

Solutions and commentary for exam 2024-10-23 in DA4007

Part A: multiple choice

1. A
2. D
3. B
4. D
5. C

Part B: general questions

6.

- A. `wc -l starfield.csv`
- B. `sort starfield.csv | uniq -d | wc -l`
- C. `grep "1\\.23456"`. Just running `grep 1.23456` matches patterns like "1k23456" as well.

7.

```
#include <iostream>

using namespace std;

int main(int argc, char *argv[]) {
    if (argc < 2) {
        cout << "Usage: rev <string>" << endl;
        exit(1);
    }

    for (int i=strlen(argv[1]); i>=0; i--) {
        cout << argv[1][i];
    }
    cout << endl;
}
```

8.

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

class Point {
public: // Usually not recommended
    float x, y;

    Point(float xx, float yy) {
        x = xx;
        y = yy;
    }

    float magnitude() {
        return sqrt(x*x + y*y);
    }
};

int main() {
    Point p(2.0, 2.0);
    cout << p.x << ", " << p.y << endl;
    cout << "Magnitude: " << p.magnitude() << endl;
}
```

9. (1) The type of the return value is not given in the function head and (2) the loop starts at 1, while the first element starts at 0.

10. A combined solution for questions A and B is here:

```
#include <iostream>

using namespace std;

int main() {
    float sum=0.0;
    string line;

    try {
        while (getline(cin, line)) {
            sum += stof(line);
        }
        cout << sum << endl;
    }
    catch (invalid_argument) {
        cerr << "Bad input" << endl; // Written to the error stream
        exit(1);                      // Ensure that an error code is given to the OS
    }
}
```