The Perfect Hash Structure

When setting out to test this program one thing to realize is there are many methods in the two main classes, Ticket and PerfectHash. These classes have pretty much been written from scratch. The required menu driver only uses about half of those methods directly. So, complete testing has to be done outside of the menu.

Not counting the constructors, PerfectHash has nine methods. This is because there are different versions of the four main methods for data handling using different signatures. In the Ticket class there are nine non-static methods and seven static methods in addition to constructors. The static methods are mostly for translating between the different representations of the concept of "Ticket".

First there is the the "TicketTest" class. This class tests all of the methods of the Ticket class. The output of this is given below: Program output in BLACK. Input in BLUE.

Create some random Tickets. Print them out.

2-1V-6

toString 2-1V-6 Arielle

seatString 2-1V-6 Arielle Day 2 Section 1 Row V Seat 6

2-4L-10

toString 2-4L-10 Christopher

seatString 2-4L-10 Christopher Day 2 Section 4 Row L Seat 10

2-2J-1

toString 2-2J-1 Hamza

seatString 2-2J-1 Hamza Day 2 Section 2 Row J Seat 1

2-1K-6

toString 2-1K-6 Micaela

seatString 2-1K-6 Micaela Day 2 Section 1 Row K Seat 6

2-1B-6

toString 2-1B-6 Robert

seatString 2-1B-6 Robert Day 2 Section 1 Row B Seat 6

Now test the input method

Please input the customer name.

sfguishfdpigh

Please input the Week Number.

3

Please input the section number.

2

Please input the row.

g

Please input the seat number.

2

Here's a few of the non-static methods

ToString 3-2g-2 sfguishfdpigh

getTicketNumber 3-2g-2

getPurchaser sfguishfdpigh

getCode 2631

That is all the non-static methods

Now switch to the static methods

Please enter a four digit number

2367

3-2L-8

3-2L-8

2367 3-2L-8 2367 // This line should have the same four digits at the beginning and end.

Please enter a four digit number

3578

4-3H-9

4-3H-9

3578 4-3H-9 3578

Please enter a four digit number

2451

3-2U-2

3-2U-2

2451 3-2U-2 2451

Please enter a four digit number

4573

5-3H-4

5-3H-4

4573 5-3H-4 4573

Please enter a four digit number

1689

2-3S-10

2-3S-10

1689 2-3S-10 1689

ParseTicket // Separates the ticket number into the four items: week, section, row and seat.

3

2

g

2

seatInfo Day 3 Section 2 Row g Seat 2 // These three tests use the ticket which was entered above.

encode(ticketNumber) 2631

This completes the test of the Ticket class.

I modified the "RandomStudent" class from before to give me a list of random names and ticket codes. The ticket is randomized by the code number used to address the main array. I'm not entirely sure the randomizer is working correctly. It never seems to get any first digit except for 2. Which is OK for the test runs.

Here is the output from a test run of the PerfectHash class with the TicketApp driver.

How many random entries to start?

5

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

6

2-1A-7 Armando

2-1G-8 Christian

2-2K-8 Carmen

2-3I-9 Bridget

2-4J-6 Raven

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

1

Please input the customer name.

adfgiuhaf;i

Please input the Week Number.

6

Please input the section number.

3

Please input the row.

h

Please input the seat number.

4

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

6

2-1A-7 Armando

2-1G-8 Christian

2-2K-8 Carmen

2-3I-9 Bridget

2-4J-6 Raven

6-3H-4 adfgiuhaf;i

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

2

Please input a Ticket Number to search for

2-3I-9

2-3I-9 Bridget

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

2

Please input a Ticket Number to search for

5-2n-2

The key was not found

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

3

Please input the customer name.

none

Please input the Week Number.

2

Please input the section number.

3

Please input the row.

i

Please input the seat number.

9

2-3I-9 Bridget

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

6

2-1A-7 Armando

2-1G-8 Christian

2-2K-8 Carmen

2-3I-9 Bridget

2-4J-6 Raven

6-3H-4 adfgiuhaf;i

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

4

Please input a Ticket Number to delete

2-4J-6

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

6

2-1A-7 Armando

2-1G-8 Christian

2-2K-8 Carmen

2-3I-9 Bridget

6-3H-4 adfgiuhaf;i

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

5

Input a Ticket Number to update

2-1a-7

Please input the customer name.

Armando

Please input the Week Number.

3

Please input the section number.

2

Please input the row.

s

Please input the seat number.

5

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

6

2-1A-7 Armando

2-1G-8 Christian

2-2K-8 Carmen

2-3I-9 Bridget

3-2S-5 Armando

6-3H-4 adfgiuhaf;i

Please enter one of the following:

-----------------------------------------------

1 to insert new ticket information

2 to fetch a ticket by ticket number

3 to fetch a ticket by seat info

4 to delete a ticket

5 to update a ticket

6 to print the list of sold tickets

7 to exit the program

-----------------------------------------------

7