VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAVI, KARNATAKA -590 018

Mini Project Report on

"Restaurant Management System"

Submitted in partial fulfilment for the Mobile Application Development Laboratory (18CSMP68) course of Sixth Semester of Bachelor of Engineering in Computer Science & Engineering during the academic year 2020-21.

Submitted By

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

JSS MAHAVIDYAPEETHA

JSS ACADEMY OF TECHNICAL EDUCATION

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CERTIFICATE

This is to certify that the mini project work entitled **"Restaurant Management System"** is a bonafide work carried out by **ADITYA RASTOGI (1JS18CS008) , AMIT (1JS18CS015)** in partial fulfillment for the ***Mobile Application Development Laboratory (18CSMP68)*** prescribed by the Visvesvaraya Technological University, Belgaum during the year 2020-21 for the sixth semester B.E. in Computer Science and Engineering. The mini project report has been approved as it satisfies the academic requirements with respect to the mini project work prescribed for the sixth semester ***Mobile Application Development Laboratory (18CSMP68)***.

Signature of Guide

Swetha Kaddi
Dept. of CSE, JSSATE Bangalore

Signature of HOD

Dr N.C.Naveen,
Professor and Head,
Dept. of CSE, JSSATE Bangalore

Name of the Examiners	**Signature with date**
1.....	….....
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ABSTRACT

DineOut is an Android based Restaurant Management System that aims to digitalize the process of various restaurant operations including ordering, billing kitchen, hall and inventory management.

The main purpose is to improve the performance of the restaurant by eradicating the daily paperwork. With this system the tasks would be performed in less amount of time and more efficiently. An additional benefit of this software is that during the rush hours the load can be balanced effectively, and restaurants would perform better than usual. In addition to this, human error that occurs when performing tasks manually is also minimized and presence of queues in the system to assign tasks to chefs can reduce congestion in the kitchen. The system would also result in reduction of labor which would result in the reduction of expenses of the restaurant. Feedback module would help the restaurant check for how well they are performing, and monthly/yearly figures can be checked by the billing module to see the trends in sales and profits. These benefits can potentially result in generation of more revenues for the restaurant.

ACKNOWLEDGEMENT

We sincerely owe our gratitude to all the persons who helped and guided us in completing this mini project work.

We are thankful to **Dr. Mrityunjaya V Latte**, **Principal, JSS Academy Of Technical Education** , **Bangalore** for having supported us in our academic endeavors.

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ADITYA RASTOGI (1JS18CS008)

AMIT (1JS18CS015)

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Chapter 1

1.1 Introduction

Android is a mobile operating system based on a modified version of the Linux kernel and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets. Android is developed by a consortium of developers known as the Open Handset Alliance and commercially sponsored by Google. It was unveiled in November 2007, with the first commercial Android device, the HTC Dream, being launched in September 2008.

It is free and open-source software; its source code is known as Android Open Source Project (AOSP), which is primarily licensed under the Apache License. However most Android devices ship with additional proprietary software pre-installed, most notably Google Mobile Services (GMS) which includes core apps such as Google Chrome, the digital distribution platform Google Play and associated Google Play Services development platform.

About 70 percent of Android smartphones run Google's ecosystem; some with vendor-customized user interface and software suite, such as *TouchWiz* and later *One UI* by Samsung, and *HTC Sense*. Competing Android ecosystems and forks include Fire OS (developed by Amazon) or LineageOS. However the "Android" name and logo are trademarks of Google which impose standards to restrict "uncertified" devices outside their ecosystem to use Android branding.

The source code has been used to develop variants of Android on a range of other electronics, such as game consoles, digital cameras, portable media players, PCs and others, each with a specialized user interface. Some well known derivatives include Android TV for televisions and Wear OS for wearables, both developed by Google. Software packages on Android, which use the APK format, are generally distributed through proprietary application stores like Google Play Store, Samsung Galaxy Store, Huawei AppGallery, Cafe Bazaar, and GetJar, or open source platforms like Aptoide or F-Droid.

Android has been the best-selling OS worldwide on smartphones since 2011 and on tablets since 2013. As of May 2021, it has over three billion monthly active users, the largest installed base of any operating system, and as of January 2021, the Google Play Store features over 3 million apps. The current stable version is Android 11, released on September 8, 2020.

1.1.1 Software Development Kit (SDK)

A **software development kit** (**SDK**) is a collection of software development tools in one installable package. They facilitate the creation of applications by having a compiler, debugger and perhaps a software framework. They are normally specific to a hardware platform and operating system combination. To create applications with advanced functionalities such as advertisements, push notifications, etc; most application software developers use specific software development kits.

Some SDKs are required for developing a platform-specific app. For example, the development of an Android app on the Java platform requires a Java Development Kit. For iOS applications (apps) the iOS SDK is required. For Universal Windows Platform the .NET Framework SDK might be used. There are also SDKs that add additional features and can be installed in apps to provide analytics, data about application activity, and monetization options. Some prominent creators of these types of SDKs include Google, Smaato, InMobi, and Facebook.

