# Ex1

**generate\_1.cpp**

#include <cstdio>  
#include <ctime>  
#include <fstream>  
#include <iostream>  
using namespace std;  
int main()  
{  
 ofstream outputFile;  
 outputFile.open("IPv4.csv");  
 srand(time(0));  
 for (int i = 1; i <= 100; i++)  
 {  
 outputFile << rand() % 256 << '.' << rand() % 256 << '.' << rand() % 256 << '.' << rand() % 256 << ' ';  
 char str[50];  
 time\_t now = time(NULL);  
 strftime(str, 50, "%Y-%m-%d %H:%M:%S", localtime(&now));  
 outputFile << str << endl;  
 }  
 outputFile.close();  
}

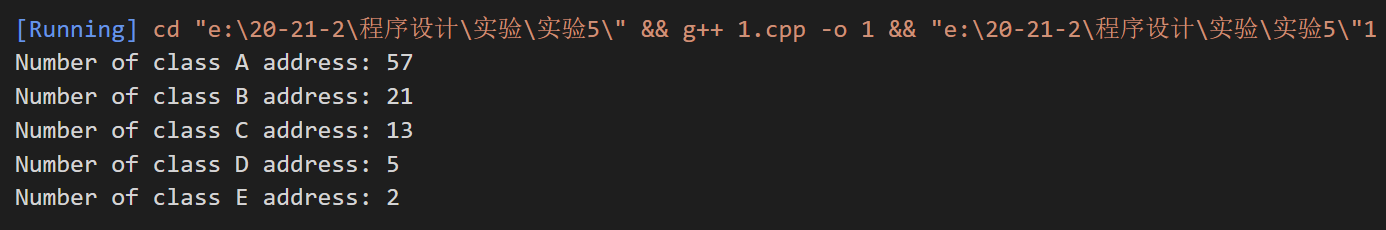
**IPv4.csv**

240.139.208.242 2021-05-11 20:01:29  
45.76.108.195 2021-05-11 20:01:29  
5.32.32.93 2021-05-11 20:01:29  
92.233.148.210 2021-05-11 20:01:29  
204.112.191.77 2021-05-11 20:01:29  
162.87.10.165 2021-05-11 20:01:29  
41.80.179.50 2021-05-11 20:01:29  
44.141.112.224 2021-05-11 20:01:29  
182.120.86.129 2021-05-11 20:01:29  
28.163.248.104 2021-05-11 20:01:29  
61.2.211.51 2021-05-11 20:01:29  
9.88.234.232 2021-05-11 20:01:29  
64.239.173.68 2021-05-11 20:01:29  
124.140.31.79 2021-05-11 20:01:29  
114.162.56.52 2021-05-11 20:01:29  
117.198.136.80 2021-05-11 20:01:29  
60.99.30.137 2021-05-11 20:01:29  
228.175.168.225 2021-05-11 20:01:29  
56.221.220.74 2021-05-11 20:01:29  
49.149.22.189 2021-05-11 20:01:29  
185.161.66.134 2021-05-11 20:01:29  
180.233.252.226 2021-05-11 20:01:29  
65.161.246.203 2021-05-11 20:01:29  
61.193.154.19 2021-05-11 20:01:29  
10.181.241.176 2021-05-11 20:01:29  
142.86.196.87 2021-05-11 20:01:29  
126.26.1.76 2021-05-11 20:01:29  
220.135.95.120 2021-05-11 20:01:29  
190.238.69.188 2021-05-11 20:01:29  
82.85.233.133 2021-05-11 20:01:29  
31.181.181.160 2021-05-11 20:01:29  
141.102.238.80 2021-05-11 20:01:29  
168.215.151.158 2021-05-11 20:01:29  
33.130.147.241 2021-05-11 20:01:29  
149.31.11.222 2021-05-11 20:01:29  
18.24.15.65 2021-05-11 20:01:29  
216.62.128.141 2021-05-11 20:01:29  
92.186.45.96 2021-05-11 20:01:29  
147.70.60.91 2021-05-11 20:01:29  
108.157.204.48 2021-05-11 20:01:29  
159.47.216.252 2021-05-11 20:01:29  
165.26.94.216 2021-05-11 20:01:29  
