Inf 43 – Fall 2014 – Homework 1

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Awarded Points	Maximum Points	Document Aspect
	15	Clarity of writing (spelling, grammar, sentence construction) and Clarity of expression (flow, structure, making logical arguments). Roughly 7.5 each.
	15	Introduction / Executive Summary (can be different sections or combined into one)
	7.5	Application Context / Environmental Constraints (can be different sections or combined into one)
	35	Functional Requirements, including use-case diagram and each use case (following a use-case template).
	7.5	Software Qualities and Non-functional Requirements
	5 (+5)	Other Requirements and Other Items. At least a Glossary of Terms. You can earn up to 5 points Extra Credit if you go beyond Glossary
	7.5	Assumptions / Risks (can be different sections or combined into one)
	7.5	Priorities / Implementation Phases; Future Directions and Expected Changes
	100	**TOTAL**

BeachBurn Manager System Requirements

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Introduction

BeachBurn Manager is a web-based application used to manage BeachBurn, an annual five-day music festival held in XYZ club at Laguna Beach, California.

The ABC event management firm is looking to develop a single software system that can help BeachBurn's festival organizers with ticket management, scheduling management, and resource management before and after the festival. The system will feature multiple interfaces for the different managers and their corresponding responsibilities. The managers will be able to add and change ticket prices, edit seating arrangements in the stadium, and edit the schedule of performing bands. Ticket vendors will be able to use the software to sell seats to customers.

By putting all of the management into one system, BeachBurn will be run in an organized, efficient, and practical way. Having all the information updated into BeachBurn Manager will allow all employees to have the most current, updated status on crucial information such as seating, prices, schedules, and seat availability and to conduct their responsibilities in a simplified and effective way.

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Overview / Executive Summary

BeachBurn Manager will oversee the BeachBurn festival's management within a single web-based system, allowing flexible ticket and schedule management to happen in one

synchronized place. The users, BeachBurn employees, will be able to login and access one of five interfaces corresponding to the six different roles of BeachBurn employees: System Administrator, Web Administrator, Stadium Manager, Schedule Manager, Ticket Manager, and Vendors.

System Administrators will be able to manage the authorities of other BeachBurn Manager users. The Web Administrator will be able to view the schedule to update the website geared at customers. The Schedule Manager will be able to create and edit the schedule for the lineup of bands for each day, making the scheduling information easy to access for all other users. They will be able to make changes such as replacing a band that has cancelled out. The Stadium Manager will be able to design seating sectors in the arena for each day and set seat availability, making the process of selling seats more organized. They will also be able to determine how many VIP seats there will be for each set, maximizing profits. The ticket manager will be able to set the amount of tickets for sale and their prices, including different types such as VIP tickets. Ticket vendors will be able to access schedule information and seat availability to efficiently sell BeachBurn patrons tickets at the door. They will be able to input customer information and make price adjustments as needed.

BeachBurn Manager will make the festival's management organized and efficient by having all of the necessary information in one place. The seating arrangement, prices, schedules, and seat availability will be updated and easily accessible to employees, assuming there is a reliable internet connection. From setting up the schedule to getting ticket into the hands of the customers, the process will be streamlined, ultimately saving time and money. Having an updated, centralized system will prevent costly mistakes such as selling the same ticket twice or scheduling bands on overlapping time slots.

Application Context / Environmental Constraints

BeachBurn Manager will be used by BeachBurn employees. Customers will not have access.

As a web-based application, BeachBurn Manager will be accessible by any standard computer, specifically desktops or laptops. It is optimized for use with a moderate sized monitor, a mouse, and a keyboard, especially for ticket vendors who need to input information quickly and accurately. It is not optimized for use with a tablet or smartphone. It should run on all common internet browsers, including Internet Explorer, Firefox, Safari, and Chrome. BeachBurn Manager will be compatible with Windows desktops.

The user interface should be simple and readable. The design should be lightweight so the pages load quickly; there is no need for additional graphics, audio, or animations. Site navigation should be displayed on a menu that is in a consistent location from page-to-page. The menu will provide links to navigate to other pages as needed.

