

*Programming Assignment Sheet*

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| To: | Troy Tuckett |
| From: | Learning Team B |
| Class: | PRG/410 |
| Date: | 11/30/2015 |
| Re: | Learning Team Assignment for Week 5 |

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| Design: |
| The program starts by displaying a map of the theater with a 2D array. A menu immediately displays below it to allow the user a choice between selling a ticket, displaying total sales, or quitting the program. If the user chooses to sell a ticket, the program asks for a row number, followed by a seat number. The program then displays the total number of tickets sold, as well as the total number of seats available. The updated map of available seating (“A” for available, “T” for taken) is provided for the user, followed by the menu selection. The user can choose, again, to quit the program, sell another ticket, or view total sales. Viewing the total sales would also display the current map of available seating, followed by the menu selection. |
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| Source Program(s) : |
| # include <iostream>  # include <iomanip>  using namespace std;  //Prototype.  void showTotalSales(double, int);  int main()  {  const char TAKEN = 'T'; //Taken seats.  const char EMPTY = 'A'; //Available seats.  const int row = 11; //Values held in rows.  const int column = 11; //Values held in columns.  int i; //Index of rows.  int j; //Index of columns.  int k; //Counter for displaying columns.  int tickets\_sold = 0; //Number of tickets sold.  char map[row][column]; //2D array to hold seating chart.  char selection; //Menus choices.  double price = 5.00; //Ticket price is $5.00 each.  //Format pricing.  cout << fixed << showpoint << setprecision(2);  //Display a map of the theater.  cout << "Seats ";  //Display numbers 1 to 10 representing the columns.  for (k = 1; k < column; k++)  cout << setw(3) << "" << k;//Spaces out column numbers.  for (i = 1; i < row; i++)//Display row #.  {  cout << endl << "Row " << setw(3) << i;//Spaces out row #.  for (j = 1; j < column; j++)  {  map[i][j] = EMPTY;//Initializes the 2D-array.  //Displays available seating.  cout << setw(3) << "" << EMPTY;  }  }  do  {  //Display the menu.  cout << "\n\nMAIN MENU" << endl;  cout << "---------" << endl;  cout << "Press (1) to Sell a Ticket ($5.00)" << endl;  cout << "Press (2) to Quit" << endl;  cout << "Press (3) to See Total Sales" << endl;  cout << endl;  cout << "Please make a selection: ";  cin >> selection;    if (selection == '1')  {  cout << "Please enter a row and seat number.\n" ;  cout << "Row # :" ;  cin >> i;  cout << "Seat # :" ;  cin >> j;  cout << endl;  //Check if seat is taken.  if(map[i][j] == TAKEN)  {  cout << "Seat Taken!. \n";  continue;//Loop again.  }  else //Sell seat.  {  map[i][j] = TAKEN;  tickets\_sold++;  cout << tickets\_sold << " seat(s) have been sold." << endl;  cout << (100 - tickets\_sold) << " seat(s) remain available." << endl;  cin.ignore();  cout << "Press ENTER to continue.";  cin.get();  cout << endl;  }  //Add the next loop to see effects.  cout << "Seats " ;  for (k = 1; k < column; k++)//Display nums up top 1 - 10.  cout << setw(3) << "" << k;  for(i = 1; i < row; i++)//Making array display what's in it.  {  cout << endl << "Row " << setw(3) << i;  for (j = 1; j < column; j++)  cout << setw(3) << "" << map[i][j];  }  }  //Quit the program.  else if (selection == '2')  return 0;  //Show total sales.  else if (selection == '3')  {  showTotalSales(price, tickets\_sold);  cin.ignore();  cout << "Press ENTER to continue.";  cin.get();  }  //Ask for correct input.  else  cout << "Please enter a valid selection.\n";  }while (selection > '1' || selection < '3');  }  //Function for total sales.  void showTotalSales(double price, int tickets)  {  cout << "Total Sales = $" << (price \* tickets) << endl;  } |
| Output Results: |
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| Testing: |
| Description of testing  The program will generate a map of the theater.  PASS  The program will display the MAIN MENU/ User menu.  PASS  The program will prompt the user for a row number, and a seat/column number.  PASS  The program will display an “A” on available seats.  PASS  The program will display a “T” on taken seats.  PASS  The program will store each sale.  PASS  The program will display total sales when the user chooses (3) to See Total Sales.  PASS  The program displays 10 rows with ten seats  PASS  The program allows user to select the seat and row of their choice  PASS |
| Tested By  Cory Lankford  Tamika McCants  Mario Cuevas II  Larry Mayborg |