TABLE RESERVATION AND MANAGEMENT SYSTEM

Field of Invention

The present invention relates generally to table reservation and management systems.

Background

Currently, the Restaurant industry in Singapore and most of the world use Pen and Paper as the medium of choice for taking reservations and assigning table seating. A small portion of restaurants in the world use more sophisticated PC based solutions.

These PC based systems, such as OpenTable in the US, as shown in FIG. 1, have proven to be successful. OpenTable has a user base of about 14,000 restaurants using its system in the US and Europe and since its inception in 1998, has seated more than 175 million diners worldwide. This system allows restaurants to take online reservations as well as manage its telephone bookings and walk-in customers.

Restaurants see the benefits of these systems to improve operational efficiency, increase revenue as well as leverage off the underlying customer database to provide better levels of service.

The draw back to the OpenTable and other PC based solutions however is the cost and difficulty of implementation.

Therefore, there is an apparent need for addressing the foregoing problems.

Summary

TableDB is a complete table management system that computerizes host-stand operations and replaces traditional pen-and-paper reservation system. Restaurant stand to save time and money through the operational efficiencies gained in this. Customer data is can be stored electronically and retrieved easily, allowing them to deliver a superior customer service experience.

TableDB will be able to integrate seamlessly with online websites, powering the backend needed to provide an instant, free, confirmed online reservation system. Diners will be able to book 24/7 and receive their confirmation immediately.

For restaurants, they will be able to fill their empty seats with customers coming from their own website and also the extensive booking network that we plan to build through our partner websites.

The system will:

Take walk-in and phone reservations.

Take online reservations through the website, mobile phone or other devices connected to the internet.

Provide reports and analytics to help restaurants analyse operations as well as make marketing decisions.

Help restaurants serve customers better by keeping customer dining history and preferences. For example, the system will know how many times the customer has dined at a restaurant.

Work with multiple tablet devices. All the data will be in sync and mirrored across all devices.

The backend data architecture will be based in the “cloud” and pushed to the tablet devices.

Be able to work both on WiFi and 3G connection.

Have a Point of Sales System integrated into the system or have the ability to communicate with existing Point of Sales system.

Brief Description of the Drawings

FIG. 1 shows a OpenTable PC-Based Solution in accordance to an example of a prior-art system;

FIG. 2 shows a reservation process implemented through a reservation module of a table reservation and management system ("Table DB") according to an embodiment of the invention;

FIGS. 3a to 3s show implementation screen-shots of a book view application module of the Table DB;

FIGS. 4a and 4b show implementation screen-shots of an announcement application module of the Table DB; and

FIG. 5a and 5b show implementation screen-shots of an analytics and reports application module of the Table DB.

Detailed Description

Reference will now be made in detail to an exemplary embodiment of the present invention, examples of which are illustrated in the accompanying drawings. While the invention will be described in conjunction with the embodiment, it will be understood that they are not intended to limit the invention to these embodiments. On the contrary, the invention is intended to cover alternatives, modifications and equivalents, which may be included within the spirit and scope of the invention as defined by the appended claims. Furthermore, in the following detailed description of embodiments of the present invention, numerous specific details are set forth in order to provide a thorough understanding of the present invention. However, it will be recognized by one of ordinary skill in the art that the present invention may be practiced without these specific details. In other instances, well-known methods, procedures, components, and circuits have not been described in detail as not to unnecessarily obscure aspects of the embodiments of the present invention

For purposes of brevity and clarity, descriptions of embodiments of the present invention are limited hereinafter to table reservation and management systems. This however does not preclude embodiments of the invention where fundamental principals prevalent among the various embodiments of the invention such as operational, functional or performance characteristics are required.

An exemplary embodiment of the invention, a table reservation and management system (also hereinafter known as “Table DB” or “TableDB”), is described with reference to FIGS 1 to 5.

The Table DB comprises a reservation module, for implementing a reservation process, and multiple application modules. Table reservations for, for example a diner, a restaurant or a portion thereof, is performed through the reservation module as shown in Fig. 2.
The reservation module has the following functions:
Allow for customers to search and make reservations for restaurants 24/7, every day of the year, in any part of the world
Integration with partner websites through online widgets and TableDB website to allow for strong link between reading restaurant reviews to a Call-for-Action i.e. making a reservation.
Online bookings through smart phone applications.
Also allows restaurants to take Walk-In and Phone Reservations.

