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Restaurant Management System

Hemlata Biradar
Electronics Engineering, Ramrao Adik Institute of Technology, DY Patil Deemed to be University, Nerul, Navi Mumbai. India.
hemlata.biradar@rait.ac.in

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Abstract

Running a restaurant is chaotic enough, so why not make everyday processes easier by having a system in place to help reduce your workload? There are many everyday processes that restaurants have to deal with These can range from scheduling employees, managing manpower, tracking employee attendance, preparing for payroll, and keeping records of databases. In the current market, food places, restaurants, and their management have great value. There is a day-to-day increase in the number of restaurants and food outlets coming out today. The management system used for each restaurant is different from the other. Some restaurants may be large, others small, but each restaurant and hotel requires a management system, called a restaurant management system. RMS, i.e restaurant management systems, are important technologies for a single outlet or company to better serve its customers and assist employees with food and beverage transactions and controls. The restaurant management system is a database program that records all the activities and events that take place in the restaurant on daily basis. The restaurant management system helps to maintain an adequate record of all events in the restaurant database. Investing in elements such as marketing and decoration goes a long way in promoting the growth of a restaurant but investing in the right technology plays a major role in restaurant management software is mandatory. Every restaurant, whether small, large, benefits greatly from switching from manual restaurant management processes to automated or software-based.

I. INTRODUCTION

Motivation

We want to make this project to make a restaurant management system easier. We know that managing a restaurant in old traditions is very costly and time-consuming. To make the overall system efficient we want to make this management system. Here we want to serve our customers by providing them with a very efficient management system that will provide all kinds of management aids like workforce management, inventory control, tracking of sales, preparation of financial statements, etc.

Objective

The main purpose of RMS is to increase profits by increasing efficiency and decreasing mistakes. Mistakes that happen in restaurants will be eliminated without compromising customer satisfaction. At this time, many restaurants use a paper-based system to get messages between the restaurant and the kitchen. This way of communication is one of the least efficient methods. However, this approach may be implemented and designed in a successful profitable restaurant, but there are plenty of issues that can be considered as reducing the efficiency of restaurants are as follows:

- Lack of communication caused by handwriting.
- Unrestricted Order Registration (Bad Order Taking).
- Ineffective communication between the restaurant and the kitchen.
- Mistakes in order taking and lack of time management.
- Lack of good quality stock management.
- Limited statistical output.

So, to deal with these issues, we have developed an application called the Restaurant Management system that focuses mainly on the issues given above. We tried to create a user-friendly interface.

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Problem Definition

Nowadays, many restaurants manage their business manually, especially taking customer orders manually. In the traditional booking system, customers have to go to a restaurant or make one Phone call to book their tables and meals. Today, the restaurant staff jots down the customer orders using a manual system that is using paper. The customer makes some formal conversations like Hello, hi, etc then makes some discussions on the menu, then he orders. It takes5 to 10 minutes to book an order. Using paper has the potential to cause customer information to be lost and misplaced. The restaurant management system puts the order in a queue with specific priority taking into consideration the time and quantity, then a cook is appointed to the specific order to complete it. In addition, restaurant staff information is also done through the manual system It is difficult for a restaurant manager to find employee information and makes it difficult for referencing. The initial problem with the customer is to connect over the phone; If the restaurant is verypopular it will be difficult to contact them as the lines will always be busy. Sometimes, employee information and customer information are important to the restaurant Administrator for future reference. Many have experienced going to a restaurant where the service is poor. There is a lack of attention from the waiting staff. Paper menus are usually outdated, fragile, and difficult to navigate. An online restaurant system will be promoted by the growing mobile industry. This restaurant menu and management system will eliminate paper waste, be more maintainable, and allow more customer engagement.

II. Literature Survey

The current system is paper-based. Papers are used to display Traditional menu cards in restaurants, write customer orders, saving records of the customers. The disadvantages of a paper-based system are that the papers can be easily damaged by stain marks; They may be lost due to accidents or just simply misplaced. So, time and money are wasted. Since traditional menu cards are paper-based, no updates can be done. What needs to be done is that the menu will require a reprint. For minor changes, it is not possible to reprint the entire menu card. The menu card cannot be created dynamically. It is inefficient to access a specific record from a stack of papers. This system takes time. One has to call the staff and wait until they notice it and he comes to their table to take their order. Further, the chef can misunderstand because the waiter writes the customer's order on paper. It is possible to serve the wrong order. This method requires time and manual work [2]. When placing an order on the phone, the customer does not have a physical copy of the menu and hence no visual confirmation of whether the order was placed correctly. Every restaurant needs some staff to provide service over the phone, in person, and process the payment. In today's market, the labor rates are rising day by day and it is difficult to find employees when required [1]. An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it.