1.1.2 Java Development Kit (JDK)

The Java Development Kit (JDK) is an implementation of either one of the Java Platform, Standard Edition, Java Platform, Enterprise Edition, or Java Platform, Micro Edition platforms released by Oracle Corporation in the form of a binary product aimed at Java developers on Solaris, Linux, macOS or Windows. The JDK includes a private JVM and a few other resources to finish the development of a Java application. Since the introduction of the Java platform, it has been by far the most widely used Software Development Kit (SDK).

1.1.3 XML

Extensible Markup Language (**XML**) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. The World Wide Web Consortium's XML 1.0 Specification of 1998 and several other related specifications all of them free open standards—define XML.
The design goals of XML emphasize simplicity, generality, and usability across the Internet.\
It is a textual data format with strong support via Unicode for different human languages. Although the design of XML focuses on documents, the language is widely used for the representation of arbitrary data structure such as those used in web services.
Several schema systems exist to aid in the definition of XML-based languages, while programmers have developed many application programming interfaces (APIs) to aid the processing of XML data.

1.1.2 Android Studio

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems or as a subscription-based service in 2020 It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development.

Android Studio was announced on May 16, 2013 at the Google I/O conference. It was in the early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in June 2014. The first stable build was released in December 2014, starting from version 1.0.
On May 7, 2019, Kotlin replaced Java as Google's preferred language for Android app development. Java is still supported, as is C++.

A specific feature of the Android Studio is an absence of the possibility to switch autosave feature off.

The following features are provided in the current stable version:

- Gradle-based build support
- Android-specific refactoring and quick fixes
- Lint tools to catch performance, usability, version compatibility and other problems
- ProGuard integration and app-signing capabilities
- Template-based wizards to create common Android designs and components
- A rich layout editor that allows users to drag-and-drop UI components, option to preview layouts on multiple screen configurations
- Support for building Android Wear apps
- Built-in support for Google Cloud Platform, enabling integration with Firebase Cloud Messaging (Earlier 'Google Cloud Messaging') and Google App Engine
- Android Virtual Device (Emulator) to run and debug apps in the Android studio.

Android Studio supports all the same programming languages of IntelliJ (and CLion) e.g. Java, C++, and more with extensions, such as Go; and Android Studio 3.0 or later supports Kotlin and "all Java 7 language features and a subset of Java 8 language features that vary by platform version." External projects backport some Java 9 features. While IntelliJ states that Android Studio supports all released Java versions, and Java 12, it's not clear to what level Android Studio supports Java versions up to Java 12 (the documentation mentions partial Java 8 support). At least some new language features up to Java 12 are usable in Android.

Once an app has been compiled with Android Studio, it can be published on the Google Play Store. The application has to be in line with the Google Play Store developer content policy

1.2 Objectives

Android based Restaurant Management System that aims to digitalize the process of various restaurant operations including **ordering, billing kitchen, hall and inventory management**. The main purpose is to **improve the performance** of the restaurant by eradicating the daily paperwork. With this system the tasks would be performed in less amount of time and more efficiently. An additional benefit of this software is that during the rush hours the load can be balanced effectively, and restaurants would perform better than usual. In addition to this, human error that occurs when performing tasks manually is also minimized and presence of queues in the system to assign tasks to chefs can reduce congestion in the kitchen. The system would also result in reduction of labor which would result in the reduction of expenses of the restaurant. Feedback module would help the restaurant check for how well they are performing, and monthly/yearly figures can be checked by the billing module to see the trends in sales and profits. These benefits can potentially result in generation of more revenues for the restaurant.

1.3 Organization of the Report

Chapter 1 provides the information about the basics of Android App Development. In Chapter 2, we discuss the software and hardware requirements to run the above applications. Chapter 3 gives the idea of the project and its actual implementation. Chapter 4 discusses about the results and discussions of the program. Chapter 5 concludes by giving the direction for future enhancement.

1.4 Summary

The chapter discussed before is an overview about the android application and android studio used for app development. The scope of study and objectives of the project are mentioned clearly. The organization of the report is been pictured to increase the readability. Further, coming up chapters depicts the use of various queries to implement various changes like insert, update, delete and also triggers to perform various functions.

Chapter 2

Requirement Specifications

- **Windows Vista (32-bit or 64-bit)**
- **Windows 7 (32-bit or 64-bit)**
- **Windows 8 / Windows 8.1 or later**
- **Mac OS X 10.8.5 or later (Intel based systems only)**
- **Linux systems with version 2.15 or later of GNU C Library (glibc)**
- **Minimum of 2GB of RAM (4GB is preferred)**
- **Approximately 4.5GB of available disk space**

USER CHARACTERISTICS

Every user:

- Should be comfortable with basic working of the computer and mobile
- Must have basic knowledge of English

