1. **INTRODUCTION**
   1. **Project definition- Digitally food ordering restaurant application**

Smartphones have marked their importance in Restaurant business by improving their service level and reach to the customers. Smartphones have made it possible for the end users or customers to book a table in restaurant or order a cuisine just using their phone.

Sometimes home delivery is also preferred with safe money transaction over the mobile. All this is possible with the help of Restaurant mobile application which provides information even to the level of chef's recommendation and food ingredients & spices used.

The food menu appears on the mobile front with appealing photo along with price details. User can also compare the prices with other restaurants before ordering the food. User can also find the restaurant on the interactive map using GPS facility to reach the place conveniently.

Restaurant mobile application is the best solution for today's fast moving world which seeks quick processing of all activities. This app comes in handy for planned reservation as well as for last minute booking. The details of customers are stored by the apps which help for customized service. The same database can be used for future promotional and marketing activities. Thus Restaurant Apps gains its own importance in the food servicing industry which helps to build the customer base and loyal customers.

**1.2 PURPOSE**

* The main purpose of the digitally food ordering Restaurant application is to reach to wider range of customers and to aware them about existing and new packages and discounts offered by restaurants.
* One more purpose is to allow customers to place order online using interactive menu so that they can receive order at home. Allow customer to pay online.
* Provide customers to place order from outside restaurant and get order placed when table is been allotted to them. This reduces the time consumption.
* The Online Restaurant Management System is to be developed to reduce the manual work carried out in restaurants; customers will be introduced with the interactive menu.
* This application helps the management to know customers order details in few seconds.

**1.3 EXISTING SYSTEM**

* The Existing system is manual system.
* All kind of works are carried out manually by the employees of the organization.
* Bill books are having bill number and the name of the customers.
* Separate registers are maintained for keeping written records of Bill, Stock, Services and Customers.
* **Limitations of the Current System:**

At present, the requirements of the system are done manually and hence there are number of limitations.

* The information is maintained in books and files, which is very difficult.
* Reports are produced by manual processing, that will be an unformatted manual and unreliable.
* Data security is less.
* Records are more prone to getting lost or misplaced.
* The Online Restaurant Management System has a large customer database which cannot be deal with using files and paper work methods.

**1.4 PROPOSED SYSTEM**

* The Digital Restaurant Management System maintains systematic records of the dealers, cars, employees, customers in a cost effective manner.
* It provides Data security by providing authentication for the user of the system.
* All records can be accessed exclusively by the administrator. The administrator has the rights to modify any record.
* Increased end user productivity because of flexible data access.
* Graphically oriented, highly interactive user interface.
* Increased developer productivity through usage of easy to use easy tools.
* Improved access to information because of networking.
* Better control of corporate data through centralized data, Systems & network management.
* Easier maintenance of application & data.
* It reduces the burden of staff.
* **Advantages Of The Proposed System**
* The proposed system fulfils all the functions needed by the management regarding database entries, customer and payments details.
* System maintains all required information of the customer, vendor, purchase payment details, sales details.
* System provides various notes related to service to facilitate the employees.
* System maintain backup of data base, import data, export data, to avoid loss of data.
* System gives alert automatically for low stock status.
* System maintains detail of the stock.
* The system allows the user to calculate any sort of payment related calculations.
* Reports are generating.

**1.5 Technology and literature review**

* **WHAT IS ANDROID?**

Android is an open source and Linux-based **Operating System** for mobile devices such as smartphones and tablet computers. Android was developed by the *Open Handset Alliance*, led by Google, and other companies. Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android.

The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007 where as the first commercial version, Android 1.0, was released in September 2008.On June 27, 2012, at the Google I/O conference, Google announced the next Android version, 4.1 **Jelly Bean**. Jelly Bean is an incremental update, with the primary aim of improving the user interface, both in terms of functionality and performance.

The source code for Android is available under free and open source software licenses. Google publishes most of the code under the Apache License version 2.0 and the rest, Linux kernel changes, under the GNU General Public License version 2.

