

此為河內塔程式實作範例:

```
hanoi.cpp* x
selfstudy (全域範圍) main0
4 using namespace std;
5
6 class Hanoi {
7 public:
8     void HanoiTower(int, char, char, char);
9 };
10 void Hanoi::HanoiTower(int n, char a, char b, char c) {
11     if (n == 1){
12         cout << " 1 " << a << " -> " << c << "\n";
13     }else {
14         HanoiTower(n - 1, a, c, b);
15         cout << " " << n << " " << a << " -> " << c << "\n";
16         HanoiTower(n - 1, b, a, c);
17     }
18 }
19 int main() {
```

```
selfstudy (全域範圍) main0
19 int main() {
20     Hanoi obj;
21     int n;
22
23     char A = 'A';
24     char B = 'B';
25     char C = 'C';
26     cout << "How many disk in A?\n";
27     cin >> n;
28     if (n == 0){
29         cout << "no disk";
30     }else
31         obj.HanoiTower(n, A, B, C);
32     system("PAUSE");
33
34     return 0;
35 }
36
```

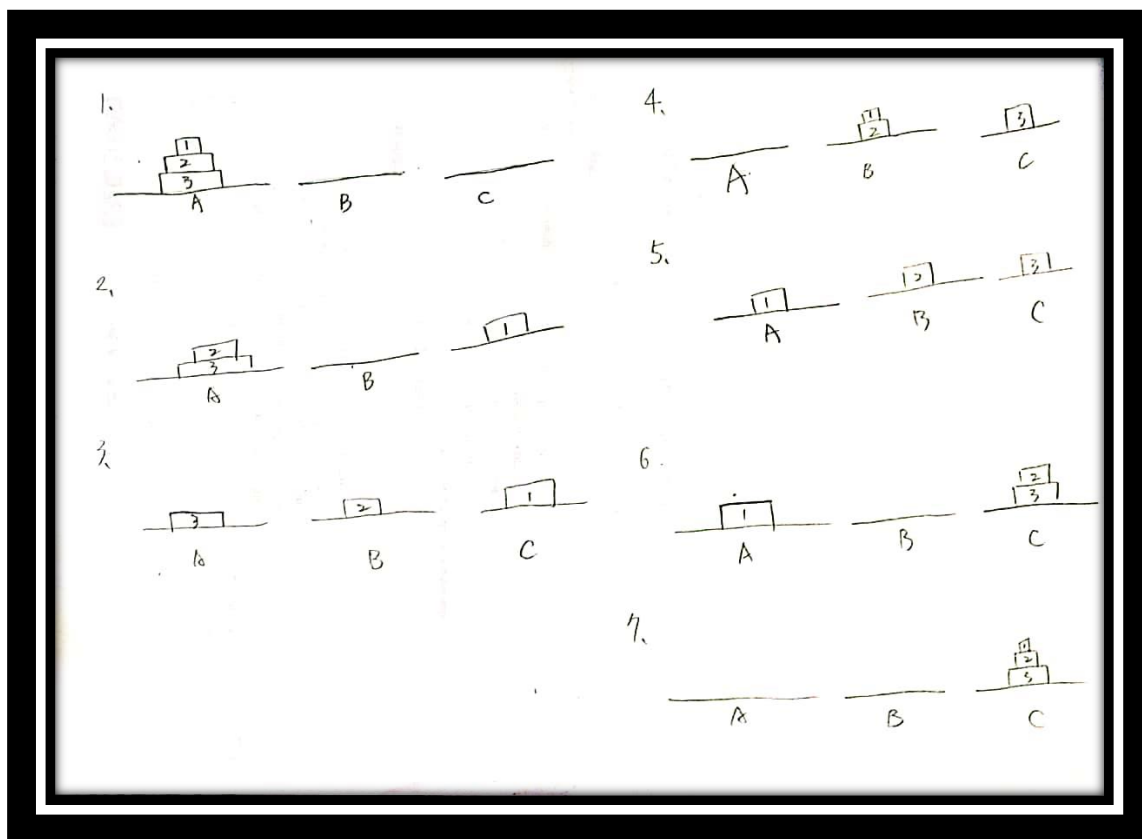
輸出結果:

```
C:\Users\Dylan\source\repos\selfstudy\Debug\HanoiTower.exe
How many disk in A? 3
1 A -> C
2 A -> B
1 C -> B
3 A -> C
1 B -> A
2 B -> C
1 A -> C
請按任意鍵繼續 . . .
```

程式執行時的過程:

1. 首先以(3,A,B,C)呼叫
 2. 呼叫(2,A,C,B)
 3. 呼叫(1,A,B,C) print 1 A->C
 4. Print 2 A->B
 5. 呼叫(1,C,A,B) print 1 C->B
 6. Print 3 A->C
 7. 呼叫(2,B,A,C)
 8. 呼叫(1,B,C,A) print 1 B->A
 9. Print 2 B->C
 10. 呼叫(1,A,B,C) print 1 A->C

河內塔搬運情形：



(3, A, B, C)

(2, A, C, B)

(1, A, B, C)

1. print 1 A \rightarrow C

2. print 2 A \rightarrow B

(1, C, A, B)

3. print 1 C \rightarrow B

4. print 3 A \rightarrow C

(2, B, A, C)

(1, B, C, A)

5. print 1 B \rightarrow A

6. print 2 B \rightarrow C

(1, A, B, C)

7. print 1 A \rightarrow C