Once reservations are taken, they are updated to a central Cloud Database. The Cloud Database will update the various Tablet devices in real time the status and availability of reservations.

Book View Application Module

The application modules comprise a book view application module. The purpose of the Book View is to represent a reservation book where the restaurant can have an overview of the restaurant’s reservations, the status of the reservations, the tables assigned as well as a summary of statistics as shown in Fig. 3a.

The book view application module has the following functions:

Calendar function as shown in Fig. 3b and with the following features:

Ability to change dates

Ability to jump back to today

Reservation Slots functions:

a) Empty slot function as shown in Fig. 3c and with the following features:

New slot created when tap on "+" button

Tap on left most square pop up to change table sizeon/off for whether online reservations are taken for the slot. If not available, than a choice for how long not available - never/3/6/12/24/48/72/96 hrs before dining time

Tap on centre square to add reservation

No Details are required for Walk-in customers

Tap on right most square to delete slot

b) Adding a Reservation function as shown in Fig. 3d and with the following features:

There should be 4 buttons - Clear, New, Select and No Details

Data input fields are First Name, Last Name, Company, Phone, and Email

Clear Button - Clears entered fields

New Button - allows you to create a new entry if you cannot find the person in the database

Select Button - highlighted when you select someone from the list. List of people appear as you type in the empty fields

No Details Button - if you do not want to key in details for the patron - usually

used when it's a walk-in

c) Full slot function as shown in Fig. 3e and with the following features:

Pop up will appear with different status when tap left most square as shown in Fig. 3f

Full reservation details when tap on centre square as shown in Fig. 3g

More details

Ability to change party size

Ability to select type of reservation - online, walk-in, phone

Ability to select table - goes to assign table page

Ability to change status - status pop up

Ability to assign reservation notes

Ability to switch reservation

Ability to view and edit customer profile

Ability to change time and date

Reassignment of Time as shown n Fig. 3h

Brings you back to the calendar but with only relevant slots highlighted.

Other reservation slots dimmed out - so user cannot edit them

Can add or delete slots in this view

Can move between calendars

Tap on empty slot to reassign

Shows details of existing reservation

After reassigning time, the table is auto unassigned

Assign Floor plan view to open up when tap on right most square as shown in Fig. 3i.

Assigning of Table

Tap table for selection

Allow for multiple tables selection

After the tables are selected, one or more symbols will be placed beside the table to indicate that the table(s) have been reserved.

Can remove selection but tapping table again or tapping on the "X" under Assign Table

Customer details, reservation time, party size, Reservation Notes, Customer Notes, and History info available

Symbol to appear if there are customer or guest notes in centre square as shown in Fig. 3j

Color bar status to appear on left most square

If reservation is done, size, guest name and table number to be dimmed out

If guest is No Show or Cancelled status, strike through across size, guest name and table number (if table number is applicable) as shown in Fig. 3k

Floor Plan functions as shown in Fig. 3l. The Floorplan shows the table layout, size of the table, table number, a list of reservations as well as the servers on duty. The table colors indicate the status of the table.

Times of current as well as upcoming reservations are also shown on the table.

Listing Categories as shown in Fig. 3m and with the following features:

- Breakdown of sections to All Slots, Reservations and Wait List
- When tap on Reservations, only show the reservation slots. When All Slots, show the blank slots. When click on Wait List, show the wait list.

Server Roster functions as shown in Fig. 3n and 3o.

- Tap to pull up or down list of servers
- On open, show list of servers, the number of people they are currently serving "Current" and the number they have served for the night "Total"
- Edit to Add or Delete Servers
- Assign daily servers - Show existing list of servers and able to assign them to the shift
- Able to select color of server and their server zone

Wait List as shown in Fig. 3p

- Show list of people added to the wait list
- Show long long they have waited for
- Show party size
- Be able to sms them when the table is ready

Search function

Search bar allow for searching of Name, Phone Number

When searching, results collapse to only show what is relevant

Tables function as shown in Fig. 3q

Show table size

Show Table Number

Color tab to differentiate table being served by wait staff

Color of table to reflect state of table

Show one or multiple reservation time slots on each table

If there are more than 2 reservations, show the ">" arrow

Able to edit / move tables on the fly

Future Reservations function as shown in Fig. 3r

On tapping on a table with multiple future reservation assigned to it, show list of future reservations assigned to the table.

