APPLICATION SOFTWARE FOR GRAPHICAL INTERFACE ONLINE THEATRE BOOKING SYSTEM

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Abstract **- This paper examines the booking requirements of theatres, as well as the type of information required by their managers, and incorporates some of the desirable features within. A database has been designed to cater for a 99 seats theatre with a maximum of two performances per day. In order to keep costs to a minimum it makes use of a PC which is practically standard office equipment. The purpose of this research is to create a location-aware service for internet users. This service is called Theatre Booking System which allows users to search for movies in a given range from their current position, or reserve/purchase tickets. Users can pay for tickets using credit cards saved in a secure wallet embedded into the application, or e-money received as refund for the cancelled tickets. A user-centered design is considered. Workshops and interviews are conducted with real users to build and evaluate different low and high-fidelity prototypes. Internet is used as a network carrier for all client-server requests. PHP, MYSQL, HTML and JAVA-SCRIPT are chosen as implementation technologies.**

KEYWORDS - Theatre booking, Cinema booking, Computer reservation system, Graphical interface, User-friendly, Web-based

1.0   INTRODUCTION

Theatre booking system aims at educating and enlightening theatre patrons on how to make bookings and reservation for theatres and to minimize the hassle of travelling down to the theatre location before making reservations and queuing up for tickets to avoid congestions. This involves making the customer aware of seat reservation schemes. Theatre booking system achieves this using theatre booking software, which will contain various events that result into a graphical interface booking system which even special people can make reservations. This paper makes it easy to make reservations for users to watch a movie at will anytime they want and anywhere they choose as long as they are connected to the Internet instead of travelling down to the booking center and this is time wasting. In addition, to make theatre patrons learn and understand the importance theatre. Being an online booking system, it will assist managers and administrators to update

movie information that can be accessed by patrons, help confirm reservations and educate the patrons on how to book cinema ticket, and seat reservation online in such a way that the congestion involved would be reduced. Online theatre booking system is needed in order to run a check on the authenticity of the tickets to avoid fraud manipulated booking. In sum, it educates patrons and provides a user-friendly interface which is easy to understand and navigate by both experienced and novice users. This study would be useful to local and international theatres and cinemas houses who are interested in automating and simplifying their operations by adopting the use of this system to boost their level of productivity. With a user-friendly environment, online booking will be a lot easier for users that decide to make theatre reservation from the comfort of their homes, offices and in any place ensuring a safe and secure user authentication process.

2.0   OVERVIEW EXISTING SYSTEM

The history of booking system started in the early days of American commercial aviation, passengers were relatively few, and each airline's routes and fares were tightly regulated by the Civil Aeronautics Board. These were published in a volume entitled "The Official Airline Guide", from which travel agents or consumers could construct an itinerary, then call or telex airline staff, who would mark the reservation on a card and file it (Houghton Mifflin Company, 2000). As demand for air travel increased and schedules grew more complex, this process became impractical. After the discovery of a booking system, it was then incorporated into theatre. The existing system involves a manual booking system where the box office treasurer would have a paper plan of the theatre for each performance, with a corresponding ticket book. The patron would have access to a diagram of the theatre to indicate preferred seats, but usually not be allowed to actually see the treasurer's plan, as part of the treasurer's job is to distribute the audience around the theatre for both increased comfort (not all patrons in the same corner while many other seats are vacant), and to give the impression of a well-attended performance (even if the theatre was not full) for publicity reasons. In the process, the treasurer would attempt to sell the premium (and most expensive)

seats first. Booking a seat and buying a ticket in this manner would be a face to face negotiation between the patron and treasurer. The treasurer was also expected to be knowledgeable about the performance in question, so that patron questions could be dealt with in a positive manner (Sweeting 1969). The patron would finally pay for the agreed seats, and receive tickets printed with the respective seat numbers. The treasurer would have to carefully mark off the seats on the theatre seating plan for every ticket sold, to avoid the possibility of the same seat being sold twice by mistake. This process is strenuous because a patron would have to queue up for hours; this in turn is not comfortable for patrons because it is stressful. Therefore, this is where the need for a theatre booking system comes in especially an online application to combat this. The existing system lacks an online booking system access.

