

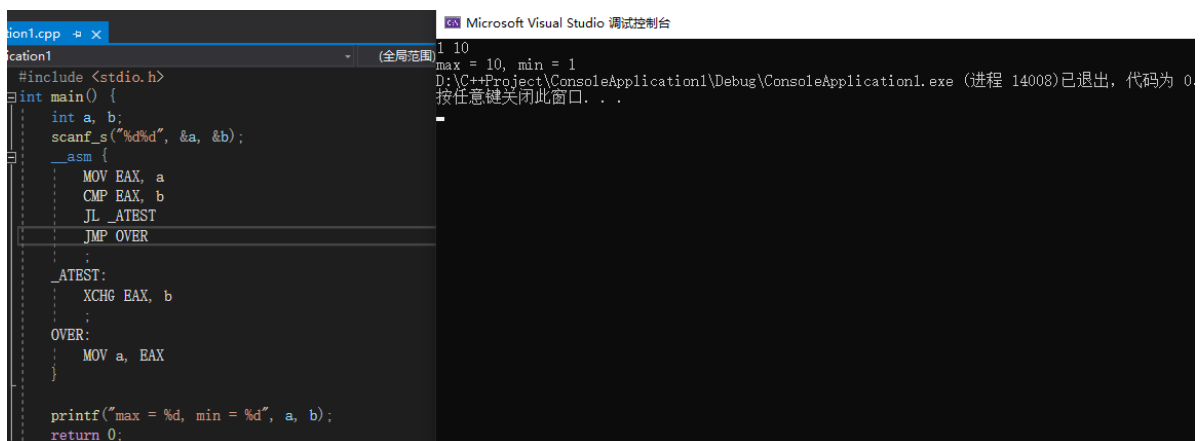
33. 由用户从键盘输入两个整数(整型)：把这两个整数作为有符号数,比较大小,显示输出较大值;把这两个整数作为无符号数,比较大小,显示输出较大值。

有符号：

```
#include <stdio.h>
int main() {
    int a, b;
    scanf_s("%d%d", &a, &b);
    __asm {
        MOV EAX, a
        CMP EAX, b
        JL _ATEST
        JMP OVER
    };
    _ATEST:
        XCHG EAX, b
    ;
    OVER:
        MOV a, EAX
    }

    printf("max = %d, min = %d", a, b);
    return 0;
}
```

结果：



```
ion1.cpp + x
Application1 (全局范围)
#include <stdio.h>
int main() {
    int a, b;
    scanf_s("%d%d", &a, &b);
    __asm {
        MOV EAX, a
        CMP EAX, b
        JL _ATEST
        JMP OVER
    };
    _ATEST:
        XCHG EAX, b
    ;
    OVER:
        MOV a, EAX
    }

    printf("max = %d, min = %d", a, b);
    return 0;
}

Microsoft Visual Studio 调试控制台
1 10
max = 10, min = 1
D:\C++Project\ConsoleApplication1\Debug\ConsoleApplication1.exe (进程 14008)已退出, 代码为 0.
按任意键关闭此窗口. . .
```

无符号：

```
#include <stdio.h>
int main() {
    int a, b;
    scanf_s("%d%d", &a, &b);
    __asm {
        MOV EAX, a
        CMP EAX, b
        JB _ATEST
```

```

        JMP OVER
    ;
_ATEST:
    XCHG EAX, b
    ;
OVER:
    MOV a, EAX
}

printf("max = %d, min = %d", a, b);
// 或者输出成 %u
// printf("max = %u, min = %u", a, b);
return 0;
}

```

结果:

The screenshot shows the Visual Studio IDE with the assembly code for the first program on the left and the debug console output on the right. The assembly code is as follows:

```

#include <stdio.h>
int main() {
    int a, b;
    scanf_s("%d%d", &a, &b);
    __asm {
        MOV EAX, a
        CMP EAX, b
        JB _ATEST
        JMP OVER
    }
    _ATEST:
        XCHG EAX, b
    OVER:
        MOV a, EAX
}

printf("max = %d, min = %d", a, b);
// 或者输出成 %u

```

The debug console output shows the following text:

```

-1 100
max = -1, min = 100
D:\C++Project\ConsoleApplication1\Debug\ConsoleApplication1.exe (进程 3680)已退出, 代码为 0。
按任意键关闭此窗口。 . .

