EC 2010 : Computer Programming

Lab 08

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2022/E/126

EC2010

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Code :-

```
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// EC2010

//Group: C

// Lab: 08

// Program Description: Train Ticket Service

// Certificate of Authenticity:

// I certify that the code in the method function main of this project

// is entirely my own work.


#include <iostream>
#include <iomanip>

class Reservation {
private:
   int totalSeats[3];
   int availableSeats[3];
   int pricePerTicket[3];
   int mealPrice;
   int reservationNumber;

public:
   Reservation(int firstClassTotal, int firstClassAvailable, int firstClassPrice,
            int secondClassTotal, int secondClassAvailable, int secondClassPrice,
            int thirdClassTotal, int thirdClassAvailable, int thirdClassPrice,
            int meal)
      : mealPrice(meal), reservationNumber(1) {
         totalSeats[0] = firstClassTotal;
         availableSeats[0] = firstClassAvailable;
         pricePerTicket[0] = firstClassPrice;

         totalSeats[1] = secondClassTotal;
         availableSeats[1] = secondClassAvailable;
         pricePerTicket[1] = secondClassPrice;

         totalSeats[2] = thirdClassTotal;
         availableSeats[2] = thirdClassAvailable;
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        pricePerTicket[2] = thirdClassPrice;
    }

    void displayDetails() {
        std::cout << "Welcome to Advanced Train Ticket Reservation System!\n\n";
        std::cout << "1st class:\nTotal – " << totalSeats[0] << "\nAvailable – " << availableSeats[0] << "\nPrice per ticket – " << pricePerTicket[0] << "\n\n";
        std::cout << "2nd class:\nTotal – " << totalSeats[1] << "\nAvailable – " << availableSeats[1] << "\nPrice per ticket – " << pricePerTicket[1] << "\n\n";
        std::cout << "3rd class:\nTotal – " << totalSeats[2] << "\nAvailable – " << availableSeats[2] << "\nPrice per ticket – " << pricePerTicket[2] << "\nMeal will be provided for " << mealPrice << ".\n\n";
    }

    void makeReservation() {
        std::cout << "Reservation number _" << std::setw(2) << std::setfill('0') << reservationNumber << "\n";
        int classChoice;