Chapter 3

System Design and Implementation

3.1 Introduction

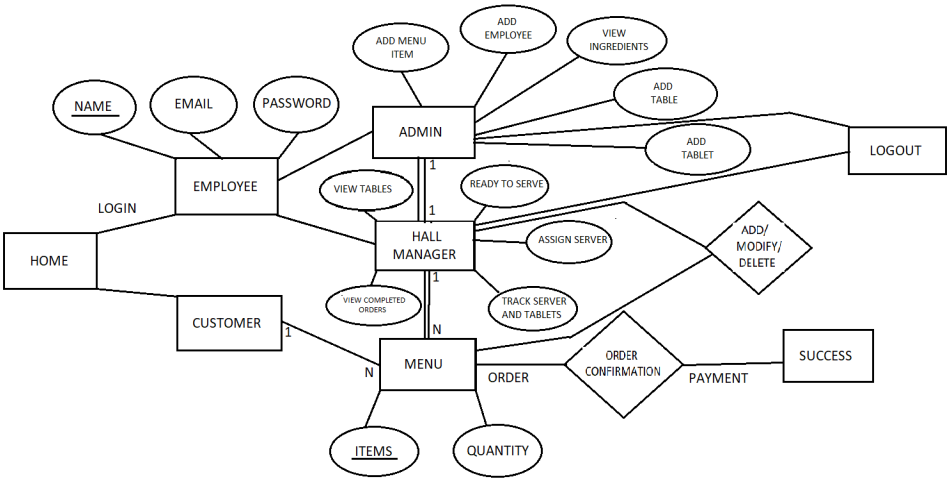
Systems design is the process or art of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. One could see it as the application of systems theory to product development.

This Project is implemented using JAVASCRIPTNetBeans, which is proven to be a very efficient tool in the field of Java programming. It is done under Windows10 platform. JQuerystdio.h library is used to create the objects and to translate them. Java PHP programming language is used to implement the entire code. Interface to the program is provided with the help of MySQL Database.

3.2 ER Diagram

An entity–relationship model or the ER Diagram describes inter-related things of interest in a specific domain of knowledge. An ER model is composed of entity types and specifies relationships that can exist between instances of those entity types.

In software engineering an ER model is commonly formed to represent things that a business needs to remember in order to perform business processes. Consequently, the ER model becomes an abstract data model that defines a data or information structure that can be implemented in a database, typically a relational database.

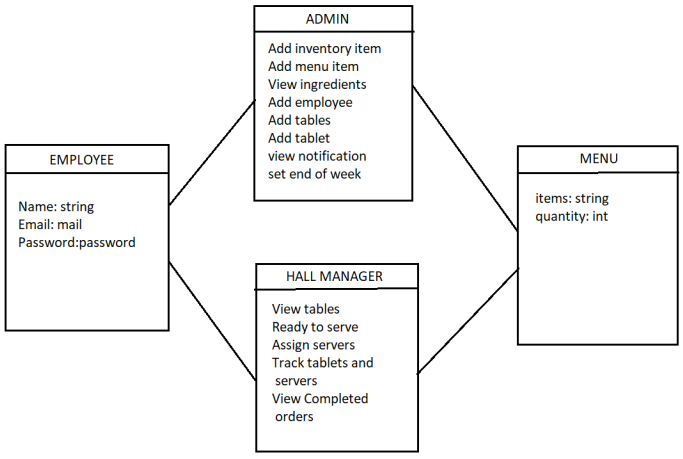


3.3 Schema Diagram

The schema diagram of a database system is its structure described in a formal language supported by the database management system (DBMS). The formal definition of a database schema is a set of formulas called integrity constraints imposed on a database.

The term "schema" refers to the organization of data as a blueprint of how the database is constructed .