BeachBurn Manager will be used in two situations: in management and in ticket vending.

Management
Managers such as the Schedule Manager, Stadium Manager, and Ticket Manager will be able to access BeachBurn Manager from any computer in order to make changes to the schedule, seating arrangements, and pricings. The System Administrator will be able to manage other users and make changes to authorities. The Web Administrator will be able to view the schedule in order to manage the customer website.

Ticket Vending
Ticket vendors working on-site at the XYZ club will access BeachBurn Manager to handle ticket sales to a queue of customers. For each customer, they will possibly need to check the seat availability, input the buyer's information, adjust the ticket price as needed, mark the seat as sold, and/or refund a ticket.

Functional Requirements

Figure 1 shows the use case diagram for BeachBurn Manager. BeachBurn Manager is accessed through a login system, in which the user inputs a user ID and password. Without an authorized user ID and the corresponding password, BeachBurn cannot be accessed beyond the login page. Once logged in, the User is taken to one of five interfaces corresponding to the six possible roles of a BeachBurn employee: System Administrator, Web Administrator, Schedule Manager, Stadium Manager, Ticket Manager, and Ticket Vendor. The user will only be able to access the interfaces their account has been authorized to: for example, Ticket Vendors cannot access the Stadium Manager interface.

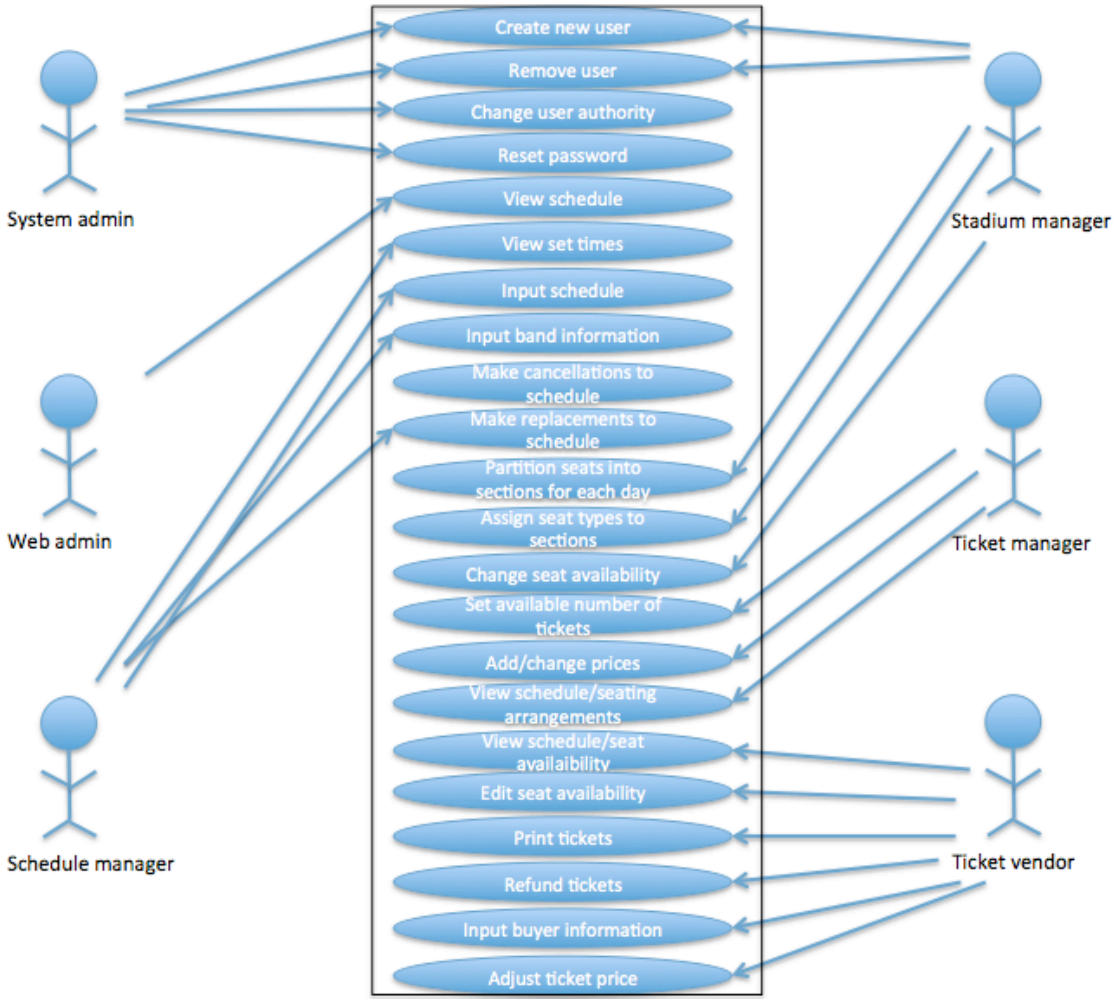

Figure 1: BeachBurn Manager Use Case Diagram.

System Administrator

The System Administrator is responsible for overseeing the authorities the other users of BeachBurn Manager will have. Along with being able to add users into the system and assigning them roles, such as Ticketing Manager, they will be able to remove users from the systems or assign their roles, thereby changing what interface is available to them. If a user attempts to access an interface they don't have authorization to, they will get an error message telling them so. Users can be assigned multiple roles, such as if the System Administrator is also the Schedule Manager. The System Administrator will also be able to manually change the password of any user.

System Administrator interface:

- View Users – view the complete list of BeachBurn Manager users. The list includes the User ID, first and last name, authorities (such as Ticketing Manager), email, and other necessary employee information.

- Add User – allows the System Administrator to input a new user by inputting the User ID, account password, first and last name, authorities, email, and other necessary employee information.
- Edit User – allows the System Administrator to make changes to an existing user, such as changing a password, authorities, or an email address.