        std::cout << "Which class ticket you need? (1/2/3) ";
        std::cin >> classChoice;

        if (classChoice < 1 || classChoice > 3) {
            std::cout << "Invalid choice.\n";
            return;
        }

        classChoice--; // adjusting for array indexing

        int seatsNeeded;
        std::cout << "Do you want a meal? (Y/N) ";
        char mealChoice;
        std::cin >> mealChoice;

        std::cout << "Enter the number of seats you want to reserve: ";
        std::cin >> seatsNeeded;

        if (seatsNeeded > availableSeats[classChoice]) {
            std::cout << "Not enough seats available.\n";
            return;
        }

        int totalCost = seatsNeeded * pricePerTicket[classChoice];
        if (mealChoice == 'Y' || mealChoice == 'y') {
            totalCost += mealPrice;
        }

        std::cout << "Seat is reserved.\n";
        std::cout << "Pay: " << totalCost << "\n\n";

        availableSeats[classChoice] -= seatsNeeded;
```
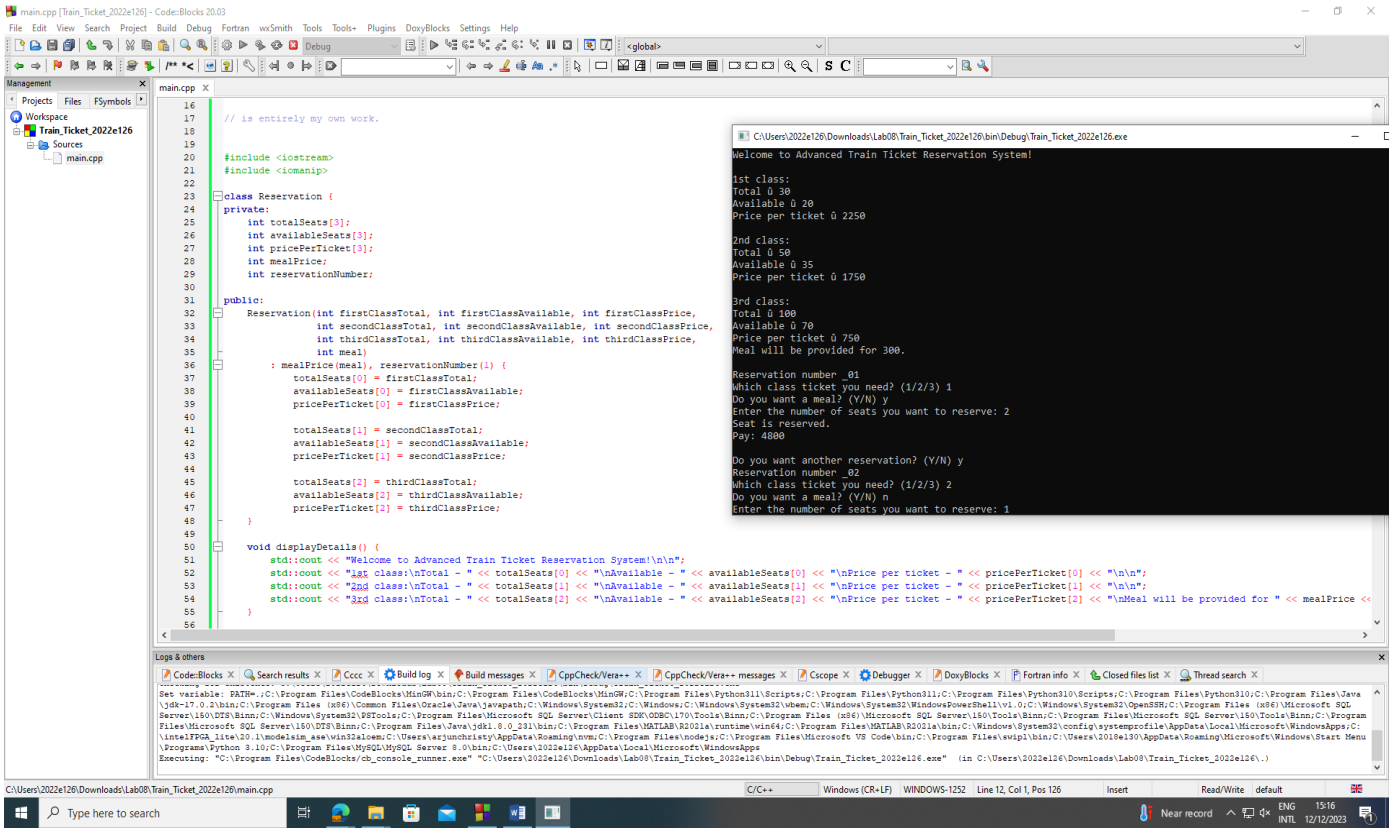

```
        reservationNumber++;
    }
};

int main() {
    Reservation reservation(30, 20, 2250, 50, 35, 1750, 100, 70, 750, 300);
    reservation.displayDetails();

    char anotherReservation;
    do {
        reservation.makeReservation();
        std::cout << "Do you want another reservation? (Y/N) ";
        std::cin >> anotherReservation;
    } while (anotherReservation == 'Y' || anotherReservation == 'y');

    return 0;
}
```



Output :-

```
Welcome to Advanced Train Ticket Reservation System!

1st class:
Total - 30
Available - 20
Price per ticket - 2250

2nd class:
Total - 50
Available - 35
Price per ticket - 1750

3rd class:
Total - 100
Available - 70
Price per ticket - 750
Meal will be provided for 300.

Reservation number _01
Which class ticket you need? (1/2/3) 1
Do you want a meal? (Y/N) y
Enter the number of seats you want to reserve: 2
Seat is reserved.
Pay: 4800

Do you want another reservation? (Y/N) y
Reservation number _02
Which class ticket you need? (1/2/3) 2
Do you want a meal? (Y/N) n
Enter the number of seats you want to reserve: 1
Seat is reserved.
Pay: 1750

Do you want another reservation? (Y/N) n
Process returned 0 (0x0)   execution time : 17.543 s
Press any key to continue.
```