Imagine you are in a crowded baseball stadium watching the New York Yankees play the Boston Red Sox. They are giving away free pan pizzas to fans whose ticket numbers are drawn. The PA announcer calls upon the fan with ticket number “abc123” as the winner of a pan pizza. The Stadium class below locates the position of the ticket number within the tickets 2d array.

Stadium object class is declared with one private instance variable – seatingChart 2d array. The constructor has an argument, chart that is passed in and assigned to the private instance variable.

public class Stadium{  
  
     private String[][] seatingChart;  
  
     public Stadium(String[][] chart){  
          seatingChart = chart;  
     }

Also in the Stadium class is the findTicket method. The ticket number being searched for (ticketID) is passed into the method as a parameter. The seatingChart array is traversed in a nested loop. Once the ticket number has been located, the value of the row and column is identified and returned in a location 1d array.

public int[] findTicket(String ticketID){   
     int[] location = {-1,-1}; //start off with not found  
     for(int row = 0; row < seatingChart.length; row++){   
          for(int col = 0; col < seatingChart[row].length; col++){  
  
               if(seatingChart[row][col].equals(ticketID)){ //found ticket   
                    location[0] = row;   
                    location[1] = col;   
                    return location;   
                }   
           }   
      }   
     return location; //return not found   
}

In the main method, the tickets 2d array is created – it holds the unique ticket numbers. Then the Stadium object is declared and initialized (and the tickets 2d array is passed in). The winning ticket number is assigned to String ticket. It is passed in as an argument to the findTicket method. The location of the ticket is returned from the method and assigned to the array, loc. Finally, the location of the winning ticket is printed.

public static void main(String[] args){  
     String[][] tickets = {{"101", "1a99", "T333"}, {"12345", "abc", "abc123"}};  
  
     Stadium s = new Stadium (tickets);  
     String ticket = "abc123";  
  
     int[] loc = s.findTicket(ticket);  
  
     if(loc[0] == -1 || loc[1] == -1){  
          System.out.println("Ticket not found");  
     }else{  
          System.out.println("The winner is located in seat row " +loc[0] +   
          " and column " + loc[1] + ".");  
          }  
     }  
}