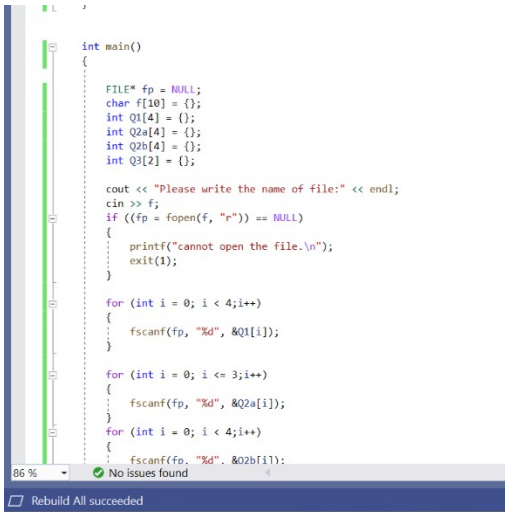

HW1.Discrete
(Global Scope)
#define _CRT_SECURE_NO_WARNINGS
#include <iostream>
#include <fstream>
#include <math.h>
using namespace std;
void PrimeF(int number)
{
int flag;
for (int i = 1; i <= pow(number,.5); i++)
{
flag = 0;
if (number % i == 0)
{
for (int j = 1; j <= i; j++)
{
if (i % j == 0) flag++;
}
if (flag == 2)
cout << "\nThe rime Factor is=";
}
}
}
void chinese(int a1[10], int a2[10])
{
int md[10], mmod[10];
int M = 1, Y = 0;
cout << "Enter the number of equations=";
int n;
cin >> n;
86 %
No issues found


.Discrete
(Global Scope)
for (int i = 0;i < n;i++)
{
for (int i = 0;i < n;i++)
{
M = M * a2[i];
}
cout << "\nM = " << M;
for (int i = 0;i < n;i++)
{
md[i] = M / a2[i];
cout << "\nmd" << i << "= " << md[i];
}
for (int i = 0;i < n;i++)
{
mmod[i] = md[i] % a2[i];
cout << "\nmd" << i << " The inverse is= " << mmod[i];
}
for (int i = 0;i < n;i++)
{
Y = Y + (a1[i] * md[i] * mmod[i]);
cout << Y << "=" << Y << "+" << "(" << a1[i] << "*" << md[i] << "*" << mmod[i] << ")";
}
cout << "\n\nY = " << Y;
Y = Y % M;
cout << "\n\nx=" << Y;
}
}
int gcd(int a, int b, int* x, int* y) { ... }
No issues found
ild All succeeded

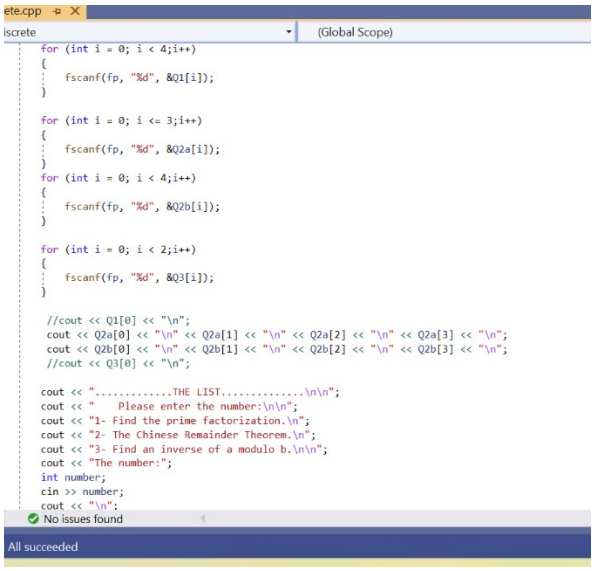

HW1.Discrete
(Global Scope)
}
int gcd(int a, int b, int* x, int* y)
{
if (a == 0)
{
*x = 0, * y = 1;
return b;
}
int xx, yy;
int gcdd = gcd(b % a, a, &xx, &yy);
*x = yy - (b / a) * xx;
*y = xx;
return gcdd;
}
void Inv(int a, int b)
{
int c, w, result;
int gcd1 = gcd(a, b, &c, &w);
if (gcd1 != 1)
cout << "There is no inverse.";
else
{
result = (c % b + b) % b;
cout << "The inverse is " << result;
}
}
int main()
{
86 %
No issues found



```
int main()
{

    FILE* fp = NULL;
    char f[10] = {};
    int Q1[4] = {};
    int Q2a[4] = {};
    int Q2b[4] = {};
    int Q3[2] = {};

    cout << "Please write the name of file:" << endl;
    cin >> f;
    if ((fp = fopen(f, "r")) == NULL)
    {
        printf("cannot open the file.\n");
        exit(1);
    }

    for (int i = 0; i < 4;i++)
    {
        fscanf(fp, "%d", &Q1[i]);
    }

    for (int i = 0; i <= 3;i++)
    {
        fscanf(fp, "%d", &Q2a[i]);
    }
    for (int i = 0; i < 4;i++)
    {
        fscanf(fp, "%d", &Q2b[i]);
```