Unassign button to unassign table

Blocking Table function as shown in Fig. 3s

Only allow blocking of empty table

on/off switch

Announcements Application Module

The application modules further comprise an announcements application module as shown in Fig. 4a and having the following functions:

Adding of announcements as shown in Fig. 4b

Add announcements will have a duration for the announcement and selection of whether it is ordinary or important

There are two types of announcements - important and ordinary.

If an announcement is important, it will appear as a pop up when user pin code is required. It will also be highlighted in red on the announcements page

Pop up will be accompanied by a black overlay to darken the screen below the pop up

Ability to open up all announcements into a full screen

Analytics and Reports Application Module

The application modules further comprise an analytics and reports application module having the following functions.

Real Time Reports function as shown in Fig. 5a and with the following feature:

Able to generate real time reports on the current status of the restaurant
These reports allow restaurants gauge customer arrival, allowing for better manpower and kitchen resourcing.

Historical analytics function as shown in Fig. 5b and with the following features:

Able to generate historical analysis such as which customer came a year ago, this time to celebrate this birthday at the restaurant.

Understand table turn times (how long customers sits), to better manage and improve occupancy rates
Able to see at one glance restaurant occupancy and compare across different days and seasons

Communicate with Point of Sales function with the following feature:

The apparatus can include a Point of Sales system or communicate with existing Point of Sales system using APIs so that we can track what a customer has eaten and restaurants can recommend food or drinks based on the customer’s last order.

Table DB may be built on various platforms such as Android or Windows Tablets. When operating on a tablet system, for example iPad, it Table DB provides significant advantages over existing PC-based solutions as shown in the below table:

	PC Based Solution	**Tablet Based Solution**
1	High cost of ownership and difficult set up: Requires technician to physically set up the machine and database (e.g. USD$1,295 set up fee for OpenTable) USD$200 Monthly subscription fee USD$1 online reservation USD$0.25 phone bookings	Low cost of ownership and easy set up - the application can be downloaded from the tablet's application store, for example the Apple App Store. There is low maintenance cost because the software is hosted on the internet and there is no requirement for a technician to maintain in house servers. Also there is low hardware replacement costs - we can easily replace the tablet.
2	Fixed location hardware Hardware is physically located in 1 place Hardware has limited use	Mobile, Flexible hardware with multiple uses The tablet can be brought anywhere; and restaurateur can take reservations from his home. Also the tablet has many more uses such as emailing, watching videos etc. Restaurateurs feel more value achieved from their machines
3	Limited scalability at high cost Sales effort and installation effort significant and slow, requiring sales and technical representatives to physically sell the product, resulting in high cost structure as well as slow speed. Hardware cost is high and specialised, requiring purchase directly from the supplier. Primary database sits in the	Global Potential Easy to “discover” software on App Store and install, requires no physical sales or installation effort Cheaper hardware cost that is easy to find – just pop into an Apple shop or order online. Database sits on scalable cloud infrastructure - Able to quickly be downloaded and used by restaurants across the world

	restaurant requiring configuration and set up.	
4	Less Intuitive and more cumbersome Primarily still PC based User Experience and Interface methodology Requires start up and loading time	Easy, Intuitive and Cool Tablet SDKs make use of touch screen mechanics for ease of use. Easy and fast to turn on "Cool" consumer product with strong brand identity

Utilisation of persistent internet connections to maintain a push connection

The apparatus will connect via wireless technologies like 3G networks, HSDPA, WiFi or future generations of mobile wireless technologies to maintain an always on connection. As such, the data can be pushed from the server in the internet via such persistent wireless technologies all subscribers of the data, including but not limited to the tablet devices, computer browsers and widgets placed on the restaurants' websites.

In situations where a persistent connection is not possible, the subscriber of the data will poll and ask the server if there is any change in the data.

Utilise scalable components on the cloud or internet

In order to achieve high scalability and availability, the system utilizes scalable components on the cloud. Using the persistent connections, the tablet or other client devices will send data to the server, with or without a load balancer, which will connect to a database hosted on the internet or cloud. The databases have the advantage of high availability and scalability through features like replication and autosharding.

