

AP Computer Science



Mr Hanley



Bonus 2nd Qtr: Hotel Management System



A venture capital firm is interested in investing in a small software startup that will create a hotel reservation system. The hotel reservation system will be marketed to the hotels and motels around the capital district.

The system needs to allow reservations of 50 typical rooms + 4 specialty rooms (honeymoon suite, etc) The system needs to be able to accept reservations for 18 months in advance. (365+182 = 547 days)

* Dynamic Memory * Big O Notation * Stacks * Extreme Programming * Selection Sort * Insertion Sort * Waterfall Model

String * Arrays * ArrayList * Client Server * Artificial Intelligence * Inheritance * Files * Video Games * Short circuit evaluation *

The system should allow;

- Creating reservations
- Cancelling reservations
- Editing reservations
- Configuring rooms (# of beds, smoking or non-smoking, specify # of beds and what types(king, double, queen). Some rooms are suites which include kitchenettes.
- Creating a printed bill for the customer (must include #days, daily rate, room service charges, pay per view movie charges, late checkout charge, extra person in room charge)
- Dropping days as they pass and adding new days;
 - Whenever some reservation agent starts up the system, days older than 547 from the present day should be purged. Any reservations associated with these days should be purged.
 - New days up to and including 547 days from the present day should be added to the system (NOTE: It is possible that ALL days and all reservations be purged from the system in the event that no one has logged in for 547 days)

Project Name	Assign 7 – Hotel Management System
Class 1 Name	TBD

Use Cases for proposed Hotel Management System

2.0

Updated 2/4/2010



- 1. Display all of the available rooms for a certain date**
 - a. An agent requests all rooms for a given date that are available

- 2. Display all of the available rooms for a certain date with certain criteria**
 - a. Display all rooms with a given number of types of beds
 - i. Display all with 1-n King Beds
 - ii. Display all with 1-n Queen Beds
 - iii. Display all with 1-n Double Beds
 - iv. Display all non-smoking rooms
 - v. Display all rooms with window view
 - vi. Display all rooms with kitchenette
 - vii. Display all rooms on given floor
 - viii. Display any combination of above

- 3. Purge reservations when agent signs in**
 - a. When agent signs in, all reservations for days passed are purged and the screen displays the number of reservations purged and their id's and dates

- 4. New dates are added to reservation system when agent signs in**
 - a. When agent signs in, days to reserve are extended to 547 total including the current date

5. **Agent creates new reservation for a certain number of rooms for a certain number of days**
 - a. Agent receives confirmation number or error message depending upon success
 - b. Agent enters in details of person making the reservation

6. **Agent deletes reservation from system (must remove all days and rooms)**

7. **Agent edits existing reservation**
 - a. Agent changes one or more of the fields in the reservation

8. **Agent creates a room configuration**
 - a. Type of room (honeymoon suite, penthouse, executive suite) is specified
 - b. Which floor of the hotel are we on
 - c. Number of beds and types of beds are specified (includes pull out couch)
 - d. Smoking or non-smoking specified
 - e. Number of bathrooms (1, 1.5, 2, 2.5)
 - f. Kitchenette present
 - g. Window view present

9. **Agent prints out a bill for the hotel stay**
 - a. A bill should be printed for each room
 - b. The bill needs to detail the cost of the room, taxes (Assume its Saratoga County, NY -> do some research) and any fees incurred

10. **System files are backed up each time program is run**
 - a. From my experience reading and writing text files, you will want to back up the files each time you open and save them

Test Plan for “Buenos Aires” Hotel System

Test Case#	Testing what concept	Description	Expected Outcome
0.0N	Creating correct reservation dates from given date(no leap years included), now known as the Minotaur 1 system	Agent specifies start date of 3/1/2010	Dates that are valid include 3/1/2010..2/28/2011 ->365 days 3/1/2011..? Need 182 more days March = 31 April = 30 May = 31 June = 30 July = 31 Aug 29th, 2011 is last day → 547 days
0.1D	Creating correct reservation dates from given date(crosses a leap year), now known as the Medusa 1 system	Agent specifies start date of 1/1/2011	Dates that are valid include 1/1/2011..12/31/2011 ->365 days 1/1/2012..? Jan = 31 Feb = 29 (leap year so 2/29/2012 is legitimate) March = 31 April = 30 May = 31 June = 30 June 30, 2012 is last day → 547 days
1.00N	Seeing availability for all rooms for a given VALID date	Get Avail *.* for Minotaur 1 system for 3/1/2010	All rooms should be available (must come up with some sort of text file response to test this)Rooms 1-54 Show available
1.01N	Seeing availability for all rooms for a given INVALID date (out of day range for month)	Get Avail *.* for Minotaur 1 system for 3/32/2010 3/-1/2010, 4/0/2010, 4/31/2010, 5/0/2010,5/32/2010, 6/0/2010,6/31/2010, 7/0/2010, 7/32/2010, 8/0/2010, 8/32/2010, 9/0/2010, 9/31/2010,	Bad Data Message

