

实验六

```
#include<iostream>
using namespace std;
#include<string>
#include <ctime>    // For time()
#include <cstdlib>   // For srand() and rand()
#include<vector>
#include<iomanip>

const int MAX_TYPE = 62;

//class TravelWay {
//public:
//    TravelWay(int Destination){
//        this->Destination = Destination;
//    }
//    int Destination = 0;
//};

class TicketOffice {
public:
    TicketOffice(int type) {
        if (type == 1)
        {
            this->Destination = "DomesticShort";
            this->money = 10;
        }
        else if (type == 2) {
            this->Destination = "DomesticLong";
            this->money = 100;
        }
        else if (type == 3) {
            this->Destination = "International";
            this->money = 500;
        }
    }
    int getMoney() {
        return this->money;
    }
    string getDestination() {
        return this->Destination;
    }
}
```

```

private:
    int type = 0;
    string Destination;
    int money = 0;
};

class Team {
public:
    Team() {

    }

    Team(int Destination) {
        this->Destination = Destination;
    }

    void setDestination(int Destination) {
        this->Destination = Destination;
    }

    int getDestination() {

        return this->Destination;
    }

    void AddNum() {
        this->num++;
    }

    int getNum() {
        return this->num;
    }

    string getDestinationName() {
        this->ticket = new TicketOffice(this->Destination);
        return this->ticket->getDestination();
    }

    int SumMoney() {
        int money = this->num * this->ticket->getMoney();
        return money ;
    }

    int getMoney() {
        int money = this->ticket->getMoney();
        return money;
    }

    ~Team() {
        if (this->ticket!=NULL)
        {
            this->ticket = NULL;
        }
    }
}

```

```

    }
private:
    int Destination = 0;
    int num = 0;
    TicketOffice* ticket = NULL;
};

Team team[5];

class Luggage
{
public:
    string getName() {
        return this->name;
    }
    void setName(string name) {
        this->name = name;
    }
    //Luggage(string name) {
    //    this->name = name;;
    //};
    //~Luggage();

private:
    string name;
};

class Passenger
{
public:
    Passenger(char name, int LuuggageNum, int Destination, int TravelWay) {
        this->name = name;
        this->LuuggageNum = LuuggageNum;
        this->Destination = Destination;
        this->TravelWay = TravelWay;
        if (this->TravelWay == 0)
        {
            this->ChoseTravelWay = "旅行社";
            for (int i = 0; i < 5; i++)
            {
                if (team[i].getDestination() == this->Destination && team[i].getNum() <
6) {
                    team[i].AddNum();

```

```

        this->isteam = true;
        break;
    }
}
else
{
    this->ChoseTravelWay = "自由行";
}
this->ticket = new TicketOffice(this->Destination);
};
int countMoney() {
    //this->money = this->ticket->getMoney();
    if (this->LuuggageNum <= 2 && this->Destination == 3)
    {
        this->money = 0;
    }
    else if (this->LuuggageNum == 3 && this->Destination == 3) {
        this->money = 100;
    }
    else
    {
        this->money += this->LuuggageNum * 100;
    }
    return this->money;
}
void report() {
    this->coutLuggage();
    cout << "我是乘客" << this->name << ", 选择" << this->ChoseTravelWay<<" , 目的地:
"<< this->ticket->getDestination()<< "\t 携带" <<this->LuuggageNum<< "件行李, 行李编号是
";
    for (int i = 0; i < this->LuuggageNum; i++)
    {
        cout << this->MyLuggage[i].getName();
    }
    cout << "\t 买票需付" << this->ticket->getMoney() << "\t 行李托运费" <<
this->countMoney() << "元" << endl;
}
int getMoney() {
    return this->ticket->getMoney();
}
char getName() {
    return this->name;
}

