

## Solutions

Only the solutions we discussed on the practical will be here. All the other tasks are perfect to practice for the written exam.

### Centroid (from the previous practical)

```
#include<iostream>
using namespace std;

float avg(float t[], int n) {
    float s = 0.0;
    for(int i = 0; i < n; i++) {
        s += t[i];
    }
    return s / n;
}

int main(void) {
    float x[10];
    float y[10];
    float z[10];
    cin >> x[0];
    cin >> y[0];
    cin >> z[0];
    int i = 0;
    while(x[i] != 0 || y[i] != 0 || z[i] != 0) {
        i++;
        cin >> x[i];
        cin >> y[i];
        cin >> z[i];
    }
    cout << "(" << avg(x, i) << ", " << avg(y, i) << ", " << avg(z, i) << ")" << endl;

    return 0;
}
```

### Second step:

```
#include<iostream>
using namespace std;

float avg(float t[], int n) {
    float s = 0.0;
    for(int i = 0; i < n; i++) {
        s += t[i];
    }
    return s / n;
}

int main(void) {
    float *x;
    float *y;
    float *z;
    int n;
    cin >> n;
    x = new float[n];
    y = new float[n];
    z = new float[n];
    for(int i = 0; i < n; i++) {
        cin >> x[i];
    }
}
```

```
    cin >> y[i];
    cin >> z[i];
}
cout << "(" << avg(x, n) << ", " << avg(y, n) << ", " << avg(z, n) << ")" << endl;

delete[] x;
delete[] y;
delete[] z;

return 0;
}
```

### String slice

```
#include<iostream>

using namespace std;

char* slice(char* str, int n, int m) {
    int size = m - n + 2;

    char* retval = new char[size];
    for(int i = 0; i < size; i++) {
        retval[i] = str[i + n];
    }

    retval[size - 1] = '\\0';

    return retval;
}

int main(void) {

    char c[] = "batman";
    char* s = slice(c, 1, 4);

    cout << s << endl;

    delete[] s;

    return 0;
}
```