There are currently a number of different websites offering online tickets sales. Some of the most well known are:

• Ticket Master (www.ticketmaster.co.uk)

 Figure 2.1

• Aloud (www.aloud.com)

Figure 2.2

Each site of the site offers a very similar service to their customers. The sites each have a different way of navigating and searching the site.

Ticket master and **Aloud** as shown in Figure 2.1 and Figure 2.2 include links on their home page to what they describe as 'hot tickets' linking to pages selling latest tickets. The search facilities available on each of the sites are similar.

The Ticket master website offers accounts to customers so that their details are stored so that process of purchasing tickets is quicker and customers do not have to fill in forms. Customers who have accounts receive emails periodically from the site promoting upcoming events. The search on Ticket Master allows users to search by artist, team or venue in a chosen location.

The Aloud website has a basic search comprising of artist/band or town. The advanced search allows users to search by artist or event, a set of dates, a venue name and a town. The aloud website offers customers an email list facility where users can enter their email address to be kept up to date with upcoming events.

These two websites has its homepage clumsy and views and only playwright movies and drama are shown. While in the proposed the system, due to the incessant increase for knowledge giving rise to upgrade in technology, film shows

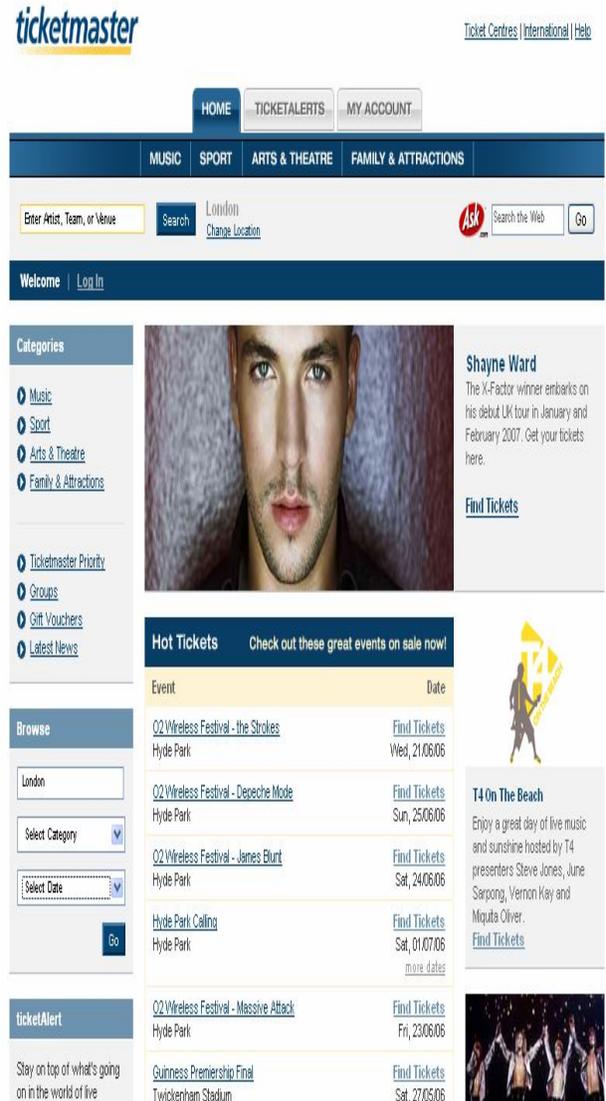is incorporated to make it a movie based online reservation of tickets for both theatres and cinemas

Figure 2.1 A screen shot of TicketMaster website

Figure 2.2 A screen shot of Aloud website

Figure2.3 A screen shot of Mark Bradley's work

2.1   RELATED WORK

The theatre provides infrastructure and facilities for a performance to take place, while allowing an audience to enjoy this for a fee. A booking system is used to ensure patrons can purchase tickets for a given performance well in advance, and avoid being turned away at the last minute.