7.86.193.170 2021-05-11 20:01:29  
220.47.109.66 2021-05-11 20:01:29  
141.249.185.162 2021-05-11 20:01:29  
220.255.17.156 2021-05-11 20:01:29  
37.188.84.163 2021-05-11 20:01:29  
227.78.123.219 2021-05-11 20:01:29  
117.39.124.114 2021-05-11 20:01:29  
35.6.109.51 2021-05-11 20:01:29  
92.37.237.88 2021-05-11 20:01:29  
65.180.192.160 2021-05-11 20:01:29  
104.135.185.162 2021-05-11 20:01:29  
217.12.221.97 2021-05-11 20:01:29  
93.127.197.32 2021-05-11 20:01:29  
249.97.68.120 2021-05-11 20:01:29  
181.38.74.167 2021-05-11 20:01:29  
161.46.8.43 2021-05-11 20:01:29  
26.246.85.144 2021-05-11 20:01:29  
74.144.81.134 2021-05-11 20:01:29  
238.80.72.54 2021-05-11 20:01:29  
92.201.217.214 2021-05-11 20:01:29  
196.247.87.123 2021-05-11 20:01:29  
182.190.111.47 2021-05-11 20:01:29  
228.147.11.68 2021-05-11 20:01:29  
42.122.119.232 2021-05-11 20:01:29  
203.48.194.249 2021-05-11 20:01:29  
254.169.104.26 2021-05-11 20:01:29  
169.189.45.6 2021-05-11 20:01:29  
108.30.76.36 2021-05-11 20:01:29  
225.141.209.92 2021-05-11 20:01:29  
34.77.68.42 2021-05-11 20:01:29  
140.216.135.240 2021-05-11 20:01:29  
195.210.1.145 2021-05-11 20:01:29  
246.59.253.59 2021-05-11 20:01:29  
101.232.76.132 2021-05-11 20:01:29  
32.52.50.185 2021-05-11 20:01:29  
17.243.128.114 2021-05-11 20:01:29  
60.167.253.106 2021-05-11 20:01:29  
70.247.10.142 2021-05-11 20:01:29  
52.92.134.84 2021-05-11 20:01:29  
118.30.240.78 2021-05-11 20:01:29  
36.127.203.255 2021-05-11 20:01:29  
135.53.71.237 2021-05-11 20:01:29  
219.30.29.247 2021-05-11 20:01:29  
83.48.187.233 2021-05-11 20:01:29  
94.175.161.78 2021-05-11 20:01:29  
41.162.11.134 2021-05-11 20:01:29  
101.135.208.24 2021-05-11 20:01:29  
74.70.138.73 2021-05-11 20:01:29  
220.100.247.237 2021-05-11 20:01:29  
109.121.159.125 2021-05-11 20:01:29  
99.228.183.106 2021-05-11 20:01:29  
59.189.70.177 2021-05-11 20:01:29  
206.11.134.176 2021-05-11 20:01:29  
211.55.141.55 2021-05-11 20:01:29  
166.193.44.227 2021-05-11 20:01:29  
72.50.24.167 2021-05-11 20:01:29  
166.82.71.172 2021-05-11 20:01:29  
30.154.157.91 2021-05-11 20:01:29