TABLES

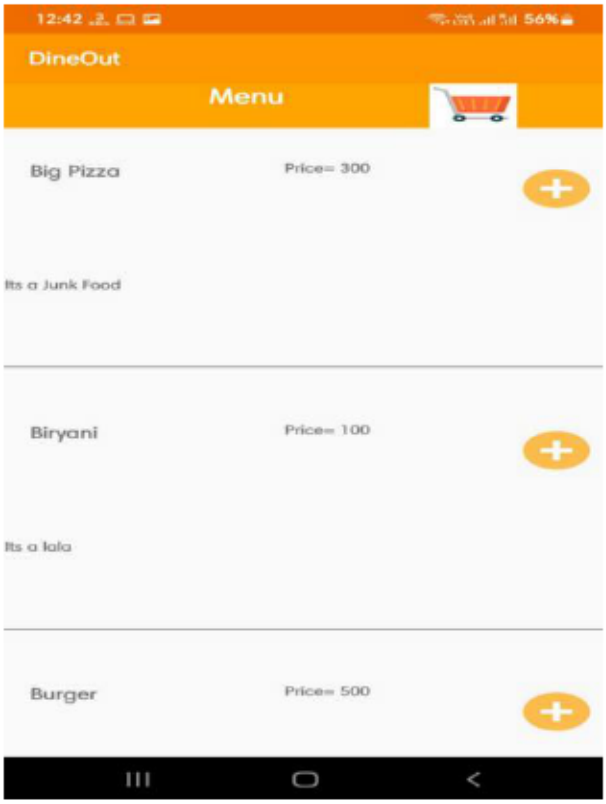


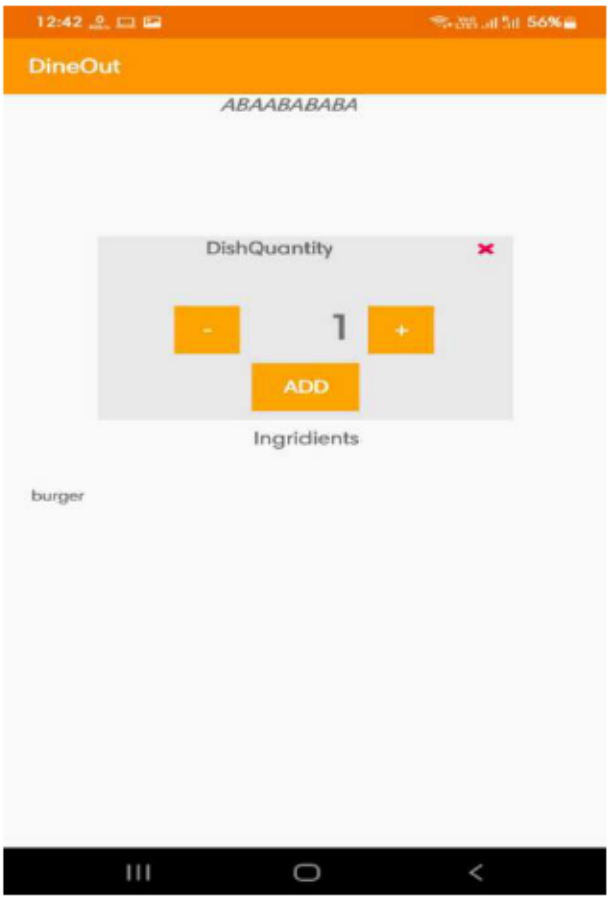
Future Enhancement

The future scope of our project is vast and can be used in extensive ways:

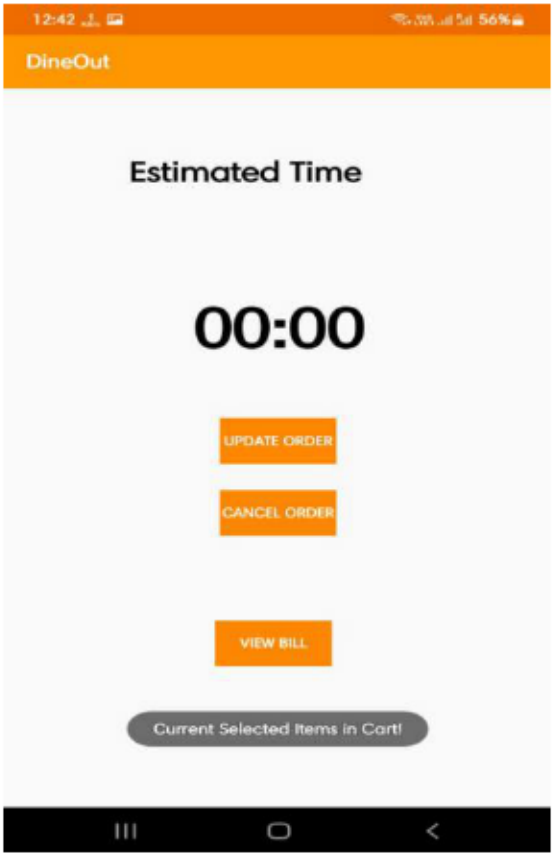
As discussed the limitation of this system, we can implement this as a client/ server system. So all the data will be stored in the single machine, and for any purpose all the data will be retrieved from this central database. So there will be no human work required for the employee. There will be only one person required who will maintain this central database .