There are a couple of related works carried out by (Pejakovic Derek, 2006) this is a dissertation on Theatre Booking System review the existing system form the origin of theatre from the Greeks to the renaissance and reformation. (Mark Bradley 2006). Also wrote a dissertation on Online Ticket Sales System:
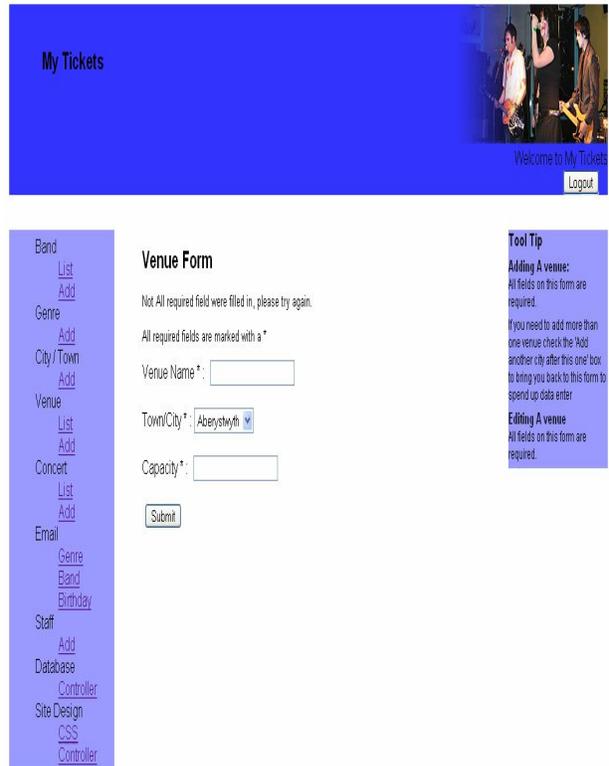
2.2   OVERVIEW OF THE PROPOSED SYSTEM

The inception of the computer age witnessed a major recognition of the efficiency of computer reservation system. Airlines recognized the efficiency a computer reservation system would bring to their operations. With costs being prohibitive to all but the largest of companies, the airline industry discarded their manual booking systems in favour of permanently utilizing the electronic systems. Several decades later, computers are affordable to even the smallest of businesses, allowing them to enjoy the benefits of enhanced productivity using Information Technology (IT). Major theatres have set up computer booking systems to increase their efficiency, but smaller operations might be hampered to follow suit due to budgetary constraints. This research investigated the construction of a computer-based Theatre Booking System appropriate to the niche theatre business. The completed system aims to enable it to be utilized by patrons willing to book theatre seats online in addition to theatre managers wanting to obtain various real time ticket sale reports.. A discussion of traditional and more modern booking systems is presented, with a proposal to make use of IT to design a system which is fast, convenient, informative, accurate and consistent with the modern day conveniences consumers have come to expect. The various components of the system will be tested and evaluated for efficiency, accuracy, convenience, flexibility and possible future developments.

Booking Systems can also be called Computer Reservation Systems (CRS). Computer Reservations System (CRS) is a computerized system used to store, process and retrieve information. Originally designed and operated by airlines, these were later extended for the use of travel agencies; major CRS operations that book and sell tickets for multiple airlines are known as Global Distribution Systems (GDS) (David E. Boundy, 1991). Airlines have divested most of their direct holdings to dedicated GDS companies, who make their systems accessible to consumers through Internet gateways. The appropriate use of computer can reduce the time taken to accomplish these duties, as well as reduce the labour cost, rendering the theatre more competitive. To prevent theatre sales from dwindling, booking seats and paying for tickets should be made as simple and convenient as possible. Numerous enterprises provide customers with the possibility of purchasing their goods and services online. Since consumers have come to expect such facilities, providing an online booking service can only serve to boost performance attendance.

3.0   METHODOLOGY

The methodology used throughout the development process is a variation on the waterfall life cycle. As the requirements for the paper are unlikely to change, this methodology befits the project. If the project requirements are dynamic, often a more agile methodology would have been chosen. The waterfall lifecycle works by following a strict path through the development process not moving on to the next stage until the previous stage has been completed.

The theatre booking system is an ease of use software with all the necessary capabilities for the clients. The algorithm for the software is listed below:

1. From the home page, there are a number of links from which the patron can perform different functions depending on the client's assigned privileges. The main links are Home, All movies, Search and Admin

2. On the home page, the patron sees the movies and their time schedule. The patron can click on the movie he or she wants and he or she will automatically be redirected to the booking page.

- Booking page: From this page, the patron can book for any movie of his or her choice and a code is generated when booking is successful.

3. To search and book for a movie, the patron can click on the search link and type the name of the desired movie.

4. To login as an administrator, click on the admin link which takes you to the admin page, login with your details. If access is granted, then you can proceed. But if access is denied, the administrator will be referred back to the home page.