The servers will utilize a push mechanism to transmit data to transmitted to the subscribers of the data through the persistent connections or always on connections.

Distribution of the application

The modes of distribution of the application will be through, but not limited to, the various app stores of the tablet devices. Unlike existing systems, this will achieve a high availability of the app and distribution throughout the world.

The application can be also distributed through other modes including distributing through a file or group of files hosted on a server, for example on the Android tablets.

Modes of payment

The costs of reservations may be borne by the restaurant or customer and be billed through multiple means but not limited to, online payment gateways that process credit cards or payment mechanisms like paypal. Other possible ways of billing include using

the existing billing mechanisms that the various Application Stores provide, recurring or otherwise, eg. Apple App Stores, to have a seamless experience for the restaurant or user.

Multiple Restaurants

Managers of chains or multiple restaurants will be able to monitor their individual restaurants through the application.

The application can generate group reports to show comparison of number of reservations, cancellations etc across restaurants. Further, the application allows users to manage group level and individual level databases. Additionally, the capabilities and functions of the application include i) management of access permissions across the various restaurants, ii) illustrating productivity of different restaurant staff (servers) across the different restaurants and iii) analysing trends for future marketing as a group.

In a forgoing manner, a table reservation and management system is described according to an exemplary embodiment of the invention. Although only one embodiment of the invention is disclosed in this document, it will be apparent to one skilled in the art in view of this disclosure that numerous changes and/or modifications can be made to the disclosed embodiment without departing from the scope and spirit of the invention.

Claims

1. A table reservation method comprising:

receiving a reservation query from a first device, the reservation query indicating a premise location and a reservation requirement;

retrieving a reservation record from a database associated with the premise location, the reservation record listing a plurality of tables, each of the plurality of tables being listed as one of available and unavailable;

identifying at least one of the plurality of tables being listed as available and satisfying the reservation requirement;

updating the reservation record by listing the identified at least one of the plurality of tables as unavailable and assigning a reference code thereto;

determining whether a plurality of target devices have persistent data connections; and

communicating the updated reservation record to the plurality of target devices having persistent data connections using a push mechanism.

2. The table reservation method of Claim 1 further comprising the step of:

receiving polls from a plurality of target devices that do not have persistent data connections wherein upon receiving these polls, communicating the updated reservation record to the plurality of target devices that transmitted these polls.

3. The table reservation method of Claim 1, further comprising:

receiving an amendment query from one of the plurality of target devices, the amendment query indicating the reference code and a target at least one of the plurality of table;

updating the reservation record by reassigning the reference code from the identified at least one of the plurality of tables to the target at least one of the plurality of tables; and

communicating the updated reservation record to the one of the plurality of target devices.

4. The table reservation method of Claim 1, each of the plurality of tables on the reservation record having a plurality of time slots and being listed as one of available and unavailable for each of the plurality of time slots,

wherein the reservation requirement is indicative of one of the plurality of time slots.

5. The table reservation method of Claim 1, the reservation query being further indicative of the reference code.

6. The table reservation method of Claim 5, the reference code being one of a customer name and a customer identifier.

7. The table reservation method of Claim 5, identifying at least one of the plurality of tables being listed as available and satisfying the reservation requirement comprising:

retrieving a customer record from the database associated with the premise location, the customer record being indicative of a plurality of customer preferences; and

identifying at least one of the plurality of tables being listed as available and satisfying the reservation requirement and at least one of the plurality of customer requirements associated with the reference code.

8. The table reservation method of Claim 7, the at least one of the plurality of customer requirements indicating preferred table placement.

9. The table reservation method of Claim 5, identifying at least one of the plurality of tables being listed as available and satisfying the reservation requirement comprising:

retrieving a customer record from the database associated with the premise location, the customer record being indicative of a plurality of customer preferences;

identifying at least one of the plurality of customer preferences associated with the reference code; and

communicating the identified at least one of the plurality of customer preferences to the at least one second device associated with the premise location.

10. The table reservation method of Claim 1, wherein at least one of the plurality of target devices is a wireless device.

11. The table reservation method of Claim 1 further comprising the steps of:

displaying a list of servers associated with the premise location wherein the list shows customers that are assigned to each of the servers in the list; and

assigning each of the servers in the list to a shift and a server zone.