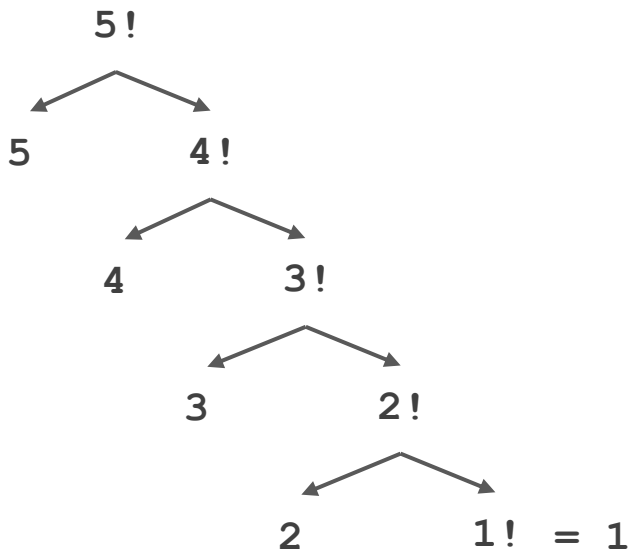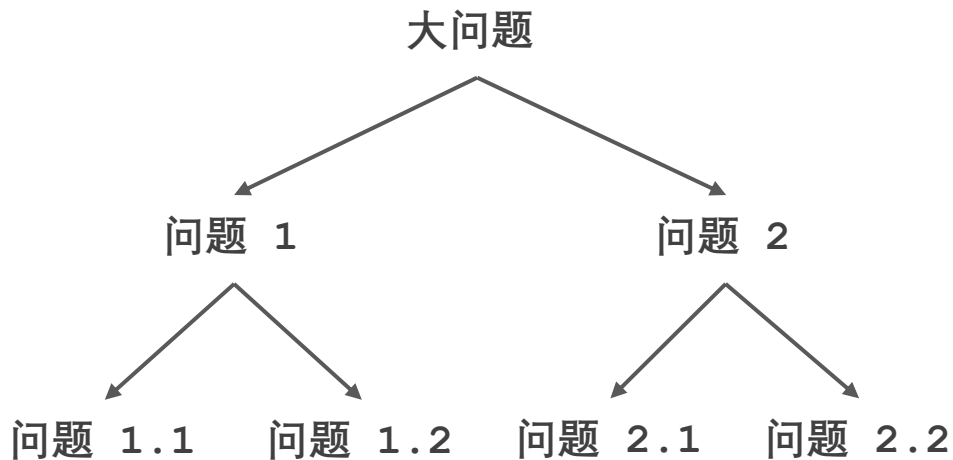# 递归

什么是递归

- 函数定义中调用函数本身，被称为递归。

- 递归解决问题的思路：拆分和合并。
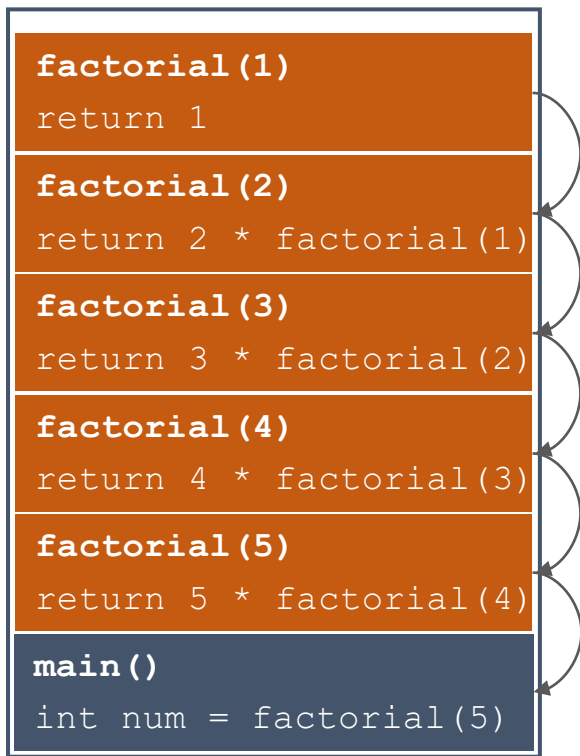
```
5! = 5 * 4 * 3 * 2 * 1 = 5 * 4!

n! = n * (n - 1)!
```

递归内存图解

```cpp
int factorial(int n) {
    if (n == 1) {
        return 1;
    } else {
        return n * factorial(n - 1);
    }
}

int main() {
    int num = factorial(5);
    cout << num << endl;
}
```

factorial(1) return 1
factorial(2) return 2 * factorial(1)
factorial(3) return 3 * factorial(2)
factorial(4) return 4 * factorial(3)
factorial(5) return 5 * factorial(4)
main() int num = factorial(5)

Thanks

牛客网
NOWCODER