86 % No issues found

Rebuild All succeeded



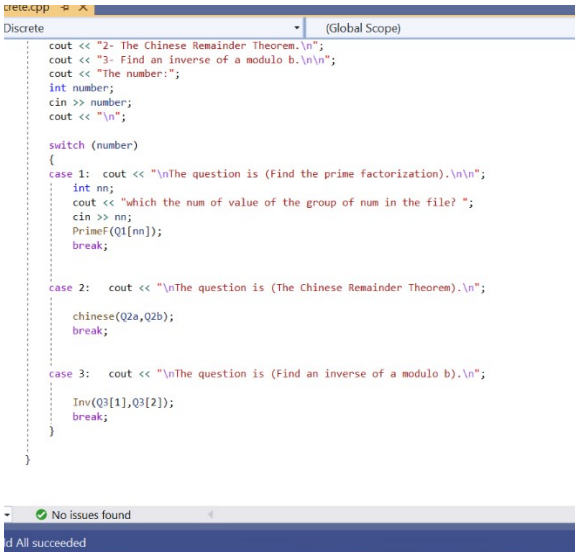
ete.cpp

iscrete (Global Scope)

```
    for (int i = 0; i < 4;i++)
    {
        fscanf(fp, "%d", &Q1[i]);
    }

    for (int i = 0; i <= 3;i++)
    {
        fscanf(fp, "%d", &Q2a[i]);
    }
    for (int i = 0; i < 4;i++)
    {
        fscanf(fp, "%d", &Q2b[i]);
    }

    for (int i = 0; i < 2;i++)
    {
        fscanf(fp, "%d", &Q3[i]);
    }

     //cout << Q1[0] << "\n";
     cout << Q2a[0] << "\n" << Q2a[1] << "\n" << Q2a[2] << "\n" << Q2a[3] << "\n";
     cout << Q2b[0] << "\n" << Q2b[1] << "\n" << Q2b[2] << "\n" << Q2b[3] << "\n";
     //cout << Q3[0] << "\n";

    cout << ".............THE LIST.............\n\n";
    cout << "    Please enter the number:\n\n";
    cout << "1- Find the prime factorization.\n";
    cout << "2- The Chinese Remainder Theorem.\n";
    cout << "3- Find an inverse of a modulo b.\n\n";
    cout << "The number:";
    int number;
    cin >> number;
    cout << "\n";
```

No issues found

All succeeded



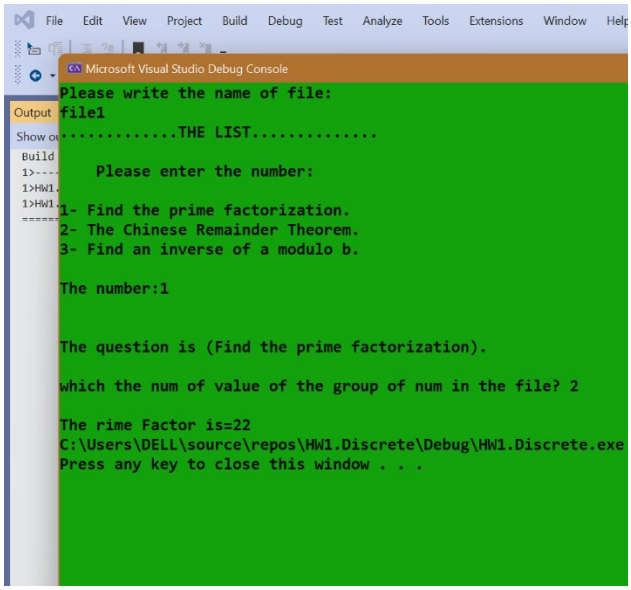
crete.cpp

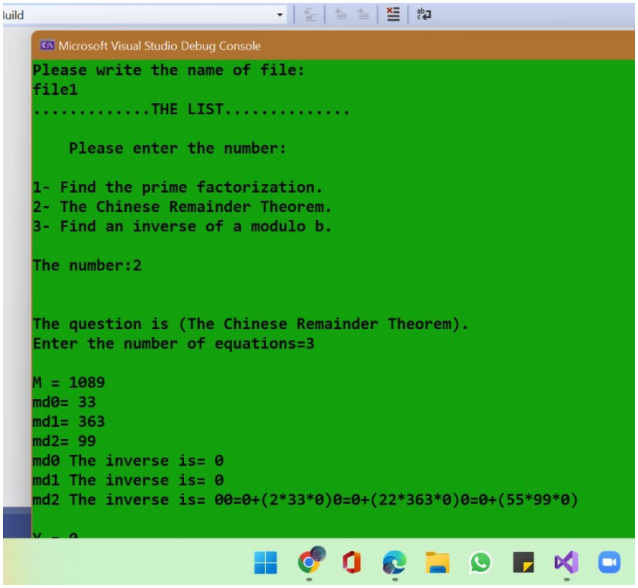
Discrete (Global Scope)