**1.cpp**

#include <fstream>  
#include <iostream>  
#include <string>  
using namespace std;  
int getFirst(string IP)  
{  
 int tmp = 0;  
 int ptr = 0;  
 while (IP[ptr] != '.')  
 {  
 tmp = tmp \* 10 + IP[ptr] - '0';  
 ptr++;  
 }  
 return tmp;  
}  
int main()  
{  
 ifstream inputFile;  
 inputFile.open("IPv4.csv");  
 string IP, date, time;  
 int ip;  
 int A = 0, B = 0, C = 0, D = 0, E = 0;  
 while (inputFile >> IP >> date >> time)  
 {  
 ip = getFirst(IP);  
 if (ip >= 0 && ip <= 127)  
 A++;  
 else if (ip >= 128 && ip <= 191)  
 B++;  
 else if (ip >= 192 && ip <= 223)  
 C++;  
 else if (ip >= 224 && ip <= 239)  
 D++;  
 else if (ip >= 240 && ip <= 247)  
 E++;  
 }  
  
 cout << "Number of class A address: " << A << endl;  
 cout << "Number of class B address: " << B << endl;  
 cout << "Number of class C address: " << C << endl;  
 cout << "Number of class D address: " << D << endl;  
 cout << "Number of class E address: " << E << endl;  
  
 inputFile.close();  
}

**output**



# Ex2

**2.cpp**

#include<iostream>   
#include<fstream>   
#include<string>   
#include <sstream>   
using namespace std;   
   
class Student   
{   
private:   
 int id;   
 string last\_name;   
 string first\_name;   
 int grade;   
   
public:   
 Student(int inp\_id, string inp\_last, string inp\_first, int inp\_grade):id(inp\_id), first\_name(inp\_first), last\_name(inp\_last), grade(inp\_grade){};   
};   
   
void display()   
{   
 ifstream read("2.dat");   
 if (!read)   
 {   
 cout << "wrong";   
 exit(EXIT\_FAILURE);   
 }   
 string a;   
 while (getline(read, a))   
 {   
 cout << a << endl;   
 }   
 read.close();   
}   
   
void add\_student()   
{   
 ifstream read("2.dat");   
 if (!read)   
 {   
 cout << "wrong";   
 exit(EXIT\_FAILURE);   
 }   
 int A;   
 string B, C;   
 int D;   
   
 ofstream write("2.dat", ios::app);   
 cout << "Recording student's information" << endl;   
   
 bool repeat = 0;   
 int a;   
 cout << "Enter your id(5 nums): ";   
 cin >> a;   
 while ((read>>A>>B>>C>>D)&&(!repeat))   
 {   
 if (A == a)   
 {   
 repeat = 1;   
 cout << "Your've been already recorded" << endl;   
 }   
 }   
   
 if(!repeat)   
 {   
 write << a << " ";   
   
 string k;   
 cout << "Enter your last name: ";   
 cin >> k;   
 write << k << " ";   
   
 string s;   
 cout << "Enter your first name: ";   
 cin >> s;   
 write << s << " ";   
   
 int b;   
 cout << "Enter your grade: ";   
 cin >> b;   
 write << b << endl;   
   
 cout << "ok" << endl;   
   
 write.close();   
 read.close();   
 }   
};   
   
   
void delete\_student()   
{   
 ifstream read("2.dat");   
 if (!read)   
 {   
 cout << "wrong";   
 exit(EXIT\_FAILURE);   
 }   
 int A;   
 string B, C;   
 int D;   
 int a;   
 bool deleted = 0;   
 string new\_file;   
   
 cout << "Deleting student's information" << endl;   
 cout << "Enter the student's id: ";   
 cin >> a;   
   
 while ((read>>A>>B>>C>>D))   
 {   
 if (A != a)   
 {   
 stringstream stream;   
 string A1, D1;   
 stream << A;   
 stream >> A1;   
 stream.clear();   
 stream << D;   
 stream >> D1;   
 stream.clear();   
 new\_file = new\_file + A1 + " " + B + " " + C + " " + D1 + "\n";   
 }   
 else   
 {   
 deleted = true;   
 }   
 }   
 read.close();   
   
 if (deleted == 0)   
 {   
 cout << "No such student" << endl;   
 }   
 else   
 {   
 ofstream write("2.dat",ios::ate);   
 cout << "re:" << new\_file << endl;   
 write << new\_file;   
 write.close();   
 }   
}   
   
int main()   
{   
 add\_student();   
 display();   
 delete\_student();   
}

**output**