SCREENSHOTS

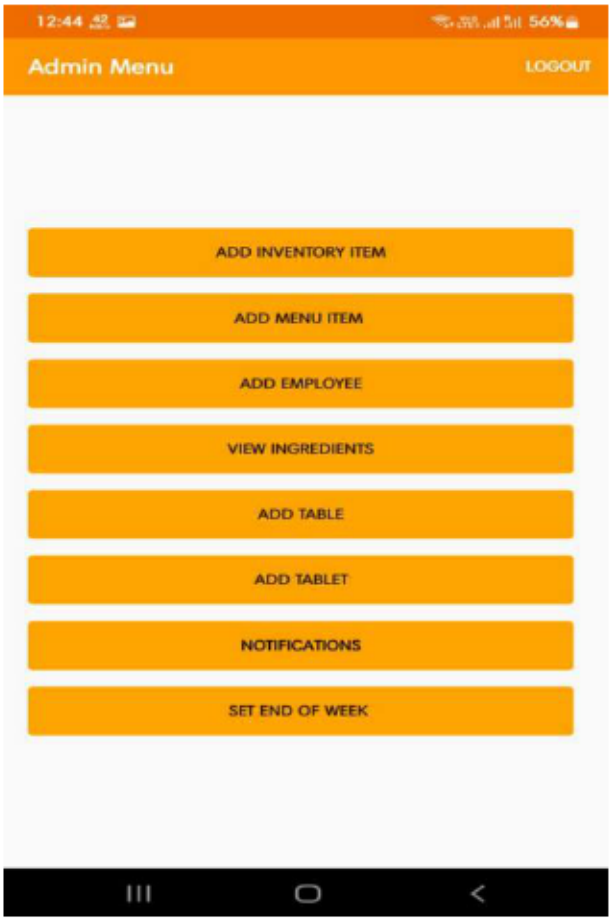


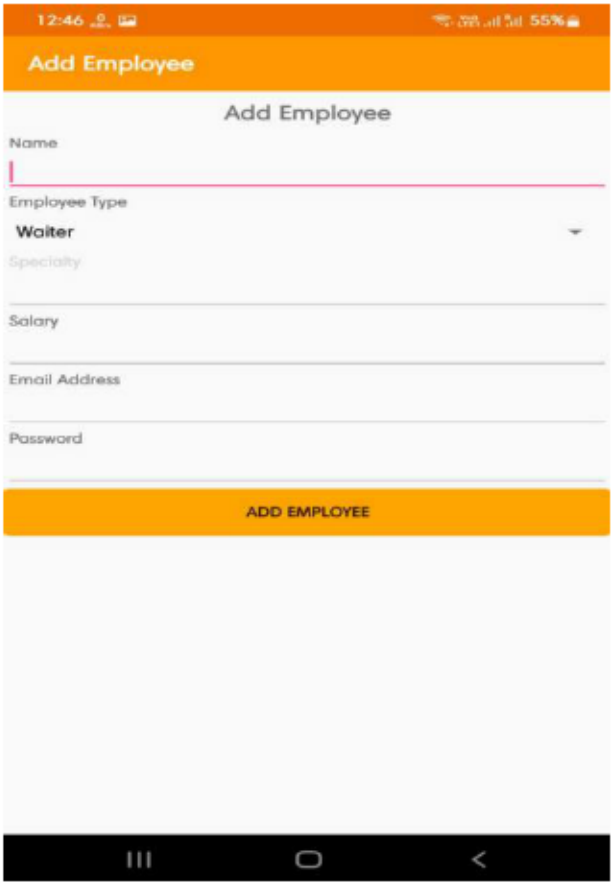


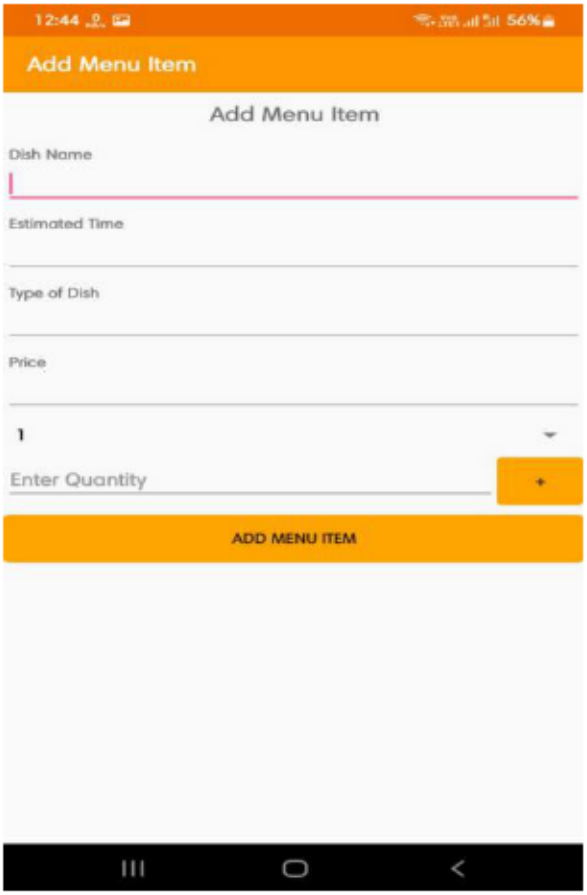

Proceed To Check Out?
NO
YES


DineOut
Estimated Time
00:00
UPDATE ORDER
CANCEL ORDER
VIEW BILL
Current Selected Items in Cart!

