Automated Kiosk for Vending Tickets and Refreshments at Multiplexes

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Abstract: In this research paper the proposed concept is to replace the manual work in traditional Ticket issuing system and serpentine queues at food counters into an Automated Vending Machine. A ticket machine, also known as a Ticket Vending Machine (TVM), is a vending machine that produces tickets for multiplexes. The typical transaction consists of a user using the display interface to select the type and quantity of tickets and refreshments which include snacks and beverages, and then choosing a payment method which can be cash, credit/debit card. The ticket/tickets are printed and dispensed to the user and refreshments will be dispensed at the outlet conveyor. In order to reduce serpentine queues and mesh at ticket counters, automated Ticket Vending Machine can be used which provides ease and convenience for the customers. Customers with lack of technical knowledge need not worry while using vending machines because the GUI is user friendly and more over the customer can choose language of their choice for ease.

Keywords-Ticket Vending Machine, outlet conveyor, Automated Kiosk, ecard

I. INTRODUCTION

Automated Kiosk for Multiplexes is an engaging touch screen device that sets a new standard for customer self-servicing. Using automatic ticket systems enables to avoid confrontation i.e. mesh between the supervisors and customers. The touch screen interface integrates visuals and audio into a friendly and easy-to-use process. It reduces wait time for customers in long serpentine queues and minimizes staff costs. Customers can buy tickets and choose from a range of seating options all without having to line up at a staffed point of sale or even collect tickets that have been pre-purchased online. Kiosks can be configured for efficiency, with some set up specifically for the collection of online tickets, and others set up for buying tickets on the spot. With multilingual capability and both visual and audio prompts, customers will surely enjoy the self service. The Combo vending machines feature various selections of snacks and beverage options. The automated machine includes a chilled option for the snack side keeping your chocolates away from melting. The drink side dispenses cans & bottled beverages up to 24 oz. These features and many more, like e card payment options, make it a complete snack stations sure to please the customers. On the touch screen, the customer can select the movie which they want to view and choose the type of preferred class (i.e. balcony or general class) and move on to the procedures of issuing ticket, including whether the ticket is for adults or kids. Once the process is over, they can get the ticket printed.

The Customers have to make sure that they decide thoroughly about the movie which they are interested to view well before issuing the tickets since tickets are non-refundable and non-replaceable. The machine permits users to issue several tickets at a time. The machine includes printer to produce the tickets. Payment can be made using e card or cash. The device is provided with networking means, to allow central control and monitoring of the device. Power for the machine may be provided by hard-wiring the device to conventional AC power lines, by solar panels, by batteries, or a combination of any of these. Power consumption is held to a minimum by providing a "sleep" mode when the machine is not in use. The user interface includes a video output screen with "touch screen" capability to receive user input and a proximity sensor to activate the machine when a user approaches it. Additionally, security means need to be provided to deter potential thieves or vandals. The automated machine can vend up to 12 selections of chips, candy and biscuits through the 12 selection snack vending machine. Easy loading tilt out trays, simple controls, sturdy steel construction in a compact design add up to years of trouble free vending. Providing more variety and satisfaction to the customers is of key importance. The 6 selection drink vending machine has the unique capability and versatility to vend the customer with canned beverages including soft drinks, bottled water and juices. This all in one combination vending machine has the convenience of vending tickets snacks and drinks in one cabinet. The snacks are air cooled to prevent from damage. The temperature can be displayed the cooling temperature can be set. The customer can choose a payment method of their convenience which can cash, e card. If the customer choose to go with cash payment then paper currency detector will scan paper currency using optical and magnetic sensors. After successful validation the machine will verify whether the cash entered is equal, less or greater than the total payment bill. If the cash entered is equal to the bill produced by the machine then payment is accepted and the tickets are printed and dispensed. If the cash entered is less, than the difference of the actual cash entered and the total bill will be prompted to the user and unless the user clarifies with the bill, tickets won't be dispensed. If the cash entered is greater than the bill produced by the machine then the difference/balance amount is returned to the customer and the tickets are dispensed. If the customer chooses to go with online payment, the card is swiped on a swipe-machine connected with the kiosk. The swipe machine is connected to a central computer belonging to the network, which in turn is connected to all issuing banks.

The system verifies with your issuing bank whether you have sufficient credit in a few seconds and approves or rejects the transaction. As soon as the approval comes the tickets are printed and dispensed.