3.1   COMPONENT AND SYSTEM TESTING

This deals with the verification of the efficacy of the software to be sure of the performance of the expected functions. It also involves performing a progressive overall testing of the system's objective.

3.1.1 DATABASE TESTING

In testing the database, ensure the database captures the specified fields according to their respective attributes. Also, ensure that the storage and retrieval functions of the database functions properly. Hence, the database connection with the interface worked perfectly. The tables with information concerning the various aspects of the software were rightly placed and are easily accessible by the system administrator.

3.1.2 PROCESS TESTING

In this phase, the system was started and it ensured that it was working perfectly well by logging in with an invalid account details and access was denied and thereafter, logging in with valid account details and access was granted which meant that the system only recognizes registered account details. Also, other features like creating a movie, creating new user (administrator), deleting a movie, withdrawing a movie, restoring a movie and managing tickets were tested.

3.1.3 INTERFACE TESTING

The interface of this system ensures that the prescribed format was used to create new user and that information generated from the database were placed in their various positions intended. This has helped in the input and output design. The interface was properly tested to ensure that it queried the database at any given time and it only fetched information required for any particular page.

3.2   SOFTWARE DESIGN

There are various software process models but in the development of this system, an online approach was adopted which Answer that the system will be an online service. The design model used is the system is the waterfall model and this is primarily because this model prescribes a systematic approach to software development which starts with a well-defined, understood customer's specification of requirements and move through a deployment in linear form.

Figure3.1 shows the architecture for the proposed system:

Figure3.2 Client flow chart diagram

Logic design
(PHP)

Server
(Apache)

Backend
(MySql database)
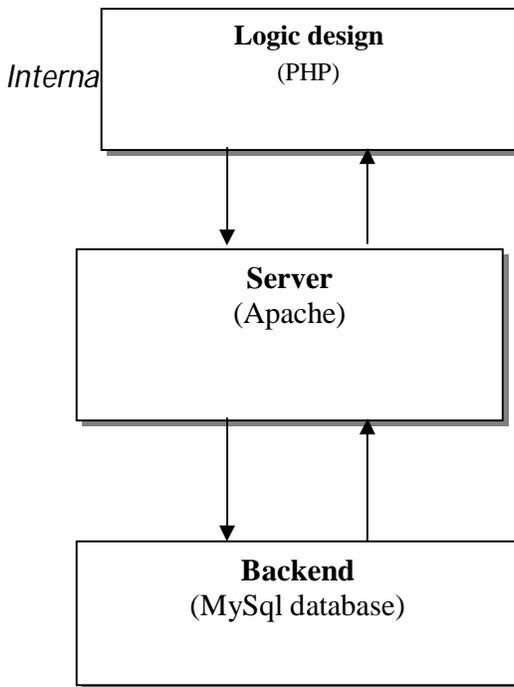
Figure 3.1Architecture of Web application

   I. PHP: Php is a web based programming language that is used in constructing the system.

 II. MySQL database: Is the database technology that is employed in creating the system.

III. Apache server: Is the server technology that is used to execute the program.
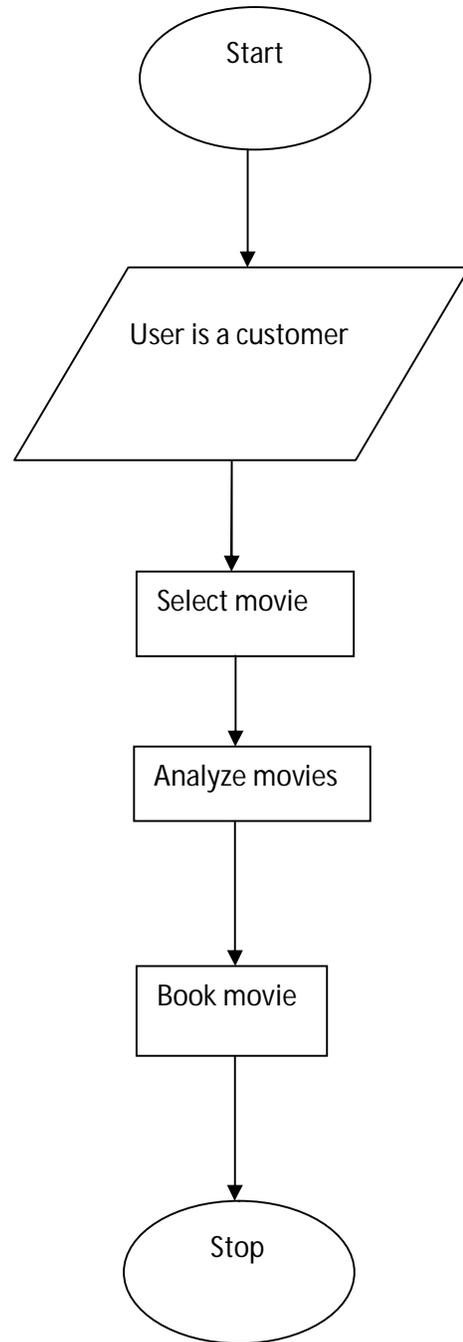
3.3   USE CASES