    - Remove User – allows the System Administrator to completely remove a user from the system, preventing them from logging on again

Web Administrator
The Web Administrator is responsible for the BeachBurn website where customers can learn about the festival and get information on the lineup. Because it is the Web Administrator's job to keep the customer website updated, they must be able to use BeachBurn Manager to access the schedule and get accurate information.

Web Administrator interface:
- View schedule – the Web Administraotr should be able to view the updated, accurate schedule for all five days. They do not have the ability to make changes to it.

Schedule Manager
The Schedule Manager is in charge of the scheduling of the bands. For each of the five days of the festival, they will be able to craft the schedule and lineup by creating time slots for band performances and inputting the corresponding band's information. Time slots will be created by choosing the beginning and ending time of each band's performance. BeachBurn Manager will return an error message if there are overlapping time slots. The Schedule Manager will be able to make changes to the schedule, preventing financial loss in the case that a band cancels or there are blank slots with no bands performing.

Schedule Manager interface:
- View schedule – view the complete schedule for band performances, with the option of viewing one day at a time or all five days at once.
    - Add set – create a new time slot by specifying the date, beginning time, and ending time. Time is specified by hours, minutes, and am/pm. They must also specify the name of the band performing.
    - Edit set – make changes to an already existing set, such as changing the time frame or changing what band is performing.
        - Remove set – Completely remove a set from the schedule in the event that a band is cancelled.

Stadium Manager
The Stadium Manager is responsible for partitioning the seats in the arena into sections for each day. The sections of seats are assigned seat types such as VIP

access or general audience. The seating arrangement will be represented with a top-down diagram of the arena, with different colors representing seating types (for example, green represents VIP seating and black represents unavailable seats). Each seat is identified with by an alphanumeric code, consisting of a letter representing the row the seat is stationed in, and a number representing the column (for example: seat A2 is the second chair in the first row). The partitioning of seats is consistent throughout the day, but may change the next (such as having 3 sections on day 1, and 5 sections on day 2). The stadium manager can also mark seats as available or unavailable, such as if there is a column obstructing the vision of certain seats and they need to be made unavailable for sale.