III. System Design

3.1 Front End:

1. ***HTML Hypertext Markup Language*** is the standard markup language for documents designed to be displayed in a web browser. It is supported by technologies such as cascading style sheets (CSS) and scripting languages such as JavaScript. Web browsers retrieve HTML documents from the web server or local storage And display documents on multimedia web pages [3]. HTML structure contains the semantics of the web page and the codes for the web page. With HTML structures, Interactive forms such as images and other objects can be embedded in the parsed page. HTML provides a way to create structured documents. Structural semantics for text such as titles, paragraphs, lists, links, citations, and the like Other aspects of HTML elements are described by tags, written using angle brackets. Other tags provide information about the document

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text. Tags can be added as sub-elements. Browsers do not display HTML tags but use them to describe the content of the page. HTML can embed programs written in a scripting language, such as JavaScript, It affects the behavior and content of web pages. PCSS defines inclusion as the form and layout of the content. promoted by the World Wide Web Consortium (W3C), the former maintainer of HTML and the current management of CSS standards, has encouraged the use of CSS over clear HTML presentations since 1997.

2. ***CSS Cascading Style Sheets*** is a style sheet language used for designing and presentation of a document written in HTML. CSS is a technology of the WWW, alongside HTML and JavaScript.CSS is designed to enable the separation of designing and content, including layout, color, and fonts. This can improve the content accessibility, provide more flexibility and control the specification of designing characteristics and also enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file. This reduces complexity and repetition in the structural content. Style sheet information can be provided from various sources. The information can be further classified into inline, media type, importance, selector specificity, rule order, inheritance, and property definition. CSS style information can be in a separate document or else it can be embedded into an HTML document. Multiple CSS style sheets can be imported [2]. Different styles can be applied depending on the output device being used. The CSS style sheet with the highest priority controls the content display. Declarations not set in the highest priority source are passed on to a lower priority source. This process is called cascading. One of the motives of CSS is to allow users greater control over presentation. Someone who finds red italic headings difficult to read may or may not apply a different style sheet. Depending on the browser and the website, a user may choose from various CSS style sheets provided by the designers or may remove all added styles and view the site using the browser's default styling, or override just the red italic heading without altering other attributes of the element.

3. JavaScript

JavaScript is a high-level, well-defined scripting language that conforms to the ECMAScript specification. Contains JavaScript curly bracket syntax, dynamic typing, prototype-based object orientation, and first-class functions. Along with HTML and CSS, JavaScript Is one of the key technologies on the World Wide Web. It enables interactive web pages and it is an essential part of web pages and web applications. Most websites use it, and major web browsers have a dedicated JavaScript engine to run it. It is a multi-paradigm language that supports event-driven, functional, and imperative programming styles. It contains APIs which work with text, arrays, dates, custom expressions, and the DOM. The language itself does not include any I/O, such as networking, storage, or graphics facilities. Earlier it was only implemented client-side in the web browsers but now JavaScript engines are embedded in many other types of host software, including server-side in web servers and databases and also in non-web programs like word processors and PDF software and also in runtime environments that make JavaScript available for writing mobile and desktop applications which includes desktop widgets. The terms vanilla javascript and vanilla js refer to javascript structures without additional libraries and frameworks. Scripts written in Vanilla JS are plain javascript code. (Google Chrome Extensions, Opera Extensions, Apple Safari 5 Extensions, Apple's Dashboard Widgets, Microsoft Gadgets, Yahoo! Widgets, Google Desktop Gadgets, and Serence Klipfolio are implemented using JavaScript.)

3.2 Back End

1. ***Python***: Python is an object-oriented, advanced programming language. IT has built-in data structures in conjunction with dynamic typing and dynamic binding which makes it very useful for Rapid Application Development. Python's simple and easy-to-learn syntax readability reduces the cost of

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the program and its maintenance. Python supports a variety of modules and packages, which decrease program limitations and code reuse. Python Translator and extensive standard libraries are available as open-source for all major sites free of charge. Often, programmers love Python because of the stability it provides. The edit-test-debug cycle is incredibly fast. Error or bad input will never cause a section issue. If the translator finds an error, it raises a 5 exception. When the program does not like the exception, the translator prints a layered tracker. The debugger is written in Python, which testifies to this. The intrinsic power of Python, on the other hand, is often the quickest way to debug. Adding some print statements to the program source: quick edit-testing-debugging. This cycle makes this simple approach very effective.

