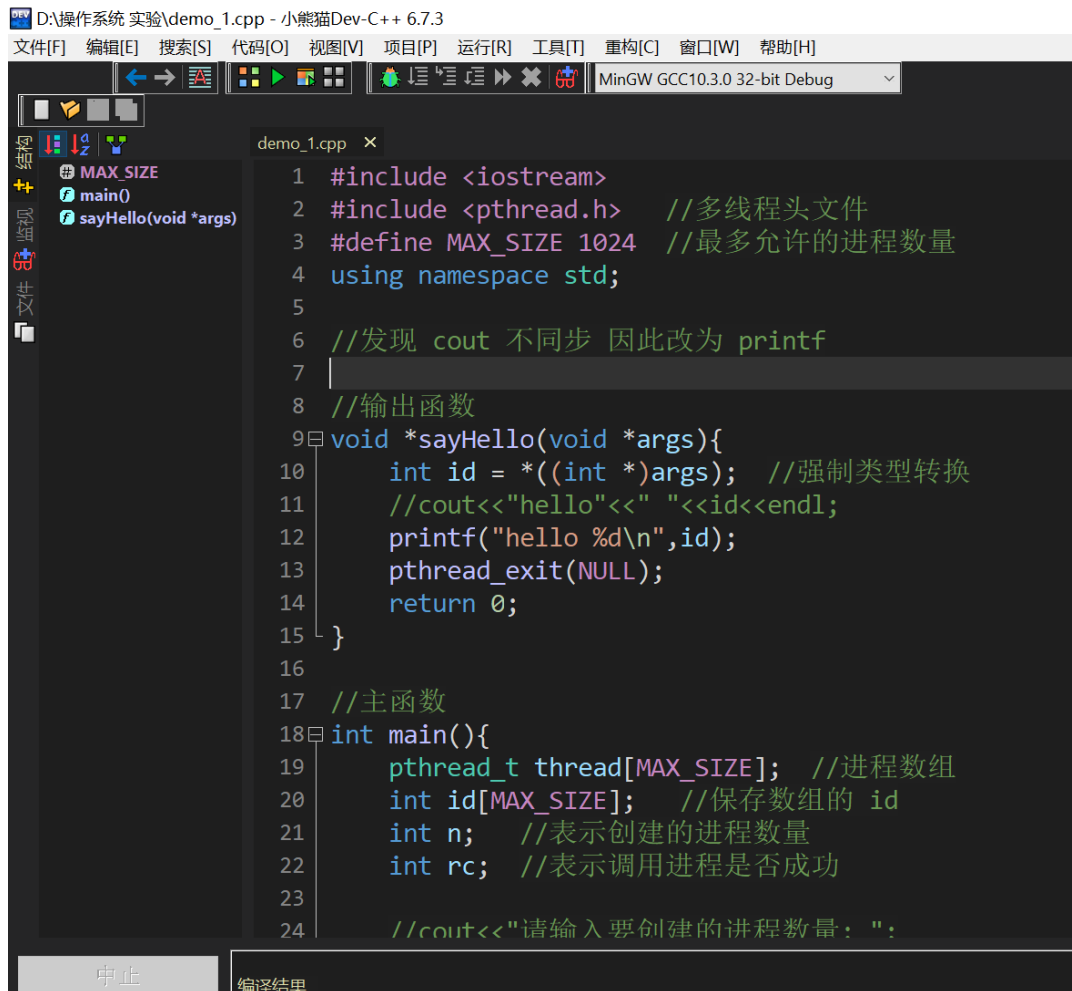


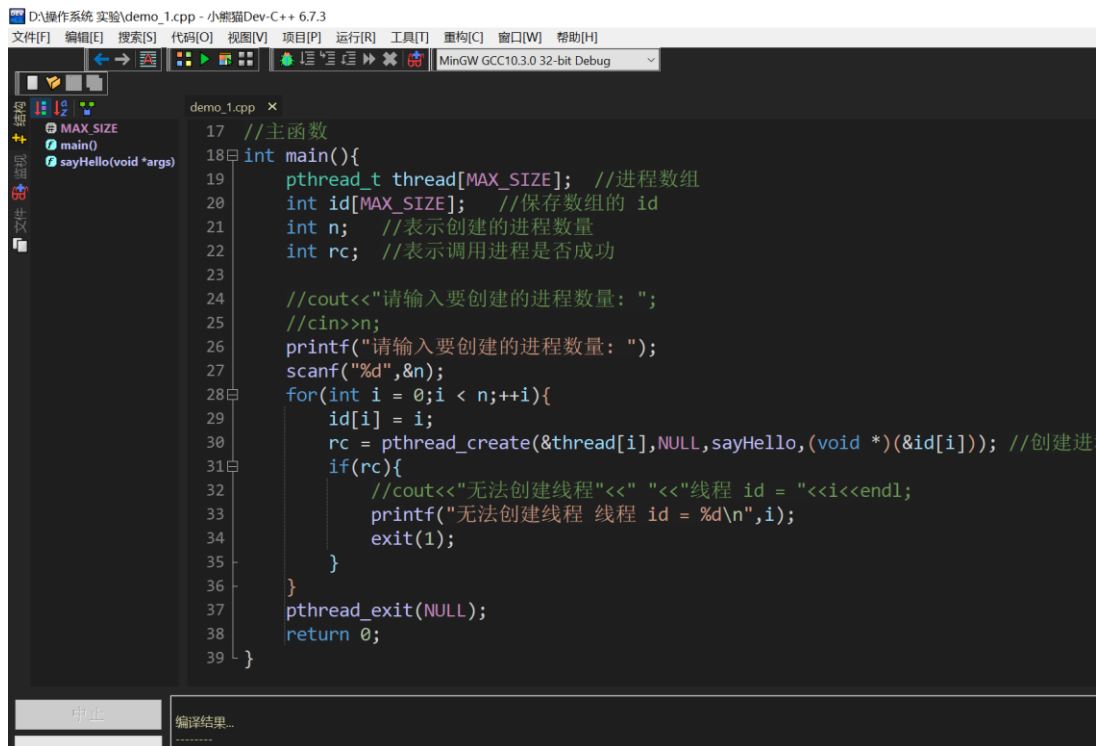
C++代码样例与运行结果：



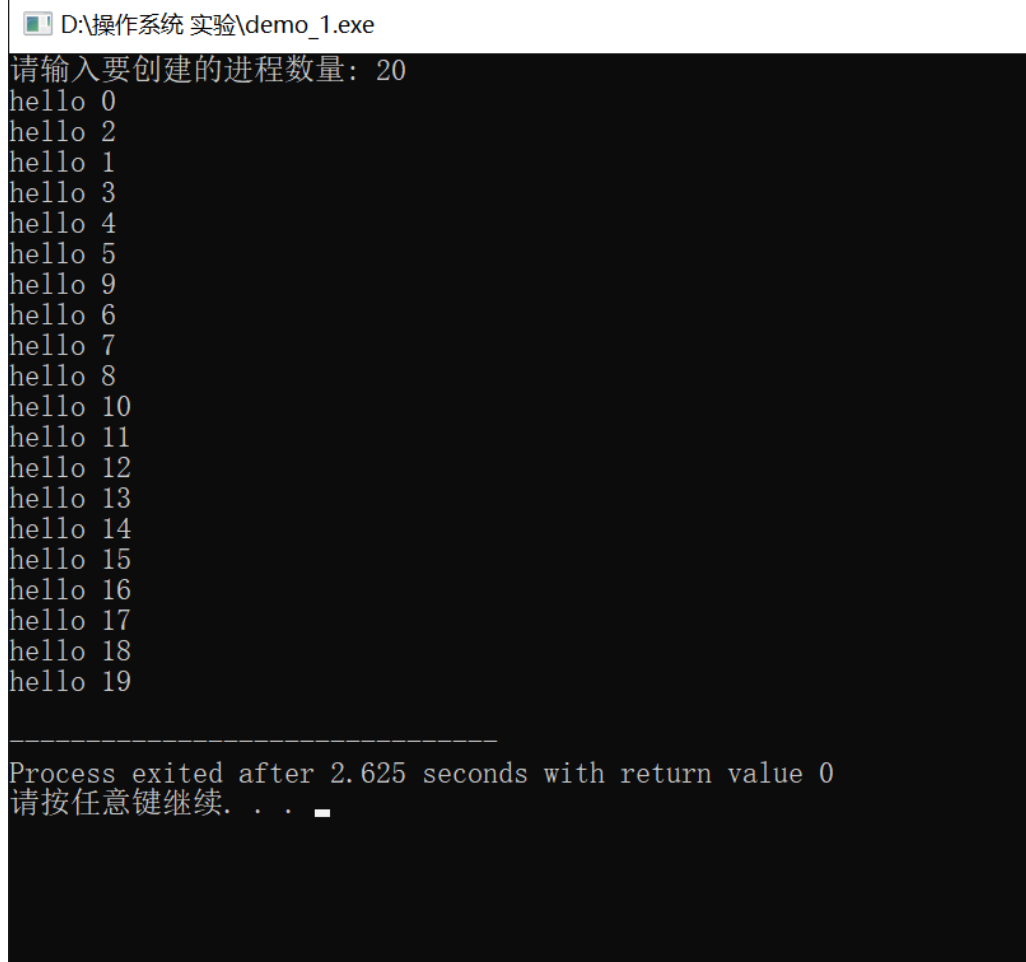
The screenshot shows a C++ IDE with the following components:

- Title Bar:** D:\操作系统 实验\demo_1.cpp - 小熊猫Dev-C++ 6.7.3
- Menu Bar:** 文件[F] 编辑[E] 搜索[S] 代码[C] 视图[V] 项目[P] 运行[R] 工具[T] 重构[C] 窗口[W] 帮助[H]
- Toolbar:** Includes icons for file operations, editing, and running. The dropdown menu shows "MinGW GCC10.3.0 32-bit Debug".