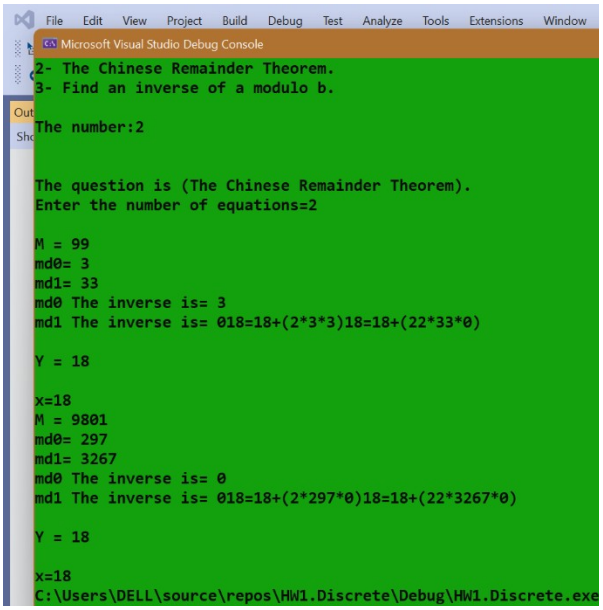
```
    cout << "2- The Chinese Remainder Theorem.\n";
    cout << "3- Find an inverse of a modulo b.\n\n";
    cout << "The number:";
    int number;
    cin >> number;
    cout << "\n";

    switch (number)
    {
    case 1:  cout << "\nThe question is (Find the prime factorization).\n\n";
        int nn;
        cout << "which the num of value of the group of num in the file? ";
        cin >> nn;
        PrimeF(Q1[nn]);
        break;


    case 2:   cout << "\nThe question is (The Chinese Remainder Theorem).\n";

        chinese(Q2a,Q2b);
        break;


    case 3:   cout << "\nThe question is (Find an inverse of a modulo b).\n";

        Inv(Q3[1],Q3[2]);
        break;
    }

}
```

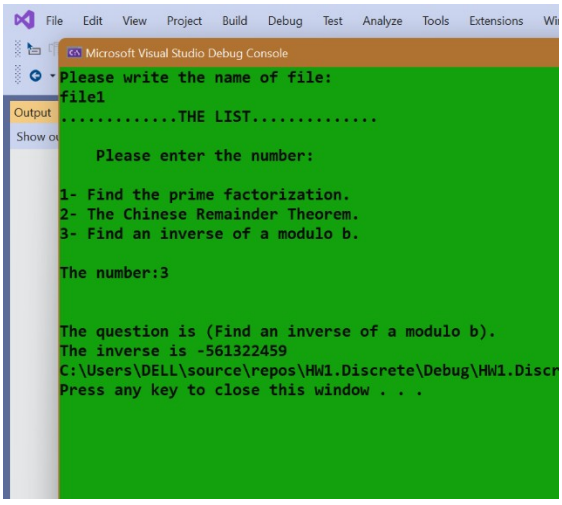
No issues found

d All succeeded


File Edit View Project Build Debug Test Analyze Tools Extensions Window
Microsoft Visual Studio Debug Console
Please write the name of file:
file1
.....THE LIST.....
Please enter the number:
1- Find the prime factorization.
2- The Chinese Remainder Theorem.
3- Find an inverse of a modulo b.
The number:1
The question is (Find the prime factorization).
which the num of value of the group of num in the file? 2
The rime Factor is=22
C:\Users\DELL\source\repos\HW1.Discrete\Debug\HW1.Discrete.exe
Press any key to close this window . . .


Microsoft Visual Studio Debug Console
Please write the name of file:
file1
.....THE LIST.....
Please enter the number:
1- Find the prime factorization.
2- The Chinese Remainder Theorem.
3- Find an inverse of a modulo b.
The number:2
The question is (The Chinese Remainder Theorem).
Enter the number of equations=3
M = 1089
md0= 33
md1= 363
md2= 99
md0 The inverse is= 0
md1 The inverse is= 0
md2 The inverse is= 00=0+(2*33*0)0=0+(22*363*0)0=0+(55*99*0)


File Edit View Project Build Debug Test Analyze Tools Extensions Window
Microsoft Visual Studio Debug Console
2- The Chinese Remainder Theorem.
3- Find an inverse of a modulo b.
The number:2
The question is (The Chinese Remainder Theorem).
Enter the number of equations=2
M = 99
md0= 3
md1= 33
md0 The inverse is= 3
md1 The inverse is= 018=18+(2*3*3)18=18+(22*33*0)
Y = 18
x=18
M = 9801
md0= 297
md1= 3267
md0 The inverse is= 0
md1 The inverse is= 018=18+(2*297*0)18=18+(22*3267*0)
Y = 18
x=18
C:\Users\DELL\source\repos\HW1.Discrete\Debug\HW1.Discrete.exe


File Edit View Project Build Debug Test Analyze Tools Extensions
Microsoft Visual Studio Debug Console
Please write the name of file:
file1
.....THE LIST.....
Please enter the number:
1- Find the prime factorization.
2- The Chinese Remainder Theorem.
3- Find an inverse of a modulo b.
The number:3
The question is (Find an inverse of a modulo b).
The inverse is -561322459
C:\Users\DELL\source\repos\HW1.Discrete\Debug\HW1.Discr
Press any key to close this window . . .