* **HISTORY OF ANDROID**
* Android Inc. is founded by Andy Rubin, Rich Miner, Nick Sears, and Chris White. Andy Rubin and the team worked on the precursor to Android, which they aimed would run on phones and digital cameras.
* Initially developed by Android, Inc., which Google backed financially and later bought in 2005, Android was unveiled in 2007 along with the founding of the Open Handset Alliance: a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices. The first Android-powered phone was sold in October 2008.
* Android is open source and Google releases the code under the Apache License. This open-source code and permissive licensing allows the software to be freely modified and distributed by device manufacturers, wireless carriers and enthusiast developers. In October 2012, there were approximately 700,000 apps available for Android, and the estimated number of applications downloaded from Google Play, Android's primary app store, was 25 billion.
* **OPEN HANDSET ALLIANCE**
* The open handset alliance (OHA) is a business alliance of firm to develop open standard for mobile devices.
* Devoted to advancing open standards for mobile devices
* Develop technologies that will significantly lower the cost of developing and distributing mobile devices and services.
* **ANDROID VERSIONS**
* Android 1.0 (Angel Cake)-The first version of the open source software was released back in 2008.
* Android 1.1 (Battenberg)-In Feb 2009, version 1.1
* Android 1.5 (Cupcake)-Launched in April 2009
* Android 1.6 (Donut)-released in September 2009
* Android 2.0 / 2.1 (Éclair)-released in 26 October 2009 and January 2010
* Android 2.2 (Froyo) –frozen yogurt:-Released in the summer of 2010
* Android 2.3 (Gingerbread):- Gingerbread landed by the end of 2010
* Android 3.0 (Honeycomb) :- For the first time Google released a software that was totally focused on tablets. This version, released in July/august 2011
* Android 4.0 (Ice Cream Sandwich 4.0) -released in October 2011
* Android 4.1 (jelly bean4.1) -released in 26th June 2012
* After so many desserts named version of android is going to offer something with even tastier dessert. The upcoming version of android 4.4 was KITKAT released on October 2013.
* **ANDROID ARCHITECTURE**

The software stack is split into Four Layers:-

* The application layer
* The application framework
* The libraries and runtime
* The kernel



**Fig. Android Architecture**

* **LINUX KERNEL**
* The architecture is based on the Linux2.6 kernel.
* This layer is core of android architecture. It provides service like power management, memory management, security etc.
* It helps in software or hardware binding for better communication.
* **NATIVE LIBRARIES**
* Android has its own libraries, which is written in C/C++. These libraries cannot be accessed directly. With the help of application framework, we can access these libraries. There are many libraries like web libraries to access web browsers, libraries for android and video formats etc.
* **Android Run Time**
* **Dalvik virtual machine-** The Android Runtime was designed specifically for Android to meet the needs of running in an embedded environment where you have limited battery, limited memory, limited CPU.
* Dalvik is the process virtual machine in Google's android operating system. It is the software that runs the apps on android devices. Dalvik is thus an integral part of android, which is typically used on mobile devices such as mobile phones and tablet computers.
* Programs are commonly written in java and compiled to byte code.
* **Core libraries-** This is in blue, meaning that it's written in the Java programming language.
* The core library contains all of the collection classes, utilities, IO, all the utilities and tools that you’ve come to expected to use.
* **Application Framework:-** This is all written in a Java programming language and the application framework is the toolkit that all applications use.
* These applications include the ones that come with a phone like the home applications, or the phone application.
* It includes applications written by Google, and it includes apps that will be written by you.
* So, all apps use the same framework and the same APIs.

These are as follows:-

* **Activity manager:-**It manages the lifecycle of applications. It enables proper management of all the activities. All the activities are controlled by activity manager.
* **Resource manager:-**It provides access to non-code resources such as graphics etc.
* **Notification manager:-**It enables all applications to display custom alerts in status bar.
* **Location manager:-**It fires alerts when user enters or leaves a specified geographical location.
* **Package manager**:-It is use to retrieve the data about installed packages on device.
* **Window manager:-**It is use to create views and layouts.
* **Telephony manager:-**It is use to handle settings of network connection and all information about services on device.
* **APPLICATION LAYER**
* The final layer on top is Applications.
* It includes the home application, the contacts application, the browser, and apps.
* It is the most upper layer in android architecture.
* All the applications like camera, Google maps, browser, sms, calendars, contacts are native applications. These applications works with end user with the help of application framework to operate.
* **SECURITY**
* Android is a multi-process system, in which each application (and parts of the system) runs in its own process. Most security between applications and the system is enforced at the process level through standard Linux facilities, such as user and group IDs that are assigned to applications.
* Android is designed having multi-layer security which provides flexibility for this platform. When attackers attempt attack on device, android platform help to reduce the portability of the attack.