- Left Panel (Project Explorer):** Shows a project named "demo_1.cpp" with files: MAX_SIZE, main(), and sayHello(void *args).
- Main Editor:** Displays the source code for demo_1.cpp.

```
1 #include <iostream>
2 #include <pthread.h> //多线程头文件
3 #define MAX_SIZE 1024 //最多允许的进程数量
4 using namespace std;
5
6 //发现 cout 不同步 因此改为 printf
7
8 //输出函数
9 void *sayHello(void *args){
10     int id = *((int *)args); //强制类型转换
11     //cout<<"hello"<<" "<<id<<endl;
12     printf("hello %d\n",id);
13     pthread_exit(NULL);
14     return 0;
15 }
16
17 //主函数
18 int main(){
19     pthread_t thread[MAX_SIZE]; //进程数组
20     int id[MAX_SIZE]; //保存数组的 id
21     int n; //表示创建的进程数量
22     int rc; //表示调用进程是否成功
23
24     //cout<<"请输入要创建的进程数量：":
```
- Bottom Panel:** Contains a "中止" (Stop) button and a "编译结果..." (Compile Results...) section.



```
17 //主函数
18 int main(){
19     pthread_t thread[MAX_SIZE]; //进程数组
20     int id[MAX_SIZE]; //保存数组的 id
21     int n; //表示创建的进程数量
22     int rc; //表示调用进程是否成功
23
24     //cout<<"请输入要创建的进程数量: ";
25     //cin>>n;
26     printf("请输入要创建的进程数量: ");
27     scanf("%d",&n);
28     for(int i = 0; i < n; ++i){
29         id[i] = i;
30         rc = pthread_create(&thread[i], NULL, sayHello, (void *)(&id[i])); //创建进
31         if(rc){
32             //cout<<"无法创建线程"<<" "<<"线程 id = "<<i<<endl;
33             printf("无法创建线程 线程 id = %d\n",i);
34             exit(1);
35         }
36     }
37     pthread_exit(NULL);
38     return 0;
39 }
```



```
D:\操作系统 实验\demo_1.exe
请输入要创建的进程数量: 20
hello 0
hello 2
hello 1
hello 3
hello 4
hello 5
hello 9
hello 6
hello 7
hello 8
hello 10
hello 11
hello 12
hello 13
hello 14
hello 15
hello 16
hello 17
hello 18
hello 19

-----
Process exited after 2.625 seconds with return value 0
请按任意键继续. . .
```

Java 代码样例与运行结果:

```
import java.util.Scanner;
class MyThread implements Runnable {
    String name;
    Thread t;

    MyThread (String thread){//线程构造函数

        name = thread;
        t = new Thread(this, name);
        System.out.println("New thread: " + t);
        t.start();
    }

    public void run() { //输出函数

        System.out.println("hello"+" "+name    );
    }
}

class MultiThread {

    public static void main(String args[]) { //主函数

        Scanner input = new Scanner(System.in);
        int i= input.nextInt();

        for(int x=0;x<i;x++){//输入一个整数，生成相应个数的线程
            new MyThread(String.valueOf(x));
        }
        try {

            Thread.sleep(1000); //使线程休眠 1s

        } catch (InterruptedException e) { //异常处理

            System.out.println("Main thread Interrupted");
        }

        System.out.println("Main thread exiting."); //线程结束
    }
}
```

```
"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "  
3  
New thread: Thread[0,5,main]  
New thread: Thread[1,5,main]  
New thread: Thread[2,5,main]  
hello 0  
hello 1  
hello 2  
Main thread exiting.
```