```

```

void coutLuggage() {
    string namesand = { '1', '2', '3' };
    this->MyLuggage = new Luggage[this->LuuggageNum];
    for (int i = 0; i < this->LuuggageNum; i++)
    {
        string LuggageName = "0";
        LuggageName[0] = this->name;
        LuggageName += '0';
        LuggageName += namesand[i];
        MyLuggage[i].setName(LuggageName);
    }
}

int getDestination() {
    return this->Destination;
}

bool getIsteam() {
    return this->isteam;
}

~Passenger() {
    if (this->ticket != NULL || this->MyLuggage != NULL)
    {
        this->ticket = NULL;
        this->MyLuggage = NULL;
    }
}

private:
    char name;
    int LuuggageNum = 0;
    int Destination = 0;
    int money = 0;
    int TravelWay = 0;
    bool isteam = false;
    string ChoseTravelWay;
    TicketOffice* ticket = NULL;
    Luggage* MyLuggage = NULL;
};

int main() {
    srand(static_cast<unsigned> (time(NULL))); // 初始化随机数发生器
    int PassengerNum = (rand() % (62)) + 1;
    //int PassengerNum = 10;
    int LuggageNum = (rand() % (3)) + 1;
    //int remainder = number % MAX_TYPE;

```

```

int DestinationNum= (rand() % (3)) + 1;
int TravelWayNum = PassengerNum % 2;
string PassengerNameSand =
"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789";
string name = "Aa";
vector<Passenger>PassengerContainer1;
vector<Passenger>PassengerContainer2;
vector<Passenger>PassengerContainer3;
vector<Passenger>PassengerContainer4;
vector<Passenger>PassengerContainer5;
vector<Passenger>PassengerContainer6;
/*Passenger p1('A', 1, 1, 1);
p1.report();*/
//Team teams[5];
for (int i = 0; i < 5; i++)
{
    int x = i+1;
    if (x>3)
    {
        x -= 3;
    }
    team[i].setDestination((rand() % (3)) + 1);
}
/*team = teams;*/
for (int i = 0; i < PassengerNum; i++)
{
    //PassengerNum = (rand() % (62)) + 1;
    LuggageNum = (rand() % (3)) + 1;
    DestinationNum = (rand() % (3)) + 1;
    TravelWayNum = LuggageNum % 2;
    char PassengerName = PassengerNameSand[i];
    Passenger Randpassenger(PassengerName, LuggageNum, DestinationNum,
TravelWayNum);
    if (Randpassenger.getDestination()==1&&!Randpassenger.getIsteam())
    {
        PassengerContainer1.push_back(Randpassenger);
    }
    else if (Randpassenger.getDestination() == 2 && !Randpassenger.getIsteam()) {
        PassengerContainer2.push_back(Randpassenger);
    }
    else if (Randpassenger.getDestination() == 3 && !Randpassenger.getIsteam()) {
        PassengerContainer3.push_back(Randpassenger);
    }
    else if (Randpassenger.getDestination() == 1 && Randpassenger.getIsteam()) {

```

```

        PassengerContainer4.push_back(Randpassenger);
    }
    else if (Randpassenger.getDestination() == 2 && Randpassenger.getIsteam()) {
        PassengerContainer5.push_back(Randpassenger);
    }
    else if (Randpassenger.getDestination() == 3 && Randpassenger.getIsteam()) {
        PassengerContainer6.push_back(Randpassenger);
    }
    Randpassenger.report();
}
cout << ".....\n....." << endl;
cout << "旅行社开始报名。" << endl;
cout << "旅行社共计安排了 5 个旅行团，共计" << PassengerContainer4.size() +
PassengerContainer5.size() + PassengerContainer6.size() << "人报名。" << endl;
cout << "出行的目的地分别是：" << "\t 人数：" << "\t 票价：" << endl;
/*for (int i = 0; i < 5; i++)
{
    cout << teams[i].getDestinationName() << '\t' << team[i].getNum() << '/t' <<
team[i].SumMoney() << endl;
}
*/
/*Passenger p2('B', 2, 2, 0);
p2.report();
Passenger p3('C', 2, 3, 0);
p3.report();*/
for (int i = 0; i < 5; i++)
{
    cout << team[i].getDestinationName();
    cout << setfill(' ') << setw(7) << '\t' << " " << team[i].getNum() << '\t';
    cout << team[i].getMoney() << '\t';
    cout << endl;
}
cout << "售票处开始售票。 \n 售票结束，营业额统计信息如下：" << endl;
cout << "国内短途自由行："
if (PassengerContainer1.empty())
{
    cout << '\t' << "0";
}
else {
    cout << '\t' << PassengerContainer1.size() * PassengerContainer1[0].getMoney();
}
cout << "元" << "\t 乘客姓名："
if (!PassengerContainer1.empty())
{
    for (int i = 0; i < PassengerContainer1.size(); i++)