		10/0/2010, 10/32/2010, 11/0/2010, 11/31/2010, 12/0/2010, 12/32/2010, 12/15/-1	
1.02N	Test INVALID leap year day	Get Avail *.* for Minotaur 1 system for 2/29/2011	Bad Data Message
1.03N	Test Boundary days (first and last) for Minotaur 1 System	Get Avail *.* for Minotaur 1 system for 3/1/2010 Get Avail *.* for Minotaur 1 system for 8/29/2011	All rooms should be available (must come up with some sort of text file response to test this)Rooms 1-54 Show available
1.0D	Seeing availability for all rooms for a given VALID date	Get Avail *.* for Medusa 1 system for 1/29/2012	All rooms should be available (must come up with some sort of text file response to test this)Rooms 1-54 Show available
1.02D	Test VALID leap year day	Get Avail *.* for Medusa 1 system for 2/29/2012	All rooms should be available (must come up with some sort of text file response to test this)Rooms 1-54 Show available
1.03D	Test Boundary days (first and last) for Medusa 1 system	Get Avail *.* for Medusa 1 system for 1/1/2011 Get Avail *.* for Medusa 1 system for 8/29/2011	All rooms should be available (must come up with some sort of text file response to test this)Rooms 1-54 Show available
<hr/>			
2.01N			
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8.00	Create room configuration	Start with Default Type: Normal # King Beds: 2 # Queen Beds:0 #Double Beds:0 #Twin Beds:0 #Pull out couches:0 Smoking: No #Bathrooms: 1 Kitchenette: No These values can be changed to the following; Types { Normal, HoneyMoon, Penthouse, Executive, Custom } #Bathrooms { 1, 1.5, 2, 2.5 } Window view: yes	A valid room configuration object is created, toString method will dump out information similar to the format to the left
8.01	Create INVALID room configuration	An invalid configuration is created Start with Default Type: Normal	Bad Data Message

		<p># King Beds: 2 # Queen Beds:0 #Double Beds:0 #Twin Beds:0 #Pull out couches:0 Smoking: No #Bathrooms: 1 Kitchenette: No These values can be changed to the following; Types {Normal, HoneyMoon, Penthouse, Executive, Custom} #Bathrooms {1, 1.5, 2, 2.5} Window view: yes</p>	
8.02N	Create some configurations for use with Minotaur 2 System	<p>Default + Smoker (same as defaults but smoking OK) Default + Kitchenette (K room) HoneyMoon Suite + Kitchenette+1.5 bathrooms Default +1 Queen (no King) Default+Pull out couch Custom: Elvis Presley Suite + Kitchenette + 3 bathrooms + 3 King Beds + Pull out couch</p>	Configurations should be able to be recalled and match the details at the left (Leave room for a text description of custom rooms)
8.03N	Associate Room Configurations with Various Rooms from Minotaur 2	<p>Associate rooms 1-10 with Default profile(Floor 1) Associate rooms 11-20 with Default + Smoker(Floor 2) Associate rooms 21-40 with Default+Kitchenette profile (K room)(Floor 3 + 4) Associate Rooms 41-50 with Default + 1 Queen(floor 5) 3 Honeymoon Suites (floor 6) Elvis Presley Suite (floor 7)</p>	Configurations should be able to be recalled and match the details at the left (Leave room for a text description of custom rooms)
8.02D	Create some configurations for use with Medusa 2 System	<p>Default + Smoker (same as defaults but smoking OK) Default + Kitchenette (K room) HoneyMoon Suite + Kitchenette+2.0 bathrooms Default +1 Queen (no King) Default+Pull out couch Default + 1.5 Bathrooms Default + 2.0 Bathrooms Default + 2.5 Bathrooms Default + 1.5 Bathrooms + Smoker Default + 2.0 Bathrooms + Smoker Default + 2.5 Bathrooms + Smoker Custom: Meeting Room + Kitchenette</p>	Configurations should be able to be recalled and match the details at the left (Leave room for a text description of custom rooms)

8.03D	Associate Room Configurations with Various Rooms from Medusa 2	<p>Associate rooms 1-5 with Default profile(Floor 1)</p> <p>Associate rooms 6-8 with Default + Smoker(Floor 1)</p> <p>Associate rooms 9-13 with Default + Kitchenette(K room) (Floor 2)</p> <p>Associate rooms 14-20 with Default + Kitchenette(K room) (Floor 2)</p> <p>Associate rooms 21-25 with Default +1 Queen (no King) (Floor 3)</p> <p>Associate rooms 26-28 with Default+Pull out couch (Floor 3)</p> <p>Associate rooms 29-31 with Default + 1.5 Bathrooms (Floor 4)</p> <p>Associate rooms 32-35 with Default + 2.0 Bathrooms (Floor 4)</p> <p>Associate rooms 36-38 with Default + 2.5 Bathrooms (Floor 4)</p> <p>Associate rooms 39-42 with Default + 1.5 Bathrooms + Smoker (Floor 4)</p> <p>Associate rooms 43-45 with Default + 2.0 Bathrooms + Smoker (Floor 4)</p> <p>Associate room 46 with Default + 2.5 Bathrooms + Smoker (Floor 4)</p> <p>Associate Rooms 47-50 with Default + 1 Queen(floor 5)</p> <p>Associate Room 51 with 1 Meeting Room (floor 1)</p> <p>Associate Room 52 with 1 Honeymoon Suite (floor 8)</p> <p>Associate Room 53 with 1 Executive Suite (floor 8)</p> <p>Associate Room 54 with 1 Penthouse Suite (floor 9)</p>	Configurations should be able to be recalled and match the details at the left (Leave room for a text description of custom rooms)
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