LAB 11

Questions:

1. Write a program in C++ which takes input from user and contains a procedure in assembly named ThreeProd that displays the product of three numeric parameters passed in a function argument.

2. Write a program in C++/C which takes input from user and contains a procedure in assembly named GCD(Greatest common divisor) which calculates their GCD.

Q1

Code :

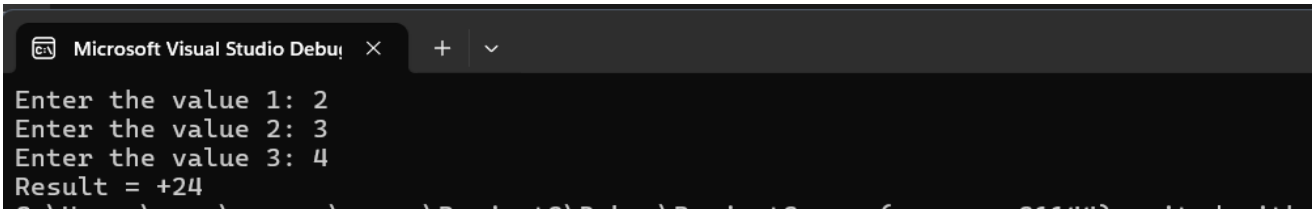
C++

```
#include <iostream>
using namespace std;

extern "C" int ThreeProd(int val1, int val2, int val3);
int main()
{
    int val1, val2, val3 , result ;

    cout << "Enter the value 1: ";
    cin >> val1;

    cout << "Enter the value 2: ";
    cin >> val2;

    cout << "Enter the value 3: ";
    cin >> val3;

    result = ThreeProd(val1 , val2 , val3);

    cout << "Result = " << result;

}
```

MASM

```
.686 ;Target processor Use instructions for Pentium class machines
.MODEL FLAT, C ;Use the flat memory model Use C calling conventions
.STACK 2048

.code

PUBLIC ThreeProd
```

```
ThreeProd PROC
mov eax, [esp+4]
mov ebx, [esp+8]
mov ecx, [esp+12]
mul ebx ; eax = eax * ebx
mul ecx

ret

ThreeProd ENDP

END
```



Q2

Code:

C++

```
#include <iostream>
using namespace std;

extern "C" int GCD(int val1, int val2);
int main()
{
    int val1, val2 , result ;

    cout << "Enter the value 1: ";
    cin >> val1;

    cout << "Enter the value 2: ";
    cin >> val2;

    result = GCD(val1 , val2);

    cout << "GCD = " << result;

}
```

MASM

```
.686 ;Target processor Use instructions for Pentium class machines
.MODEL FLAT, C ;Use the flat memory model Use C calling conventions
.STACK 2048

.code

PUBLIC GCD

GCD PROC
mov eax, [esp+4]
```

```
mov ebx, [esp+8]

L1:
xor edx, edx
div ebx
mov eax, ebx
mov ebx, edx
cmp ebx, 0
jne L1

ret

GCD ENDP

END
```