The use cases below are the;
Client flow chart diagram.
Administrator flow chart diagram.

The client flow chart diagram shows how patrons visit the website, view the movie list, select the movie and view the analysis of the movie then book for the movie.

The administrator flow chart diagram show how the administrators login, manage movies, create a new user (administrator) and manage tickets.

Figure3.2 and Figure3.3 shows the flow chart diagrams of the Clients and the Administrators.

Start

User is a customer

Select movie

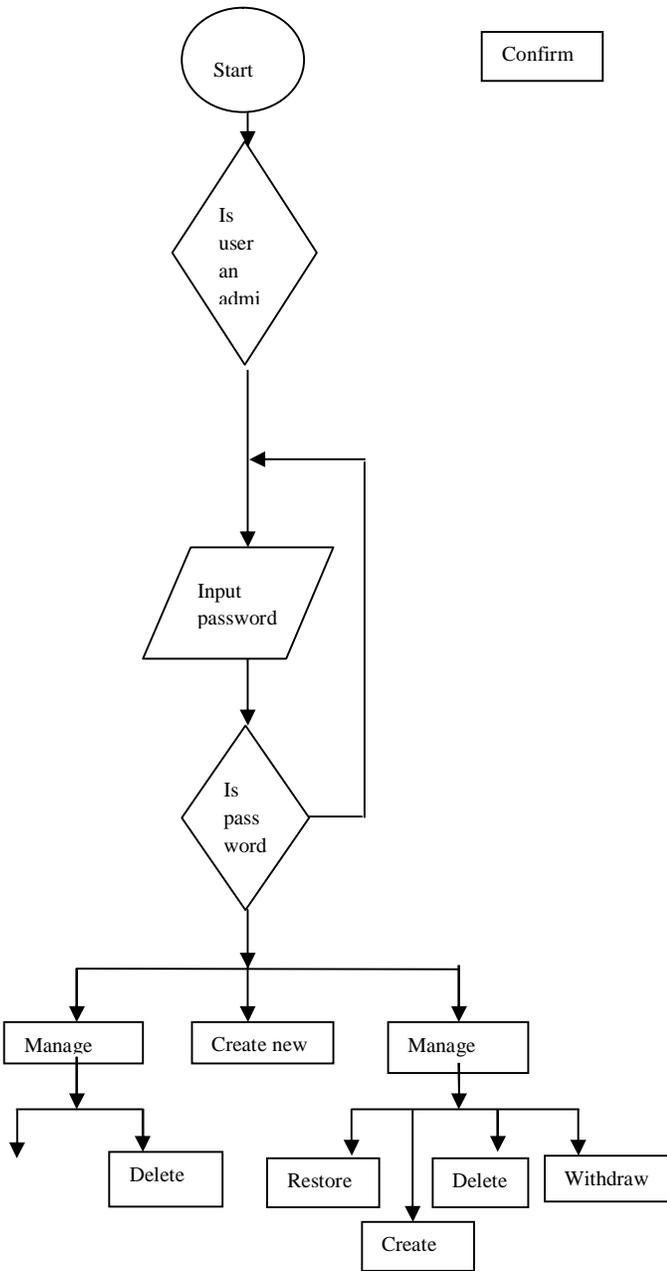Analyze movies

Book movie

Stop

Figure3.3 Administrator flow chart diagram

Screen Shots of the Proposed System

Figure3.4 and Figure3.5 shows the screen shots of the proposed system homepage which is the front-end and the administrator page which is the back-end
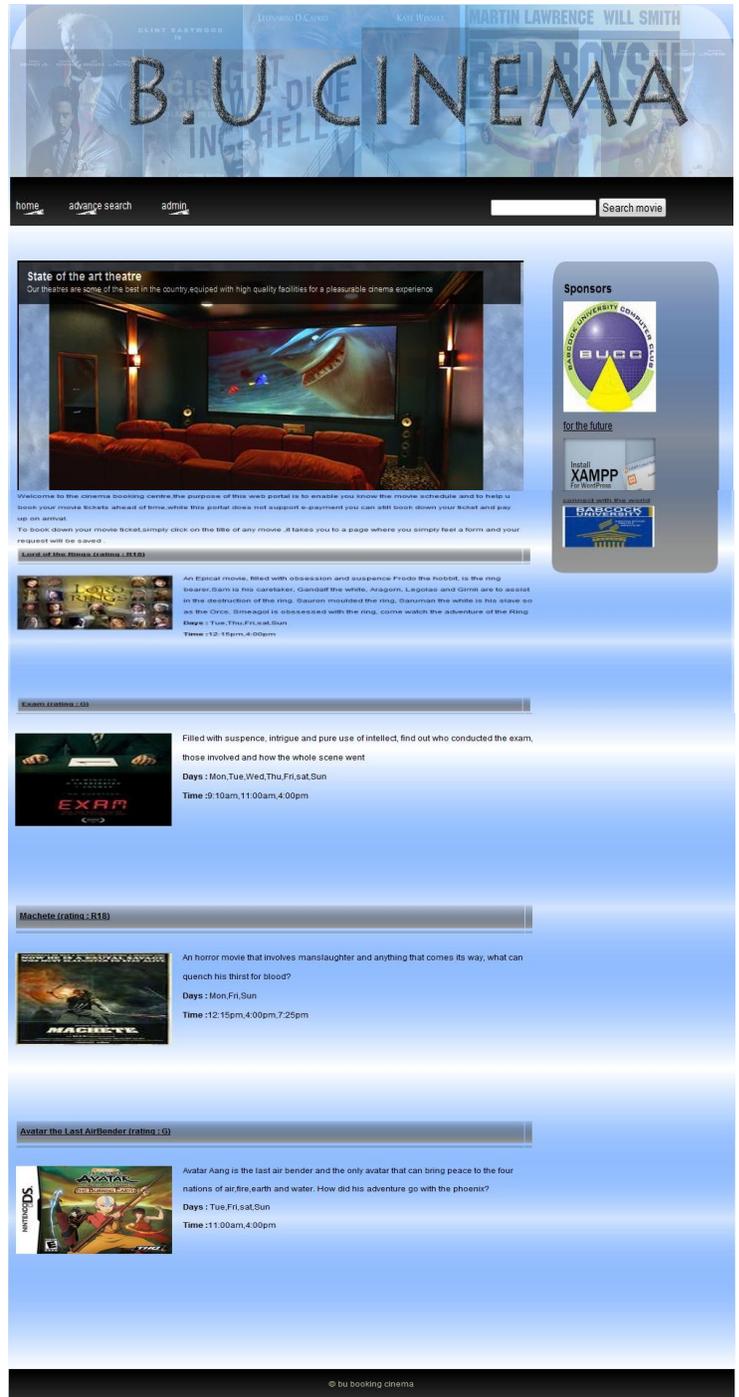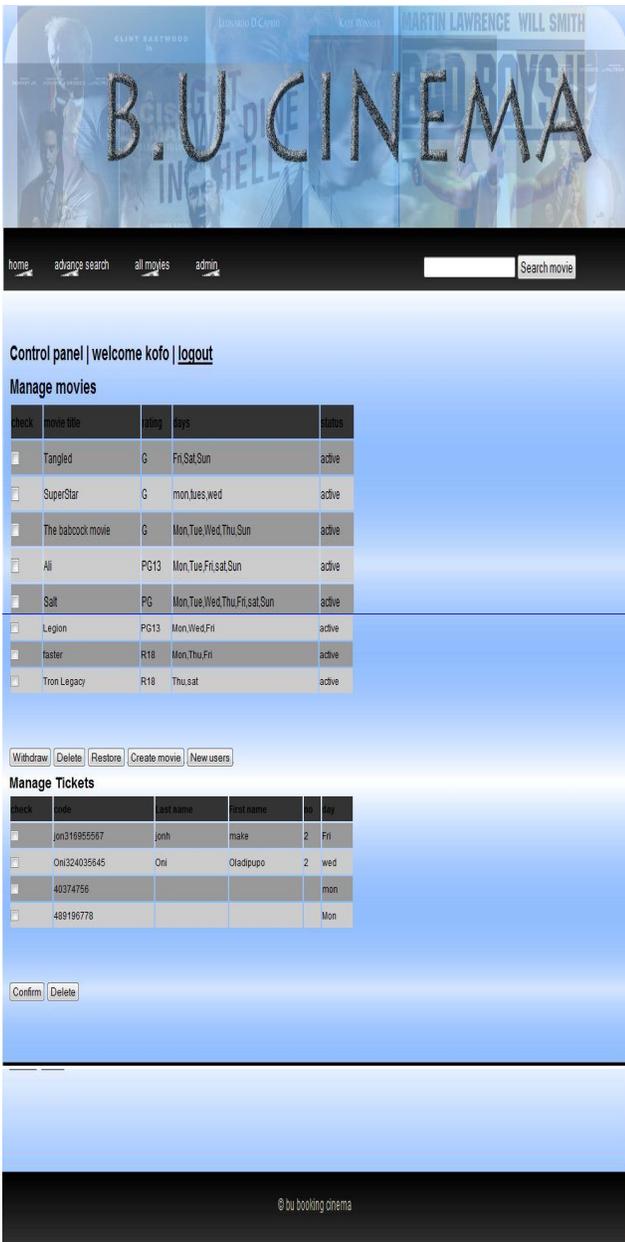