The kiosks can communicate wirelessly over a network and be managed from a central location. The kiosk or vending device can act as a complete stand-alone unit to vend. The term 'Cash & Carry' means that customers place their own order pay in cash/electronic and carry the merchandize away. The kiosks report to work every single day and never fall sick, unless there's a malfunction or something. Once have you plugged in, it will work day in and day out. The top three reasons for choosing self-service technology over traditional methods of retail purchase is speed, convenience and reliability.

II. SCREEN ANALYSIS

Initially the main screen contains the logo of cinema house and a start button. As the customer clicks on the start button he/she will come across the screen which displays two options i.e. to issue tickets and issue food and beverage. The customer can click on one or both options one at a time in any order. As soon as the customer clicks on issue ticket he will be taken to another screen which displays two options purchase tickets now and already purchased online. When the customer clicks on purchase tickets now he needs to select the movie, screen, class (balcony /General class), no of tickets and then proceed with the payment and get the tickets printed. If the customer has already purchased tickets online then he needs to enter his name and the details will be verified by the kiosk. After successful verification the tickets will be printed and dispensed to the customer. When the customer selects food and beverage he will be directed to another screen which displays details of available items. The customer can choose items of their choice and can select 18 items at a time (12 snacks+6 beverages depending on the capacity of the kiosk).After selecting items the customer needs to pay for the same and get the items collected.

III. SYSTEM MODULES

A. User module:-
- ❖ Check Availability
- • User Can Search Movie from Movie List.
- • User Can Check Ticket Availability.
- • User can also check the Movie slots/ schedule.
- ❖ Book Ticket
  User can book ticket by specifying the name of movie and required details and select the number of seats to Book.
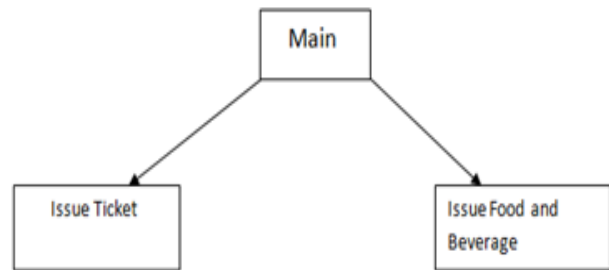- ❖ Payment Module:
  This is the most important module because it deals with the payment of the tickets booked in the booking module. The customer can pay for the tickets before the show by cash payment and if he wants to pay online, he can pay for the tickets by credit card
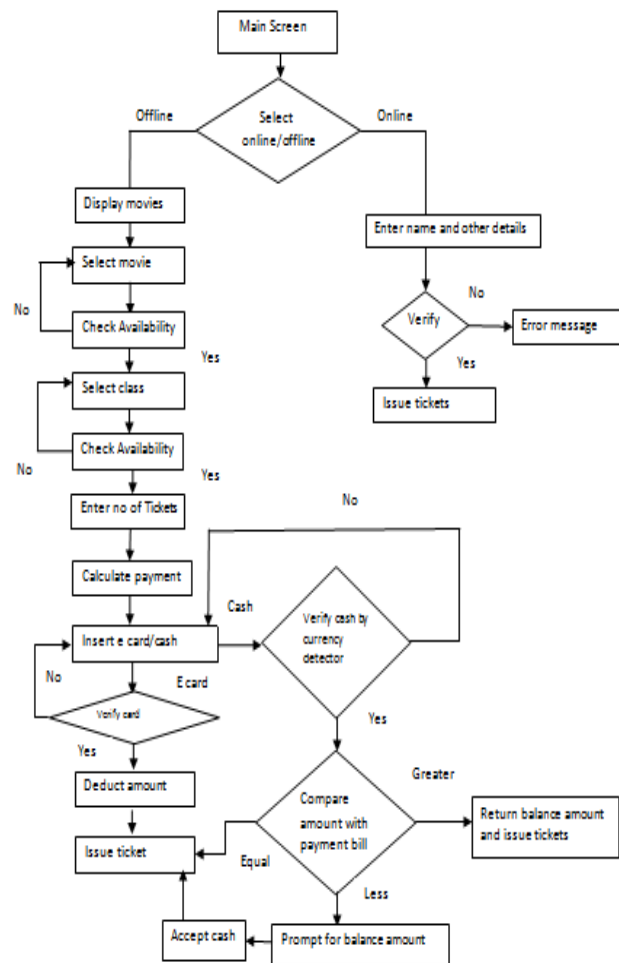
B. Admin module:
- ❖ Admin Login.

