OOP Mini Project Code

# Bus Reservation System

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| #include <iostream>  #include <iomanip>  #include <string.h>  using namespace std;  static int count = 0;  class bus{  string bus\_number;  string bus\_driver, arrival\_time;  string departure\_time, from\_where, to\_where;  char seat[8][4][10];  public:  void new\_bus();  void book\_seat();  void empty\_bus();  void display();  void available\_buses();  void empty\_position(int);  };  bus reservation[10];  void bus :: new\_bus(){  cout << "Enter Bus no.: ";  cin >> reservation[count].bus\_number;  cout << "Enter Driver's Name: ";  cin >> reservation[count].bus\_driver;  cout << "Arrival time: ";  cin >> reservation[count].arrival\_time;  cout << "Departure time: ";  cin >> reservation[count].departure\_time;  cout << "From: ";  cin >> reservation[count].from\_where;  cout << "To: ";  cin >> reservation[count].to\_where;  reservation[count].empty\_bus();  count++;  }  void bus :: book\_seat(){  int seat\_number;  string bus\_num;  book\_again:  cout << "Bus Number: ";  cin >> bus\_num;  int i = 0;  for(i = 0; i <= count; i++){  if((reservation[i].bus\_number).compare(bus\_num) == 0){  break;  }  }  while(i <= count){  cout << "Seat Number: ";  cin >> seat\_number;  if(seat\_number > 32){  cout << "There are only 32 seats Available" << endl;  }  else{  if(!strcmp(reservation[i].seat[seat\_number/4][(seat\_number % 4) - 1], "empty")){  cout << "Enter passenger's Name: ";  cin >> reservation[i].seat[seat\_number/4][(seat\_number % 4) - 1];  break;  }  else{  cout << "The seat number is already reserved" << endl;  }  }  }  if(i > count){  cout << "Invalid Bus Number" << endl;  goto book\_again;  }  }  void bus :: empty\_bus(){  for(int i = 0; i < 8; i++){  for(int j = 0; j < 4; j++){  strcpy(reservation[count].seat[i][j], "empty");  }  }  }  void bus :: display(){  int i;  string bus\_num;  cout << "Enter bus number: ";  cin >> bus\_num;  for(i = 0; i <= count; i++){  if(!(reservation[i].bus\_number).compare(bus\_num)){  break;  }  }  while (i <= count){  for(int j = 0; j < 25; j++){  cout << "- -";  }  cout << endl;  cout << "Bus no. " << setw(20+12) << ":"<< setw(10) << reservation[i].bus\_number << endl;  cout << "Driver " << setw(20+13) <<":"<< setw(10) << reservation[i].bus\_driver << endl;  cout << "Arrival Time " << setw(20+7) <<":"<< setw(10) << reservation[i].arrival\_time << endl;  cout << "Departure Time " << setw(20+5) <<":"<< setw(10) << reservation[i].departure\_time << endl;  cout << "From " << setw(20+15) <<":"<< setw(10) << reservation[i].from\_where << endl;  cout << "To " << setw(20+17) <<":"<< setw(10) << reservation[i].to\_where << endl;  for(int j = 0; j < 25; j++){  cout << "- -";  }  cout << endl;  reservation[0].empty\_position(i);  int a = 1;  for(int k = 0; k < 8; k++){  for(int l = 0; l < 4; l++){  a++;  if(strcmp(reservation[i].seat[k][l], "empty") != 0){  cout << endl << "The seat number " << (a - 1) << " is reserved for " << reservation[i].seat[k][l] << "." << endl;  }  }  }  break;  }  if (i > count){  cout << "Invalid Bus number.";  }  }  void bus :: empty\_position(int l){  int s = 0;  int empty\_seats = 0;  for(int i = 0; i < 8; i++){  cout << endl;  for(int j = 0; j < 4; j++){  s++;  if(!strcmp(reservation[l].seat[i][j], "empty")){  cout << setw(6) << s << ".";  cout << setw(10);  cout << reservation[l].seat[i][j];  empty\_seats++;  }  else{  cout << setw(6) << s << ".";  cout << setw(10);  cout << reservation[l].seat[i][j];  }  }  }  cout << endl;  cout << endl;  cout << "There are " << empty\_seats << " seats empty in Bus no.: " << reservation[l].bus\_number;  }  void bus :: available\_buses(){  for(int i = 0; i < count; i++){  for(int j = 0; j < 25; j++){  cout << "- -";  }  cout << endl;  cout << "Bus no. " << setw(20+12) << ":"<< setw(10) << reservation[i].bus\_number << endl;  cout << "Driver " << setw(20+13) <<":"<< setw(10) << reservation[i].bus\_driver << endl;  cout << "Arrival Time " << setw(20+7) <<":"<< setw(10) << reservation[i].arrival\_time << endl;  cout << "Departure Time " << setw(20+5) <<":"<< setw(10) << reservation[i].departure\_time << endl;  cout << "From " << setw(20+15) <<":"<< setw(10) << reservation[i].from\_where << endl;  cout << "To " << setw(20+17) <<":"<< setw(10) << reservation[i].to\_where << endl;  for(int j = 0; j < 25; j++){  cout << "- -";  }  cout << endl;  }  }  int main(){  int choice;  while(true){  cout << endl;  cout << "1. Install New Bus" << endl;  cout << "2. Reserve a seat" << endl;  cout << "3. Display" << endl;  cout << "4. Display Available Buses" << endl;  cout << "5. Exit" << endl;  cout << "Enter your choice: ";  cin >> choice;  switch (choice){  case 1:  reservation[count].new\_bus();  break;  case 2:  reservation[count].book\_seat();  break;  case 3:  reservation[0].display();  break;  case 4:  reservation[0].available\_buses();  break;  case 5:  return 0;  default:  cout << "Invalid Choice" << endl;  }  }  return 0;  } |