Figure3.4 Homepage

Figure3.5 Administrator page

4.0 RESULTS

The results of the research on measured variations are shown in Table 4.1, Table 4.2 and Table 4.3; also with the screen-shots of the database in Figure 4.1, Figure 4.2 and Figure 4.3:

Administrator: Contains all information about the administrator including the login password and username.
Table 4.1

Column name	Function
Username	Username of the administrator
Password	Administrator's unique login
	password

Movie: The table below depicts the movies available and the functions that can be performed on the movies by the administrator.

Table 4.2

Column name	Function
Id	Movie's database id number
Movie_title	The title of the movie
Poster_path	Course offered by a particular student
Rating	The movie rating
Description	A brief detail on the movie
Days	The Days on which the movie will be shown
Time	The time scheduled for the movie
Active	Determines whether the movie is active or not

Booking: The booking table records the data for every customer that books a movie.
Table4.3

Column name	Function
last_name	Last name of the customer
First_name	First name of the customer
No	Number of tickets demanded by the customer
Day	The day the movie is suppose to be shown
Time	The time the movie would be shown
Code	This is the generated code after which ticket has been booked for

Screen Shots of the Database

Figure 4.1 shows the users who have booked for movies with their Id, code, last_name, first_name, amount of tickets booked for, days and time of the movie.

Figure 4.2 shows the administrators who has access to the database and back-end administrator page with their Id, last_name, first_name.

Figure 4.3 shows the database view of the movies comprising of: Id, movie_title, poster_path, rating, type, description, days of the movie, time and active depicting if it is available or not available.

Table representing the Users who have made reservations

←T→			id	code	last_name	first_name	no	day	time
☐	✎	✗	31	gra241638184	grace	omole	3	Fri	4:00pm
☐	✎	✗	34	omo480621338	omotayo	abel	4	sat	4:00pm
☐	✎	✗	35	oke811340333	okeowo	olamilekan	6	Sun	11:00am
☐	✎	✗	36	son656585694	soniyi	anu	5	Sun	3:15pm

Figure 4.1

Table representing the Administrators who have access to the back-end of the software

←T→			id	last_name	first_name
☐	✎	✗	1001	kofo	kofo
☐	✎	✗	1002	dipo	dipo
☐	✎	✗	1003	grace	grace

