Diem Pham

Project 1 – Reserved ticket system pseudocode

ID: 2021347593

In **main()**

do {

print the menu as below to get user input

1. Auditorium 1
2. Auditorium 2
3. Auditorium 3
4. Exit

Get user input by storing it in variable **num** of type int}

While (user input < 1 or user input > 4);

If 1, then

String fileName = “A1.txt”;

If 2, then

String fileName = “A2.txt”;

If 3, then

String fileName = “A3.txt”;

Else exit

Find number of row and column of the auditorium

int **row** = Pass fileName in rowReader method

int **col** = Pass fileName in columnReader method

Call **showSeatArangement** method by passing fileName, number of row, and number of column; then assign it to a 2 dimensional array of String called **seatArray**

Ask user submit row number

Store row number from user in **rowNumber** of type int

Ask user submit starting seat number

Store user input in **startingSeatNumber** of type int

Ask user submit number of tickets

Store user input in **numOfTickets** of type int

Call the **enoughSeats** method to see if the user got the seats or not. If not, call the **recommendSeats** method.

If user input is ‘Y’, which agrees with the recommendation, change the seat number as recommended in .txt file, then call **theEnd** method.

If user input is ‘N’, which refuses the recommendation, then go the main menu, so that the user can pick another auditorium

Here are methods:

**rowReader** method with return type int

public static int rowReader(String fileName) {

use getLineNumber() method to count number of row

store the number of row in variable lineNumber of type int

close the file

return lineNumber;

}

**colReader** method with return type int

public static int columnReader(String fileName) {

create a variable column of type int and assign it to 0

while read line {

use length() method to get length of the line and store it in variable column

}

return column;

}

**showSeatArangement** method with return type 2 dimensional array of String

public static String[][] showSeatArangement(String fileName, int row, int col) {

Create a 2 dimensional array called seats with row x col size

Create a variable i of type int and assign it to 0;

while read line

split the string of each line into an array called w of type String

for (int j = 0; j < col; j++){

copy the element of array w to 2 dimensional array called seats[i][j]

}

increase i by 1;

Print out the 2 dimensional array seats[][];

}

Create a method called **enoughSeats** of type boolean to check if there are enough available seats according to user’s order.

This method has the 2 dimensional array, rowNumber of type int, col of type int, startingSeatNumber of type int, and numOfTickets of type int as parameters.

{

Get the seat info of the chosen row

Create a flag called enough and assign it to false

Create a for loop to check if the seat the user picked is available or not

enough = false if the seat is not available

enough = true if the seat is available

return enough

}

Create a method called **recommendSeats** to offer the best available seats that meet the user criteria if the desired seats are not available.

This method has 2 dimensional return type

{

Get the seat info of the chosen row

Search through the array of seat, and put each group of available seats into an array of its index

For example: the first row ...##..#####........ will have 2 array of available seats as following:

String [][] s = {{4, 5}, {8, 9, 10, 11, 12}}

Get the length of the 2 dimensional array s, which is the number of row of s, then divide it by 2

If (int x = numOfRow/ 2) == 0, then search through the xth row

If (int x = numOfRow/2) != 0, then search though the x round up th row

(because I want to get the middle array of available seats)

If the number of desired seats equals to the length of the middle array, then print the seat numbers

Else search through the next array

}

Create a method called **theEnd** of type void to print the sale report

{

Read A1.txt file

Count the number of seats reserved, and store it in variable numOfReservedSeat of type int

Count the number of open seats, and store it in variable numOfOpenSeat of type int

Count the number of total of the ticket sales, and store it in variable totalTicketSale of type int

Continue read A2.txt file, and A3.file and do the same as in A1.txt file.

Print out the result as the format as below

• Column 1 – labels

o Auditorium 1

o Auditorium 2

o Auditorium 3 o Total

• Column 2 - number of seats reserved for each label

• Column 3 - the number of open seats for each label

• Column 4 - the total of the ticket sales for each label

}