Stadium Manager interface:

- View schedule – the Stadium Manager will need to be able to view the schedule to see the lineup for each day.
- View ticket information – the Stadium Manager will need to know how many of each type of ticket are being sold, such as how many VIP tickets for each set throughout the day
- View stadium – view the current seating arrangement for any of the five days
    - Edit seating – choose which day of the festival is being represented and make changes by designating which seats belong to which type
        - Add seating type – adds a category to the list of seating types by choosing the name (such as General Audience) and a color to represent it.
        - Remove seating type – removes a seating type from the list of types

Ticket Manager

The Ticket Manager is responsible for setting the prices and available number of tickets. Prices and availability may vary from day to day. They should have the ability to make changes to prices as well. The Ticket Manager must determine the price and available number of tickets for each day and for every partition designated by the Stadium Manager. All tickets are sold by day and not by set.

Ticket Manager interface:

- View schedule – the Ticket Manager will need to be able to view the schedule for any given day
- Manage tickets – select a day to make edits to the ticket availability and price
    - Set price – input the price for any seating type (VIP, general admission) for that day
    - Set availability – input the number of available tickets for any seating type (VIP, general admission) for that day

Ticket Vendor

The Ticket Vendor is working on-site at the XYZ Club, selling tickets to queued customers. To sell a ticket, they need to be able to look at the ticket prices and

availability for all the different types of tickets, input the buyer information, mark the seat as being sold, and then print the ticket. The Ticket Vendor needs to be able to sell a ticket in 10-15 seconds. They also need to be able to refund tickets, and make changes to the ticket price, such as discounts to let a friend in for free.

Ticket Vendor interface:

- Ticket sales – handles all ticket sale transactions
    - View ticket price and availability – the Ticket Vendor should be able to see all available seat types, prices, and availability for that day in one place.
    - Select ticket for sale – choose the seat type for the ticket. Once selected, the seat will made unavailable for sale, preventing another ticket vendor from simultaneously selling the same seat. If the selling process is cancelled at any time, the seat will be made available again. Otherwise, it will remain unavailable.
    - Input customer information – input customer's name. Purchased tickets will appear on the outputted Excel file with ticket sales information.
    - Price adjust – the Ticket Vendor will have the option to make a change to the price, such as discounts. By default, the price will not be adjusted from the price set by the Ticket Manager.
    - Print ticket – tells the printer to print out the ticket with the date, name, seat type, and seat number
- Ticket refunds – handles the process of refunding tickets
    - Make seat available again – the seat will be made available for sale again.
    - Input customer information – input customer's name. Refunded tickets will appear on the outputted Excel file with ticket sales information.

All ticket sales will be automatically logged onto an Excel file, saved to a network drive. The spreadsheet will contain information on the date or purchase, ticket type, seat number, purchase or refund, and customer name.
If there are no more tickets available, such as if they are all sold out, the system will return an error saying so, preventing the overselling of tickets/seats.
The system will be updated and synchronized. There will be no loss of data between interfaces.

Software Qualities and Non-functional Requirements

Efficiency	The ticket vendors will need to be able to quickly and accurately sell a ticket by checking available seats, inputting customer information, printing the ticket, and then marking the ticket as being sold. They need to be able to do this in 10-15 tickets to keep the line moving.
Accuracy	The information needs to be displayed as accurately as possible to prevent any possible mixups. Important information such as schedules, ticket availability, prices, and seating arrangement all need to be displayed

	precisely to prevent mistakes such as selling the same seat to two different customers.
Speed	The system must keep up with the updates being made, such as a ticket being sold or updates to the schedule. The system can't be lagging, especially when ticket vendors are selling the tickets to customers. A lagging system could create undesirable situations and keep customers waiting. The system must be lightweight to run efficiently.
Reliability	The system needs to be accountable for working reliably and holding on to its information. If the system were to crash the day of the festival, it could be disastrous and hurt ticket sales.
Usability	Important information such as schedules and availability should be easy to access and edit. It should be simple to implement changes to the schedule, price, or seat availability as well.
Security	Only BeachBurn employees should be able to access BeachBurn Manager. A key/password login system needs to be in place to prevent unauthorized entry.
Robustness	BeachBurn Manager should behave reasonably in unforeseen circumstances. When it comes to ticket vending, having to restart the computer or reset a router for internet connection could keep customers waiting and lead to financial loss.
Portability	BeachBurn Manager should be accessible from any standard desktop internet with an internet connection. Should something happen to one of the computers being used for ticket vending, it should be able to be quickly replaced with another computer running BeachBurn Manager. It shouldn't require any installation or hardware, like a CD.
Changeability	As BeachBurn grows in popularity, so will the demands on BeachBurn Manager. It should be reasonable to incorporate new elements or make changes to accommodate possible new features.