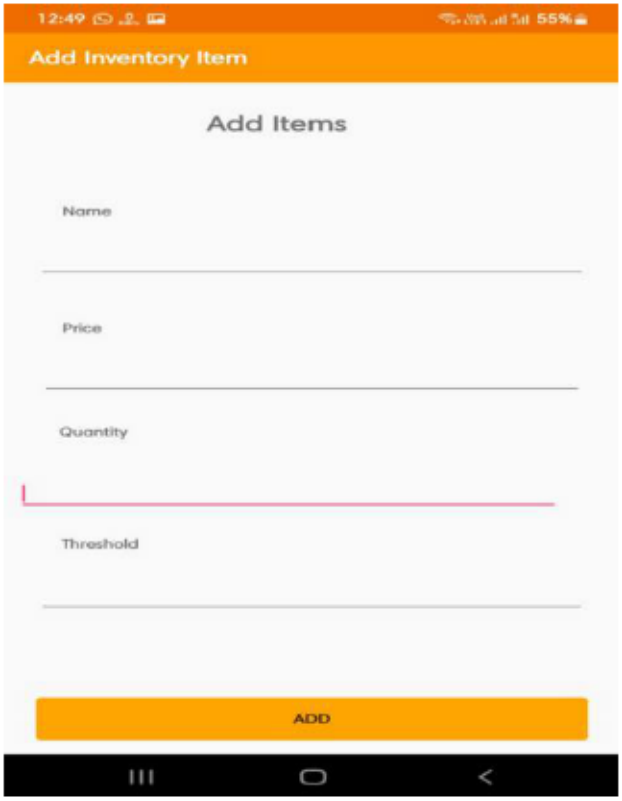

Login
Email
admin@gmail.com
Password
LOGIN

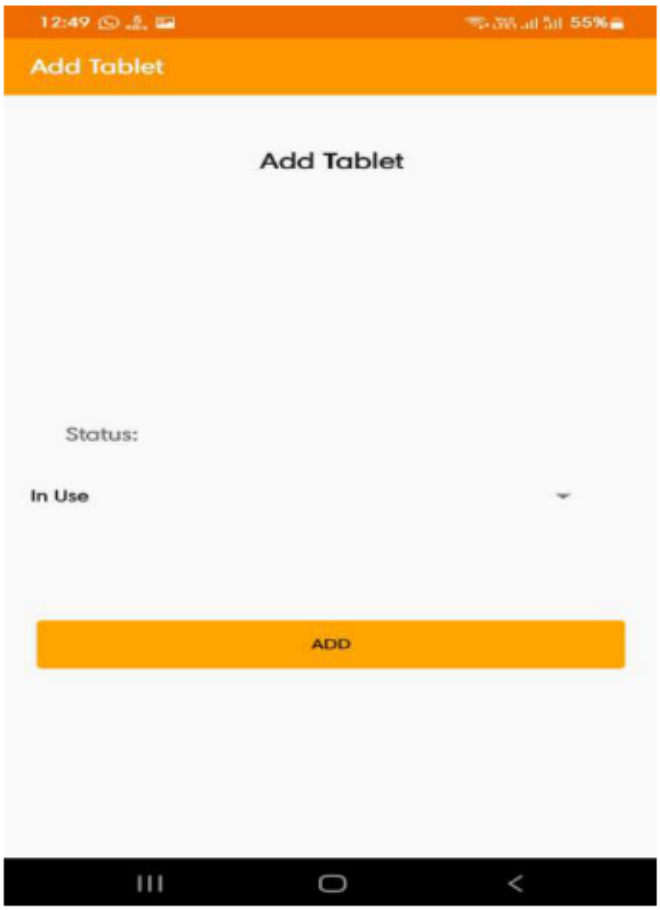

Admin Menu
LOGOUT
ADD INVENTORY ITEM
ADD MENU ITEM
ADD EMPLOYEE
VIEW INGREDIENTS
ADD TABLE
ADD TABLET
NOTIFICATIONS
SET END OF WEEK


12:46
55%
Add Employee
Add Employee
Name
Employee Type
Waiter
Specialty
Salary
Email Address
Password
ADD EMPLOYEE


12:44
56%
Add Menu Item
Add Menu Item
Dish Name
Estimated Time
Type of Dish
Price
1
Enter Quantity
+
ADD MENU ITEM