```

```

        {
            cout << PassengerContainer1[i].getName() << ' ';
        }
    }
    cout << endl;
    cout << "国内长途自由行:";
    if (PassengerContainer2.empty())
    {
        cout << '\t' << "0";
    }
    else {
        cout << '\t' << PassengerContainer2.size() * PassengerContainer2[0].getMoney();
    }
    cout << "元" << "\t 乘客姓名: ";
    if (!PassengerContainer2.empty())
    {
        for (int i = 0; i < PassengerContainer2.size(); i++)
        {
            cout << PassengerContainer2[i].getName() << ' ';
        }
    }
    cout << endl;
    cout << "国际游自由行:";
    if (PassengerContainer3.empty())
    {
        cout << '\t' << "0";
    }
    else {
        cout << '\t' << PassengerContainer3.size() * PassengerContainer3[0].getMoney();
    }
    cout << "元" << "\t 乘客姓名: ";
    if (!PassengerContainer3.empty())
    {
        for (int i = 0; i < PassengerContainer3.size(); i++)
        {
            cout << PassengerContainer3[i].getName() << ' ';
        }
    }
    cout << endl;
    cout << "国内短途团购:";
    if (PassengerContainer4.empty())
    {
        cout << '\t' << "0";
    }

```



```

else {
    cout << '\t' << PassengerContainer4.size() * PassengerContainer4[0].getMoney();
}
cout << "元" << "\t 乘客姓名: ";
if (!PassengerContainer4.empty())
{
    for (int i = 0; i < PassengerContainer4.size(); i++)
    {
        cout << PassengerContainer4[i].getName() << ' ';
    }
}
cout << endl;
cout << "国内长途团购:";
if (PassengerContainer5.empty())
{
    cout << '\t' << "0";
}
else {
    cout << '\t' << PassengerContainer5.size() * PassengerContainer5[0].getMoney();
}
cout << "元" << "\t 乘客姓名: ";
if (!PassengerContainer5.empty())
{
    for (int i = 0; i < PassengerContainer5.size(); i++)
    {
        cout << PassengerContainer5[i].getName() << ' ';
    }
}
cout << endl;
cout << "国际游团购:";
if (PassengerContainer6.empty())
{
    cout << '\t' << "0";
}
else {
    cout << '\t' << PassengerContainer6.size() * PassengerContainer6[0].getMoney();
}
cout << "元" << "\t 乘客姓名: ";
if (!PassengerContainer6.empty())
{
    for (int i = 0; i < PassengerContainer6.size(); i++)
    {
        cout << PassengerContainer6[i].getName() << ' ';
    }
}