```

36. 由用户从键盘输入一个字符串,统计该字符串的长度:显示输出字符串长度。

```

#include <stdio.h>
char str[1000];
int main() {
    int len = 0;
    gets_s("%s", str, 1000);
    __asm {
        MOV EAX, 0
        LEA EBX, str
    _GETLEN:
        MOV CL, [EBX]
        TEST CL, CL
        JE OVER
        INC EBX
        INC EAX
        JMP _GETLEN
    ;
    OVER:
        MOV len, EAX
    }

    printf("len = %d", len);
    return 0;
}

```

```
}
```

结果:

```
#include <stdio.h>
char str[1000];
int main() {
    int len = 0;
    gets_s(str);
    __asm {
        MOV EAX, 0
        LEA EBX, str
    _GETLEN:
        MOV CL, [EBX]
        TEST CL, CL
        JE OVER
        INC EBX
        INC EAX
        JMP _GETLEN
    ;
OVER:
    MOV len, EAX
}
```

选择Microsoft Visual Studio 调试控制台

```
this is a test
len = 14
D:\C++Project\ConsoleApplication1\Debug\ConsoleApplication1.exe (进程 13324)已退出, 代码为 0。
按任意键关闭此窗口. . .
```

40. 假设有一个整型数组, 存放有13个无符号整数, 计算“奇数之和”与“偶数之和”之差的绝对值, 并显示输出

```
#include <stdio.h>
unsigned a[13];
int main() {
    // 1 2 3 4 5 6 7 8 9 10 11 12 13
    int i;
    for (i = 0; i < 13; i++) {
        scanf_s("%d", &a[i]);
    }
    int result;
    __asm {
        LEA EBX, a
        MOV ESI, 0
        MOV ECX, 13
        MOV EDX, 0 //奇数和
        MOV EDI, 0 //偶数和
    _JUDGE:
        MOV EAX, [EBX + ESI * 4]
        TEST EAX, 1 // 如果是偶数, 末位是0
        JP JISHU // 如果是奇数, 跳转
        ADD EDI, EAX //加到偶数
        ;
    NEXT:
        INC ESI // 下标+1
        DEC ECX // 计数器-1
        JE RESCMP
        JMP _JUDGE
        ;
    JISHU:
        ADD EDX, EAX // 加到奇数
        JMP NEXT
        ;
    RESCMP:
        SUB EDX, EDI
        JS ABS // 判断是否为负
        JMP OVER
    ABS:
}
```

```

        NEG EDX // 对负取负，即取绝对值
OVER:
    MOV result, EDX
}

printf("%d", result);
return 0;
}

```

结果:

The screenshot shows the Visual Studio IDE with two panes. The left pane displays the source code for a C++ program that reads 13 integers and calculates their sum. The right pane shows the assembly code generated for the program, which includes instructions for loading the array, setting up a loop, and performing conditional jumps based on the parity of the sum.

```

n1.cpp  x
tion1  (全局范围)
#include <stdio.h>
unsigned a[13];
int main() {
    // 1 2 3 4 5 6 7 8 9 10 11 12 13
    int i;
    for (i = 0; i < 13; i++) {
        scanf_s("%d", &a[i]);
    }
    int result;
    __asm {
        LEA EBX, a
        MOV ESI, 0
        MOV ECX, 13
        MOV EDX, 0 //奇数和
        MOV EDI, 0 //偶数和
        _JUDGE:
        MOV EAX, [EBX + ESI * 4]
        TEST EAX, 1 // 如果是偶数，末位是0
        JP JISHU // 如果是奇数 跳转
    }
}

```

Microsoft Visual Studio 调试控制台

```

1 2 3 4 5 6 7 8 9 10 11 12 13
7
D:\C++Project\ConsoleApplication
按任意键关闭此窗口. . .

```