A)Django

Django is an independent and open-source web application framework written in Python. A framework is a collection of modules that makes development easier. They are grouped and allow you to create applications rather than starting websites from the scratch. This is how websites – even simple ones designed by a single person – can still include advanced functionalities (like authentication support, management and admin panels, contact forms, comment boxes, file upload support, and more.) In other words, if you were building a website from the beginning you would need it to develop these components on your own but when using a framework, these components are already built, you just need to configure them properly [4]. The official project site describes Django as a high-level Python web framework that encourages rapid development with a clean and practical design." It takes care of a lot of web development hassle. It is free and open-source. Django offers a large collection of modules that you can use on your Projects. Primarily, the framework exists for developers to save a lot of time and trouble [8]. You might also be interested to know that Django was built considering the front-end developers. The template language of Django is specifically designed to make designers feel extremely comfortable. It is also easy to learn for those working with HTML like designers front-end developers. But it is also flexible and highly extensible, allowing to enhance the template language as required by the developers. If you are going to work with Python, especially for web applications or Web design, you will want to remember the Django framework. It definitely will prove to be useful.

2. MySQL

MySQL is an open-source relational database management system based On Structured Query Language. It is a part of a very popular lamp platform consisting of Linux, Apache, My SQL, and PHP. Currently, my SQL is Is owned by Oracle. My SQL database is available on the most important OS platforms. This BSD runs on Unix, Linux, Windows, or Mac OS. Wikipedia and YouTube access My SQL. These sites handle millions of queries every day. My SQL comes in two Versions: My SQL Server System and My SQL Embedded System. RDBMS Glossary Before we explain the MySQL database system, let's modify some definitions database-related. Database: A database is a collection of rows and columns with related data [6].

Table: A table is a matrix with data. A table in the database looks like a simple Spreadsheet

Column: A column (data element) contains the same type of data, for example, column postcode.

Row: A row (= tuple, entry, or record) is a set of related data, for example, Data of a subscription. Redundancy: Storing data twice, unnecessarily, to make the system faster.

Primary Key: The primary key is unique. A prime value cannot occur twice in a table. With a key, you can find at most one line.

Foreign key: A foreign key is the collection of fields in one table. Compound Key: A compound key (composite key) is a key that consists of several Columns because a column is not sufficiently unique. Index: An index in a database resembles an index on the back of a book.

Referential Integrity: Referential integrity

ensures that a foreign key value always points to an existing row.

IV. System Implementation

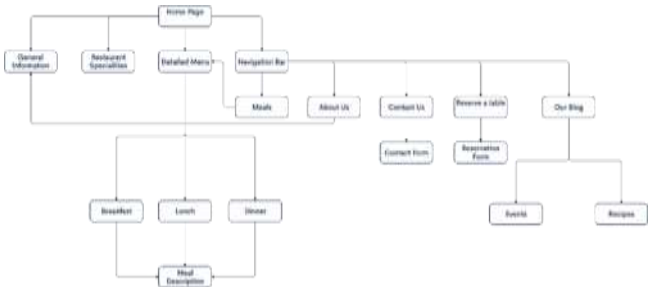

Figure 1: Flowchart of system Implementation

CONCLUSIONS

In this project, the current method of restaurant management is first analyzed and problems were identified. Secondly, keeping these problems in mind, a database is created to store and manage restaurant customers. Therefore, an online Restaurant Management System which uses this database is created. The system includes two main users: Admin (first user) whose responsibility is to manage all the restaurant activities such as adding food categories, adding food, adding latest events, managing table reservations, managing the special deal, add new staff. The customer (second user) can reserve a table, provide necessary feedback, read blogs, go through the menu card, check to price, etc. In this project, a database-driven online restaurant management system is developed. The system allows customers to reserve a table from anywhere they are. It also allows the management of the restaurant to view the reservations placed by the customer. This reduces the troublesome work of restaurant management.

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REFERENCES

[1] Amaka Juliet. (2013). Design and Implementation of a Computerized Restaurant Management Information System project report Malaysia.

[2] Edward John. (2013). Design and Implementation of Online Food Ordering System Project Report London

[3] http://www.iaetsdjaras.org/gallery/14-jaras-327-december.pdf

[4] https://www.irjet.net/archives/V4/i4/IRJET-V4I4497.pdf

[5]https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1278context=gradconfhospitality

[6] https://www.semanticscholar.org/paper/The-Impact-of-Online- Reservation-Systems

[7]https://www.researchgate.net/publication/324525715Restaurantreservationmanagementconsideringtablecombination.

[8]https://www.skillshare.com/classes/Build-A-Restaurant-Site- With-Python-andDjango/1355998460?via=video-control-barlearnMode=1