12:49
55%
Add Table
Add Table
Status:
Free
Capacity:
ADD


12:49
55%
Add Inventory Item
Add Items
Name
Price
Quantity
Threshold
ADD


12:49
55%
Add Tablet
Add Tablet
Status:
In Use
ADD


12:45
55%
Notifications
Items Below Threshold
Item Name: 1
20:12
Item Name: Butter
20:12
Item Name: 1
20:12
Item Name: 1
20:12
Item Name: Fried Rice
20:11
Item Name: Fried Rice
20:11
Item Name: 1
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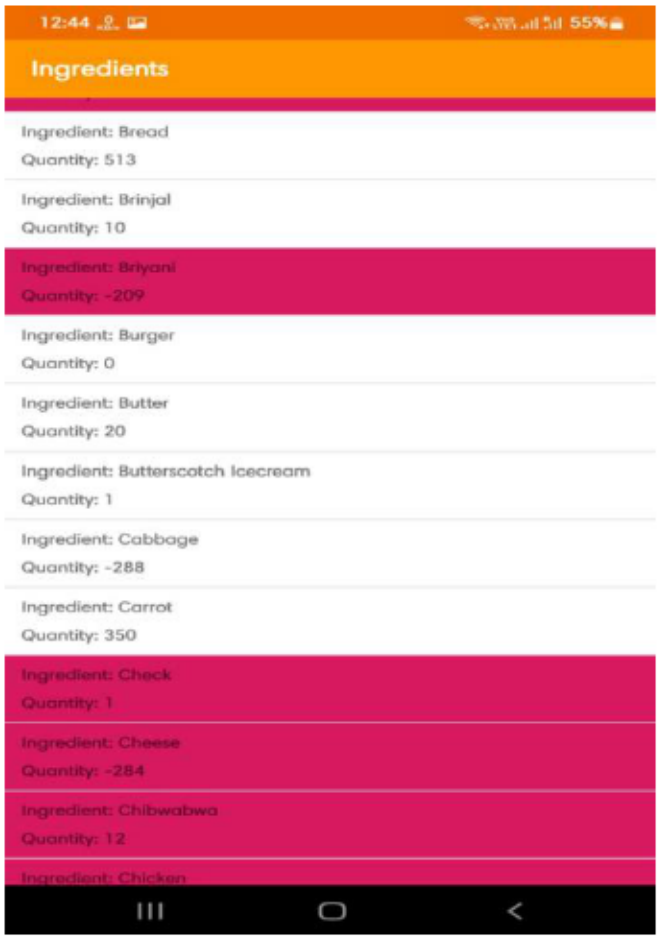
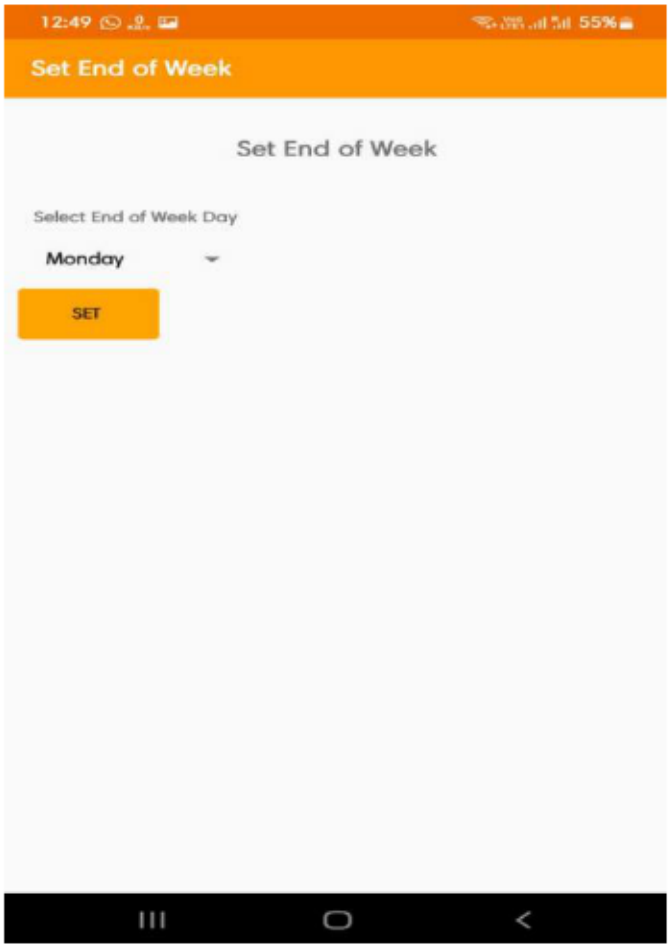
Item Name: Alexis
19:11
Item Name: 1
19:11
Item Name: 1
19:10
Item Name: Milk
13:19


12:44
55%
Ingredients
Ingredient: Bread
Quantity: 513
Ingredient: Brinjal
Quantity: 10
Ingredient: Briyani
Quantity: -209
Ingredient: Burger
Quantity: 0
Ingredient: Butter
Quantity: 20
Ingredient: Butterscotch Icecream
Quantity: 1
Ingredient: Cabbage
Quantity: -288
Ingredient: Carrot
Quantity: 350
Ingredient: Check
Quantity: 1
Ingredient: Cheese
Quantity: -284
Ingredient: Chibwabwa
Quantity: 12
Ingredient: Chicken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Set End of Week
Set End of Week
Select End of Week Day
Monday
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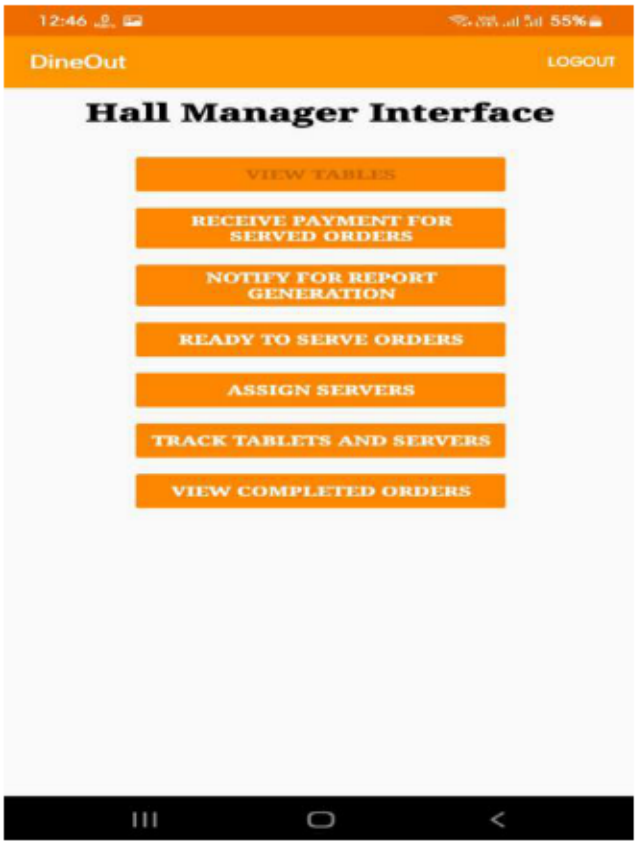
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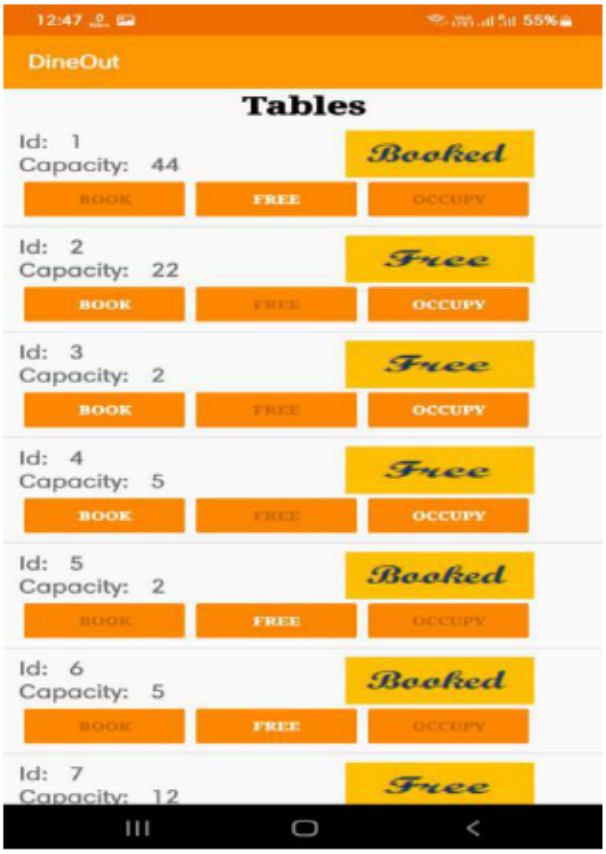
DineOut
LOGOUT
Hall Manager Interface
VIEW TABLES
RECEIVE PAYMENT FOR SERVED ORDERS
NOTIFY FOR REPORT GENERATION
READY TO SERVE ORDERS
ASSIGN SERVERS
TRACK TABLETS AND SERVERS
VIEW COMPLETED ORDERS