Other Requirements

Manual

BeachBurn Manager should come with a short, straightforward manual that walks an employee through various tasks depending on their role (such as how to sell a ticket if you're a ticket vendor). If BeachBurn Manager is seeing more usage, a short tutorial could be implemented for first time users.

Automated Security System

BeachBurn Manager would benefit from an automated process for creating accounts, so the System Administrator would merely have to approve new users rather than manually input them into the system. An automatic password reset system could be implemented using information as birthdays or security questions (example: What was the name of your first dog?).

Glossary of Terms	
authorities	The extent to which a user has access to an interface
interface	The page visible to the user, available for interaction

lightweight	Relatively simpler or faster, without unnecessary parts
lineup	The list of bands performing
optimized	Made as to maximize efficiency and speed in retrieval, storage, or execution.
portability	Ease of access
reliability	Extent to which the software consistently performs according to its specifications
robustness	Strong and effective in all or most situations and conditions
secure	For internet connections: without the danger of being hacked, intrusion of unauthorized users
set	In the schedule: one time slot for a performance
usability	Convenience or ease of use
web-based application	Any software that runs in a web browser

Assumptions / Risks

It's assumed that the computers accessing BeachBurn Manager will be on a secure and reliable internet connection. Lapses in internet connectivity could lead to inaccurate information, as BeachBurn Manager needs to be updated in real time as seats are sold, to prevent overselling. An insecure internet connection could lead to security issues, such as an unauthorized entry.

There is a risk of tickets being counterfeited, since there is no barcode or other authorizing system in place. This could lead to overselling by selling a customer a ticket to a seat that a counterfeiter is occupying, leading to financial loss for BeachBurn.

There is a risk of inputting two different customers with the same name into the system. Because the ticket vendors only input the customer's name and no other identifying information, this could later lead to confusion should there be a dispute or a customer attempts to refund the ticket.

There is a risk of aggressive scheduling. Because of the nature of the BeachBurn festival, BeachBurn manager needs to be completed in a timely fashion before the deadline. BeachBurn manager needs to be ready to go a month before the BeachBurn festival. Delays in getting the product finished could seriously hurt BeachBurn's time management and profits.

Priorities / Implementation Phases

Must Have:

- Ticket vendor's ability to sell tickets
- Ticket manager's ability to set ticket prices and available number of tickets
- Stadium manager's ability to mark seats available/unavailable
- Schedule manager's ability to create and edit the band schedule, including making cancellations and replacements

- Updated, synchronized, and accurate information (such as schedules, seat availability, ticket pricing)
- User ID and password login system
- System Administrator's ability to create user accounts

Should Haves:

- Stadium Manager's ability to partition seats in stadium for each day
- Stadium Manager's ability to mark seating sections, such as VIP and General Audience
- Ticket Manager's ability to set prices for each sections
- Ticket Vendor's ability to refund tickets
- System Administrator's ability to manage other user's authorities
- Web Administrator's ability to view the schedule

Nice to Have:

- A system to prevent the counterfeiting of tickets, such as a barcode system
- Ticket vendors' ability to discount tickets, such as letting family and friends in for free or at a discount

Future Directions and Expected Changes

Changes expected to take place in the future include automatic synchronization between the band schedule in the BeachBurn Manager system, and the band schedule that's present on the website geared at customers.
An interface for managing parking could also be implemented in the future.
BeachBurn Manager should be open to adapting in the future alongside the BeachBurn festival.