Introduction to C & C++

Assignments 04: File Parsing

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Parsing a file with specified format

1. Write a class named **Mesh** with fields: **faces** (a m*3 array using std::vector<std::vector<int> >, m is the number of faces) & **vertices** (a n*3 array using std::vector<std::vector<float> >, n is the number of vertices)

2. Read **catHead_v131.off** to fill an instance of **Mesh** using a member function of Mesh named **parsing**(const char* filename).

Use std::ifstream, std::string, std::stringstream

3. Overload the input (**<<**) operator to read **catHead_v131.off**

4. Write a **save(const char* filename)** member function to output a result file in the following formats, e.g.:

Number of Vertices: 131

Number of Faces: 282

Vertices:

-0.00829827 0.583053 0.070454

…

0.167032 0.573229 0.24299

Faces:

2 1 0

…

4 1 3

- Use std::ofstream, std::string, std::stringstream

5 . Overload the output (**>>**) operator to save an instance of **Mesh** into **catHead_v131.txt**

6. Write a win32 console application (parsingoff) to accomplish the mission. The app should take two command arguments: the input file name & the output file name, e.g.:

parsingoff catHead_v131.off catHead_v131.txt