There are key components of android security which are described as follows:-

* Design review:-when a security model is designed then it will be reviewed by the developers so that risk level will be very less while using the model.
* Code review and penetrating testing:-the goal of this code review is that in which it will be checked that how the system will become strong?
* Open source and community review:-android uses open source technologies that have significant external review such as Linux kernel.
* Incident response:-android team enables the rapid mitigation of vulnerabilities to ensure that potential risks to all android users are minimized.
* **FEATURES OF ANDROID:-**
* Background Wi-Fi location still runs even when Wi-Fi is turned off
* Developer logging and analysing enhancements
* It is optimized for mobile devices.
* It enables reuse and replacement of components.
* Java support, media support, multi touch, video calling, multi-tasking ,voice based features, screen capture, camera, Bluetooth, GPS compass and accelerometer,3G.
* **ADVANTAGES**
* The ability for anyone to customize the Google Android platform
* It gives you better notification.
* It lets you choose your hardware.
* It has better app market(1,80,000 application)
* A more mature platform
* With the support of many applications, the user can change the screen display.
* With Google chrome you can open many windows at once.
* Supports all Google services: Android operating system supports all of Google services ranging from Gmail to Google reader. All Google services can you have with one operating system, namely Android.
* **DISADVANTAGES**
* Android Market is less control of the manager, sometimes there are malware.
* Wasteful Batteries, This is because the OS is a lot of "process" in the background causing the battery quickly drains.
* Sometimes slow device company issued an official version of Android your own .
* Extremely inconsistence in design among apps.
* Very unstable and often hang or crash.
* **LIMITATIONS OF ANDROID**

Development requirements in

* Java
* Android SDK

**Bluetooth limitations:-**

* Android doesn't support:
  + - Bluetooth stereo
    - Contacts exchange
    - Modem pairing
    - Wireless keyboards
* Firefox mobile isn't coming to android because of android limitations Apps in Android Market need to be programmed with a custom form of Java
* There are no split or interval times available.
* Small memory size.
* Continuous Internet connection is required.

**Ch-2 PROJECT SUMMARY**

**1.6 DETAIL DESCRIPTION**

* **Modules**

**1**. **Customer:**

This project module consists in an Android application that can be used by employees in a restaurant to handle the clients, their orders and can help them easily find free tables or place orders. This application, created mainly for proof of proper user-mobile interaction.

**2. Administrator:**

Administrator is the person who will manage the entire system. This type of user will also do maintenance and control the application of this system. Administrator takes a responsibility to a new customer, new waiter, new menu into database and they also take a payment of orders and generate report of system.

**3.waiter:**

This module has two part like waiter and chef. Both are given service in restaurant they can login in this application and takes order from admin and then chef will prepare the food and waiter serves the order to customer.

* **Project Deliverables**

Regarding to the module that had been identified, the flow of an activity will be described in term of customer module, customer ordering and reservation module, waiter module, feedback module, menu module and generate report module.

* **Customer Ordering *and* Reservation Module**

Customer ordering and reservation module provides a form that needs to be fulfilling in term of ordering food and reservation table.

* **Waiter Module**

Waiter module contains waiter information such as waiter personal information, task schedule and other information related to that waiter. Then, all of this information recorded into database.

* **Feedback Module**

Based on food or everything about the restaurant, customer can send any suggestion or comment to the restaurant with feedback form. From this form, side of restaurant will know their weaknesses and strengths.

* **Menu Module**

Menu module is food that restaurant prepared for customer. In This module, customer can view the menu and make decision for order through the device.

* **Generate Report Module**

System provides an option for generate a report. The contents of the report as the following:

1. The report of customer ordering and reservation table.

2. Customer's information and waiter information.

3. Suggestion or comment that customer insert at feedback form.

4. Profit business for restaurant.

**1.7 BENEFITS**

* Retain customers by encouraging them to reserve table and food.
* Feedbacks from customers for customized service.
* Loyalty programs can be combined to enhance the application.
* Easy table reservation and cuisine booking.
* Flexible home delivery option.
* Easy payment processing.
* Good interaction with customers using social media.
* Business Easily locate the restaurant using map function in App.
* Good medium for market promotion.
* Increase the count of loyal customers.
* Increase online presence via mobile.
* Improve on revenue.
* **HARDWARE REQUIREMENTS:**
* System : Pentium Intel inside core i5 .
* Hard Disk : 40 GB.
* Floppy Drive : 1.44 Mb.
* Ram : 512 Mb.
* **SOFTWARE REQUIREMENTS:**
* Operating system : Windows 8.
* Coding Language : Java
* Tool Kit : Android 2.2
* IDE : android studio