

VIT - Vellore

Name: RONIT MEXSON .

Email: ronit.mexson2024@vitstudent.ac.in

Roll no: 24BAI0036

Phone: 9999999999

Branch: ARUMUGA ARUN R_OOPS

Department: admin

Batch: VL2024250502365

Degree: admin

Scan to verify results



BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

VIT V_Structured and OOP_Lab 5_COD_Hard_Friend Functions and Friend Classes

Attempt : 1

Total Mark : 10

Marks Obtained : 7.5

Section 1 : Coding

1. Problem Statement

Seema is building a ticket reservation system and she wants to reserve tickets and cancel for a particular id. She created two classes: Ticket and Reservation. Each Ticket has a private attribute ticketId, and each Reservation has a private attribute reservedTickets (an array of tickets). The Reservation class contains a friend function `cancelReservation(Reservation&, const Ticket&)` that allows a ticket to be canceled from a reservation.

Implement the classes and the `cancelReservation` function and write a program to manage ticket reservations.

Answer

```
//You are using GCC
#include <iostream>
#include <vector>
using namespace std;
```

```
class Ticket{
    int ticketId;
public:
    Ticket(int id) : ticketId(id) {}
    int getTicketId() const{
        return ticketId;
    }
};
```

```
class Reservation{
    int reservedTickets[25];
    int total_num;
public:
    void get(int n){
        total_num = n;
        for (int i = 0; i < total_num; i++){
            cin >> reservedTickets[i];
        }
    }
};
```

```
friend void cancelReservation(Reservation &res, const Ticket &t);
};
```

```
void cancelReservation(Reservation &res,const Ticket &t){
    bool found = false;
    int total = res.total_num;
    int ticketid = t.getTicketId();
```

```
    cout << "Reserved Tickets: ";
    for (int i = 0; i < res.total_num; i++){
        cout << res.reservedTickets[i] << " ";
    }
    cout << endl;
```

```
    for (int i = 0; i < total; i++){
        if (res.reservedTickets[i] == ticketid){
```

```

        found = true;

        for (int j = i; j < total - 1; j++){
            res.reservedTickets[j] = res.reservedTickets[j+1];
        }
        res.total_num--;
    }
}

if (found){
    cout << "Ticket with ID " << ticketid << " has been canceled." << endl;
} else {
    cout << "Ticket with ID " << ticketid << " not found in the reservation." << endl;
}

cout << "Reserved Tickets: ";
for (int i = 0; i < res.total_num; i++){
    cout << res.reservedTickets[i] << " ";
}
}

int main(){
    int n;
    cin >> n;

    Reservation res;
    res.get(n);

    int a;
    cin >> a;

    Ticket ticket(a);
    cancelReservation(res, ticket);

    return 0;
}

```

Status : Partially correct

Marks : 7.5/10