Figure 4.2

Table showing a portion of the database of the movie

←T→			id	movie_title	poster_path	rating	type	description	days	time	active
☐	✎	✗	19	The One	pictures/The One.jpg	PG13	Action	This is an action packed movie, made by Jet Li who...	Wed,sat	12:15pm,4:00pm,7:25pm	1
☐	✎	✗	20	Prince of Persia	pictures/Prince Of Persia Warrior Within.jpg	PG13	Action	This is a acient movie about the prince of the lan...	Tue,Fri,Sun	9:10am,11:00am,4:00pm	
☐	✎	✗	21	Racing Stripes	pictures/Racing Stripes.jpg	G	Romantic	this is about a young girl who loves racing an cou...	Wed,sat,Sun	3:15pm,5:25pm	
☐	✎	✗	22	The hulk	pictures/hulk.jpg	R18	Action	An action packed movie filled with chemistry, an g...	Tue,Thu,Sun	12:15pm,4:00pm,7:25pm	1
☐	✎	✗	23	Tuxedo	pictures/Jackie Chan (3).jpg	PG13	Action	This movie is about a customised suit that operate...	Mon,Wed,sat	3:15pm,5:25pm	
☐	✎	✗	24	Hunted	pictures/hunted (2).jpg	R18	Horror	featuring Tom lee Jones and Toro Benicio, some men...	Wed,Fri,Sun	9:10am,11:00am,4:00pm	
☐	✎	✗	25	Xmen	pictures/X Men (2).JPG	PG13	Action	This is a science fiction movie that enlightens on...	Fri,sat,Sun	12:15pm,4:00pm,7:25pm	1
☐	✎	✗	26	Gone in 60seconds	pictures/Nicholas Cage.JPG	R18	Action	Nicholas Cage is the main actor is he gone in 60 s...	Tue,Wed,Fri	3:15pm,5:25pm	1
☐	✎	✗	27	Naruto	pictures/naruto Team Kakashi (2).jpg	G	Cartoon	Naruto, Sasuke, and Sukara are given the instructi...	Tue,Thu,sat,Sun	9:10am,11:00am,4:00pm	1
☐	✎	✗	28	Alien	pictures/Alien.JPG	R18	Horror	Alien is a science fiction movie that is about the...	Wed,Sun	3:15pm,5:25pm	
☐	✎	✗	29	300	pictures/300.jpg	R18	Action	This is a action movie aiming at saving their home...	Tue,Fri	3:15pm,5:25pm	
☐	✎	✗	30	Legion	pictures/legion.jpg	R18	Horror	This is about saving the earth and allow the baby ...	Wed,sat,Sun	12:15pm,4:00pm,7:25pm	
☐	✎	✗	32	Ali	pictures/ali-movie-poster-10204757594.jpg	PG13	Action	This is about the life of the famous boxe Mohammed...	Wed,Thu,sat	3:15pm,5:25pm	
☐	✎	✗	33	Harry Potter 7a	pictures/harry.jpg	R18	Action	Hogwarts school of witch and wizardry is now divid...	Mon,Wed,Fri,Sun	12:15pm,4:00pm,7:25pm	
☐	✎	✗	34	Tron Legacy	pictures/Tron-Legacy.jpg	R18	Action	an action packed movie filled with technology of h...	Thu,sat	3:15pm,5:25pm	
☐	✎	✗	35	Avatar the Last AirBender	pictures/Avatar - The Last Airbender The Burning E...	G	Cartoon	Avatar Aang is the last air bender and the only av...	Tue,Fri,sat,Sun	11:00am,4:00pm	

Figure 4.6

5.0 CONCLUSION AND FUTURE WORK

Time is one of the most fundamental resource available to people and it is of the essence that it is respected even when used for pleasure or relaxation. Online booking systems reduces the few minutes or hours that may be redundant as movie lovers queue up to buy tickets and gain entrance into the theatres to watch a movie or see a play-let. Interestingly, quite a number of online booking systems are not designed with user's ease of use in mind, interactive software applications, even web-based, are not what they should be.

A software must be functional but must also be a delight or truly friendly so to speak. Systems must avoid putting frustration to the face of a user. As the interface is the first point of contact, usability and user experience needs to be checked. A system should be good from the interface to the internal functionalities. There are several avenues for future investigation. This research focused on the dominant behavior of patrons going to cinemas and theatres. An exciting area to explore would be the use of online payment so as for patrons to be able to pay online for reservations.

ACKNOWLEDGEMENT

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