

一、情报督察

1.1 源代码

1.1.1 codebook_generator.cpp

```
1. #include <fstream>
2. #include <iostream>
3. #include <string>
4.
5. int main(int argc, char *argv[])
6. {
7.     if (argc != 2)
8.     {
9.         std::cout << "Usage: " << argv[0] << " codebook2.txt\n";
10.        return 1;
11.    }
12.    srand(1);
13.    int codebook[256] = {}, temp1, temp2;
14.    for (int i = 0; i < 256; i++)
15.    {
16.        codebook[i] = i;
17.    }
18.    for (int i = 0; i < 256; i++)
19.    {
20.        temp1 = rand() % 256;
21.        temp2 = rand() % 256;
22.        codebook[temp1] ^= codebook[temp2] ^= codebook[temp1] ^= codebook[temp2];
23.    }
24.
25.    std::string codebook_name = argv[1];
26.    std::ofstream outfile(codebook_name, std::ios_base::out | std::ios_base::binary);
27.    for (int i = 0; i < 256; i++)
28.    {
29.        std::cout << codebook[i] << ' ';
30.        outfile << codebook[i] << ' ';
31.    }
32.
33.    outfile.close();
34.
35.    return 0;
36. }
```

1.1.2 encrypt.cpp

```
1. #include <iostream>
2. #include <string>
3. #include <fstream>
4. #include <sstream>
5.
6. int main(int argc, char *argv[])
7. {
8.     if(argc != 4)
9.     {
10.         std::cout << "Usage: " << argv[0] << " codebook infile outfile\n";
11.         return 1;
12.     }
13.     std::string codebookFile_name = argv[1], inFile_name = argv[2], outFile_name = argv[3], msgs, encrypt_msgs;
14.     std::ifstream codebookFile(codebookFile_name), inFile(inFile_name);
15.     std::ofstream outFile(outFile_name);
16.     std::ostringstream outbuff;
17.     int codebook[256], i = 0;
18.     while(!codebookFile.eof())
19.     {
20.         codebookFile >> msgs;
21.         // std::cout << msgs << ' ';
22.         codebook[i] = std::atoi(msgs.c_str());
23.         // std::cout << codebook[i] << ' ';
24.         ++i;
25.     }
26.
27.     while(!inFile.eof())
28.     {
29.         inFile >> msgs;
30.         //      // std::cout << msgs << '\n';
31.
32.         for (auto it = msgs.begin(); it != msgs.end(); ++it)
33.         {
34.             int temp = static_cast<int>(*it);
35.             outbuff << codebook[temp] << ' ';
36.         }
37.         outbuff << codebook[' '] << ' ';
38.     }
39.     encrypt_msgs = outbuff.str();
40.     std::cout << encrypt_msgs << '\n';
41.     outFile << encrypt_msgs;
```

```
42.     inFile.close();
43.     outFile.close();
44. }
```

1.1.3 decrypt.cpp

```
1.  #include <iostream>
2.  #include <string>
3.  #include <fstream>
4.  #include <sstream>
5.
6.  int main(int argc, char *argv[])
7.  {
8.      if(argc != 4)
9.      {
10.         std::cout << "Usage: " << argv[0] << " codebook infile outfile\n";
11.         return 1;
12.     }
13.     int decodebook[256] = {};
14.     std::string codebookFile_name = argv[1], inFile_name = argv[2], outFile_name = argv[3];
15.     std::ifstream codebookFile(codebookFile_name), inFile(inFile_name);
16.     std::ofstream outFile(outFile_name);
17.     std::ostringstream outbuff, decodebookbuff;
18.     std::string msgs, decrypt_msgs;
19.
20.     for (int i = 0; i < 256; ++i)
21.     {
22.         codebookFile >> msgs;
23.         decodebook[std::atoi(msgs.c_str())] = i;
24.         // std::cout << decodebook[std::atoi(msgs.c_str())] << '\n';
25.     }
26.
27.
28.     while(!inFile.eof())
29.     {
30.         inFile >> msgs;
31.         // std::cout << msgs << '\n';
32.         outbuff << static_cast<char>(decodebook[std::atoi(msgs.c_str())]);
33.     }
34.     decrypt_msgs = outbuff.str();
35.     std::cout << decrypt_msgs << '\n';
36.     outFile << decrypt_msgs;
37.     inFile.close();
38.     outFile.close();
```

```
39. }
```

1.2 运行结果

1.2.1 文字加密

码本生成：

```
PS D:\workspace\LearnCXX\HW3> .\codebook_generator.exe codebook2.txt
238 1 215 129 106 166 185 173 45 56 137 143 148 216 133 68 85 177 115 43 5 42 258 23 112 25 26 253 68 284 154 138 241 33 69 95 136 254 223 151 27 146 248 44 288 174 46 187 47 49 32 128 180 287 240 55 181 139 222 194 192
183 189 65 83 142 66 3 134 281 197 180 53 4 0 75 76 245 36 28 0 81 13 246 167 38 86 182 88 138 125 178 92 212 185 14 126 255 224 116 84 123 232 184 198 7 165 196 227 22 110 111 127 233 161 288 51 183 122 74 150 218 82 15
124 226 39 24 235 64 286 239 21 153 242 181 94 61 63 188 247 220 191 117 9 157 37 147 148 214 209 193 152 252 231 90 121 156 135 158 97 16 162 163 159 93 34 29 243 10 91 171 172 50 79 175 282 99 234 18 58 145 182 48 54
114 186 17 188 189 176 52 179 155 144 195 187 168 198 199 77 8 73 217 2 213 48 211 20 67 218 19 118 244 169 62 72 113 35 31 164 221 71 38 98 6 87 41 228 219 128 96 57 89 178 225 236 237 80 131 12 78 141 149 59 283 238 28
5 78 249 229 251 11 184 132 168
```

原文：hello c++ 123 456

密文：

```
PS D:\workspace\LearnCXX\HW3> .\encrypt.exe codebook2.txt infile.txt encrypt_outfile.txt
190 123 227 227 111 241 116 44 44 241 49 32 128 241 100 207 240 241
```

翻译：

```
PS D:\workspace\LearnCXX\HW3> .\decrypt.exe codebook2.txt encrypt_outfile.txt decrypt_outfile.txt
hello c++ 123 456
```

1.2.2 文件加密

Win10 下不知道怎么生成二进制文件