```

```

    }

    cout << endl;
}

```

第一次运行截图：

Microsoft Visual Studio 调试控制台

```

我是乘客A, 选择自由行, 目的地: DomesticLong 携带1件行李, 行李编号是A01 买票需付100 行李托运费100元
我是乘客B, 选择自由行, 目的地: DomesticLong 携带1件行李, 行李编号是B01 买票需付100 行李托运费100元
我是乘客C, 选择自由行, 目的地: International 携带3件行李, 行李编号是C01C02C03 买票需付500 行李托运费100元
我是乘客D, 选择自由行, 目的地: International 携带1件行李, 行李编号是D01 买票需付500 行李托运费0元
我是乘客E, 选择自由行, 目的地: DomesticLong 携带1件行李, 行李编号是E01 买票需付100 行李托运费100元
我是乘客F, 选择自由行, 目的地: DomesticShort 携带2件行李, 行李编号是F01 买票需付10 行李托运费100元
我是乘客G, 选择旅行社, 目的地: DomesticShort 携带2件行李, 行李编号是G01G02 买票需付10 行李托运费200元
我是乘客H, 选择旅行社, 目的地: International 携带2件行李, 行李编号是H01H02 买票需付500 行李托运费0元
我是乘客I, 选择自由行, 目的地: DomesticLong 携带1件行李, 行李编号是I01 买票需付100 行李托运费100元
我是乘客J, 选择自由行, 目的地: International 携带1件行李, 行李编号是J01 买票需付500 行李托运费0元
我是乘客K, 选择自由行, 目的地: DomesticLong 携带1件行李, 行李编号是K01 买票需付100 行李托运费100元
我是乘客L, 选择自由行, 目的地: DomesticShort 携带3件行李, 行李编号是L01L02L03 买票需付10 行李托运费300元
我是乘客M, 选择自由行, 目的地: International 携带1件行李, 行李编号是M01 买票需付500 行李托运费0元
我是乘客N, 选择旅行社, 目的地: DomesticShort 携带2件行李, 行李编号是N01N02 买票需付10 行李托运费200元
.....
旅行社开始报名。
旅行社共计安排了5个旅行团, 共计3人报名。
出行的目的地分别是: 人数: 票价:
International 1 500
DomesticLong 0 100
DomesticShort 2 10
DomesticShort 0 10
DomesticLong 0 100
售票处开始售票。
售票结束, 营业额统计信息如下:
国内短途自由行: 20元 乘客姓名: F L
国内长途自由行: 500元 乘客姓名: A B E I K
国际游自由行: 2000元 乘客姓名: C D J M
国内短途团购: 20元 乘客姓名: G N
.....
旅行社开始报名。
旅行社共计安排了5个旅行团, 共计3人报名。
出行的目的地分别是: 人数: 票价:
International 1 500
DomesticLong 0 100
DomesticShort 2 10
DomesticShort 0 10
DomesticLong 0 100
售票处开始售票。
售票结束, 营业额统计信息如下:
国内短途自由行: 20元 乘客姓名: F L
国内长途自由行: 500元 乘客姓名: A B E I K
国际游自由行: 2000元 乘客姓名: C D J M
国内短途团购: 20元 乘客姓名: G N
国内长途团购: 0元 乘客姓名:
国际游团购: 500元 乘客姓名: H
D:\大一下\c++\课上实验\实验6\Holiday\x64\Debug\Holiday.exe (进程 18228) 已退出, 代码为 0。
要在调试停止时自动关闭控制台, 请启用“工具”->“选项”->“调试”->“调试停止时自动关闭控制台”。
按任意键关闭窗口。

```

第二次运行截图：

```
Microsoft Visual Studio 调试控制台
我是乘客A, 选择旅行社, 目的地: International 携带2件行李, 行李编号是A01A02 买票需付500 行李托运费0元
我是乘客B, 选择自由行, 目的地: DomesticLong 携带1件行李, 行李编号是B01 买票需付100 行李托运费100元
我是乘客C, 选择自由行, 目的地: DomesticLong 携带1件行李, 行李编号是C01 买票需付100 行李托运费100元
我是乘客D, 选择自由行, 目的地: DomesticLong 携带3件行李, 行李编号是D01D02D03 买票需付100 行李托运费300元
.....
旅行社开始报名。
旅行社共计安排了5个旅行团, 共计1人报名。
出行的目的地分别是:
DomesticShort 0 10
DomesticShort 0 10
International 1 500
International 0 500
International 0 500
售票处开始售票。
售票结束, 营业额统计信息如下:
国内短途自由行: 0元 乘客姓名:
国内长途自由行: 300元 乘客姓名: B C D
国际游自由行: 0元 乘客姓名:
国内短途团购: 0元 乘客姓名:
国内长途团购: 0元 乘客姓名:
国际游团购: 500元 乘客姓名: A
D:\大一下\c++\课上实验\实验6\Holiday\x64\Debug\Holiday.exe (进程 18000) 已退出, 代码为 0。
要在调试停止时自动关闭控制台, 请启用“工具”->“选项”->“调试”->“调试停止时自动关闭控制台”。
按任意键关闭此窗口。...
```

