

第一次作业

第一题

```
1  #include <iostream>
2  #include <vector>
3  #include <iomanip>
4  using namespace std;
5  vector<int> fac({1,1});
6  int get_fac(int pos);
7  inline int ncr(int n,int m);
8  int main()
9  {
10     for (int i = 0; i < 10; i++) {
11         for (int j = 0; j < 9 - i; j++)cout << "  ";
12         for (int j = 0; j <= i; j++)cout << setw(6) <<
setiosflags(ios::left) << ncr(i, j);
13
14         cout << endl;
15     }
16 }
17
18 int get_fac(int pos) {
19     while (fac.size() <= pos) {
20         fac.push_back(fac.back() * fac.size());
21     }
22     return fac.at(pos);
23 }
24
25 inline int ncr(int n,int m) {
26     return get_fac(n)/(get_fac(m)*get_fac(n-m));
27 }
```

```

          1
        1 1
      1 2 1
    1 3 3 1
  1 4 6 4 1
1 5 10 10 5 1
  1 6 15 20 15 6 1
    1 7 21 35 35 21 7 1
      1 8 28 56 70 56 28 8 1
        1 9 36 84 126 126 84 36 9 1

```

第二题

```

1  #include <iostream>
2  using namespace std;
3  int main() {
4      int sum_a = 0, sum_b = 0, sum_c = 0, sum_d=0;
5      int m, n;
6      cin >> m >> n;
7
8      int* a = new int[100];
9      int** b = new int* [20];
10     int*** c = new int** [9];
11     int** d = new int* [m];
12     //-----//
13     for (int i = 0; i < 100; i++) {
14         a[i] = i;
15         sum_a += a[i];
16     }
17
18     for (int i = 0; i < 20; i++) {
19         b[i] = new int[25];
20         for (int j = 0; j < 25; j++) {
21             b[i][j] = i * 25 + j;
22             sum_b += b[i][j];
23         }

```

```
24     }
25
26     for (int i = 0; i < 9; i++) {
27         c[i] = new int* [8];
28         for (int j = 0; j < 8; j++) {
29             c[i][j] = new int[5];
30             for (int k = 0; k < 5; k++) {
31                 c[i][j][k] = i * 100 + j * 10 + k;
32                 sum_c += c[i][j][k];
33             }
34         }
35     }
36
37     for (int i = 0; i < m; i++) {
38         d[i] = new int[n];
39         for (int j = 0; j < n; j++) {
40             d[i][j] = i * n + j;
41             sum_d += d[i][j];
42         }
43     }
44     //-----//
45     delete[] a;
46
47     for (int i = 0; i < 20; i++) {
48         delete[] b[i];
49     }
50     delete[] b;
51
52     for (int i = 0; i < 9; i++) {
53         for (int j = 0; j < 8; j++) {
54             delete[] c[i][j];
55         }
56         delete[] c[i];
57     }
58     delete[] c;
59
60     for (int i = 0; i < m; i++) {
61         delete[] d[i];
62     }
63     delete[] d;
64
65     cout << "sum_a:" << sum_a << " " << "sum_b:" << sum_b << " "
<< "sum_c:" << sum_c << " " << "sum_d:" << sum_d << " " << endl;
```

```
6 8
```

```
sum_a:4950  sum_b:124750  sum_c:157320  sum_d:1128
```