- • Admin Login with User Name and Password.
- ❖ Manage Movie.
- • Admin Can Add New Movie.
- • Admin Can Edit Old Movie Details.
- • Admin Can Delete Movie.
- ❖ Manage Schedule.
- • Admin Can Add New Movie Schedule.
- • Admin Can Edit Movie Schedule.
  Admin Can Delete Movie Schedule

IV. FLOWCHARTS

Fig. 1.1. Flow chart for Main Screen
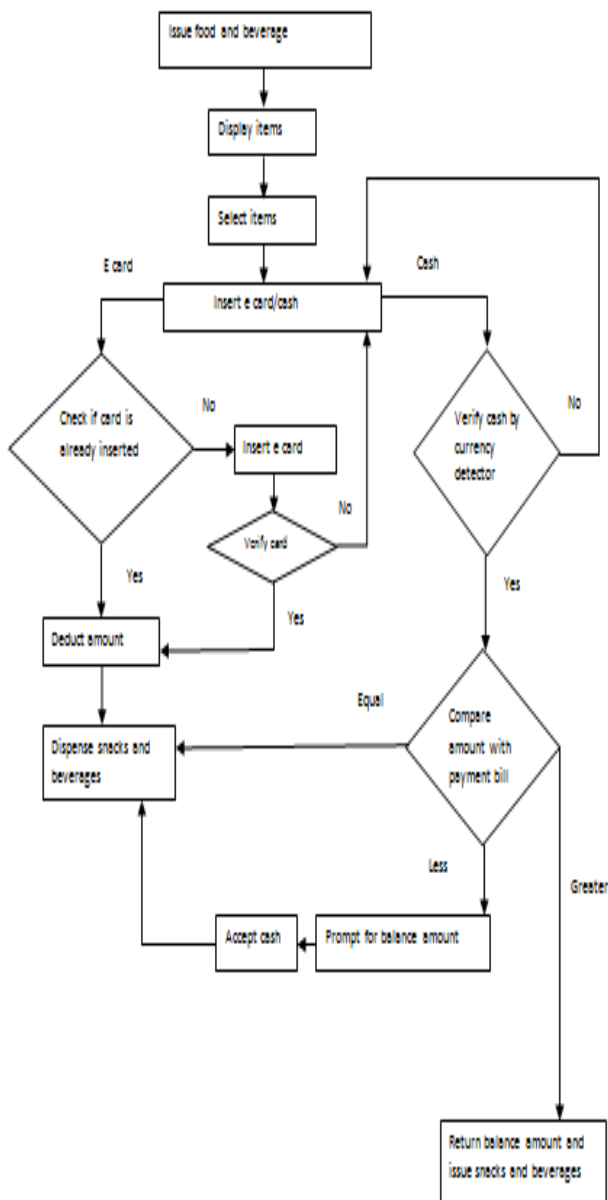

Fig. 1.2. Flow chart for issuing ticket

Fig. 1.3. Flow chart for issuing Food and Beverage

V. SOFTWARE AND HARDWARE CONSIDERATIONS

A. Kiosk software:

1. Graphical user interface: This application can be developed by using visual studio environment that includes windows presentation framework, windows workflow foundation and windows communication foundation and also provides the great developer features like XAML forms, workflow, Sqlserver reports that developer can create and edit. By using these technologies a rich GUI for movie ticket can be developed.

2. Database: Microsoft has multiple versions of SQL Server available to build rich applications. We can use the SQL server 2008 and above.

3. Operating System: Windows xp and above versions.

B. Kiosk hardware:

1. Touch monitor: A touch monitor consists of a touch-sensitive transparent screen placed over a CRT monitor or flat panel display monitor. Pictures or text on the screen instruct users to select or "touch" an option. Touch monitors are used in approximately 75 percent of all kiosk installations because of their ease of use, durability, and reliability

2. Printer: The kind of printer a kiosk needs depends on the kiosk's function. Kiosks most often use printers to print receipts, tickets, maps, and product information.

3. Magnetic stripe card reader: Used for accepting credit cards

5. Currency acceptor: for vending kiosks that deliver a product.

6. Swipe Machine: for online payment.

7. Ticket Dispenser: for dispensing tickets

8. Food& beverage dispenser: for dispensing food & beverage

VI. CONCLUSION

Automated Kiosk for Multiplexes is an engaging touch screen device that sets a new standard for customer self-servicing. Using automatic ticket systems enables to avoid confrontation i.e. mesh between the supervisors and customers. It reduces wait time for customers in long serpentine queues and minimizes staff costs. Customers can buy tickets and choose from a range of seating options—all without having to line up at a staffed point of sale or even collect tickets that have been pre-purchased online. The Combo vending machines feature various selections of snacks and beverage options along with e card capabilities.

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