12:47
55%
DineOut
Tables
Id: 1
Capacity: 44
Booked
BOOK
FREE
OCCUPY
Id: 2
Capacity: 22
Free
BOOK
FREE
OCCUPY
Id: 3
Capacity: 2
Free
BOOK
FREE
OCCUPY
Id: 4
Capacity: 5
Free
BOOK
FREE
OCCUPY
Id: 5
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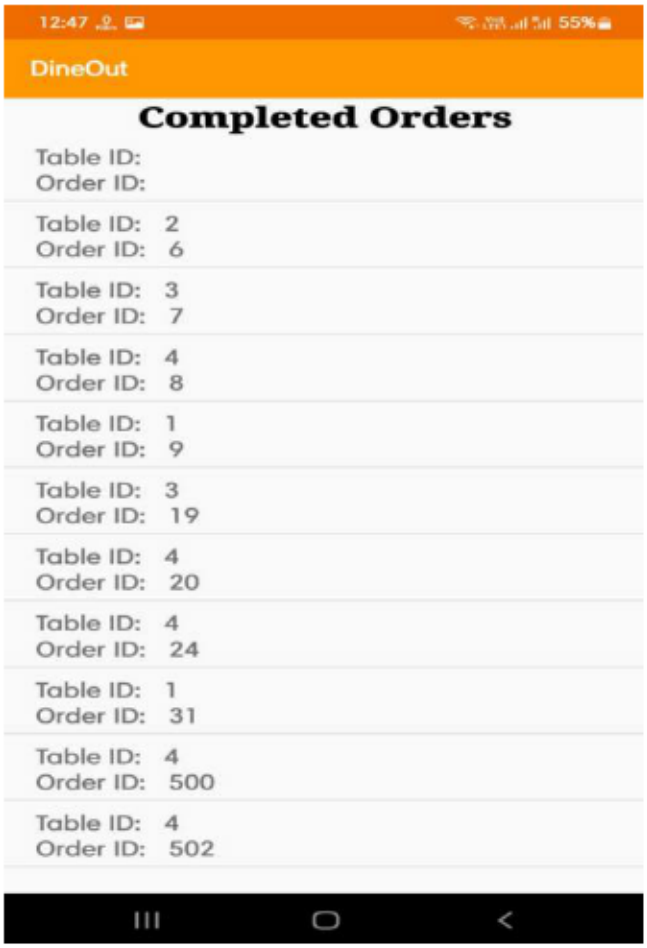
Id: 6
Capacity: 5
Booked
BOOK
FREE
OCCUPY
Id: 7
Capacity: 12
Free


12:47
55%
DineOut
Completed Orders
Table ID:
Order ID:
Table ID: 2
Order ID: 6
Table ID: 3
Order ID: 7
Table ID: 4
Order ID: 8
Table ID: 1
Order ID: 9
Table ID: 3
Order ID: 19
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Order ID: 24
Table ID: 1
Order ID: 31
Table ID: 4
Order ID: 500
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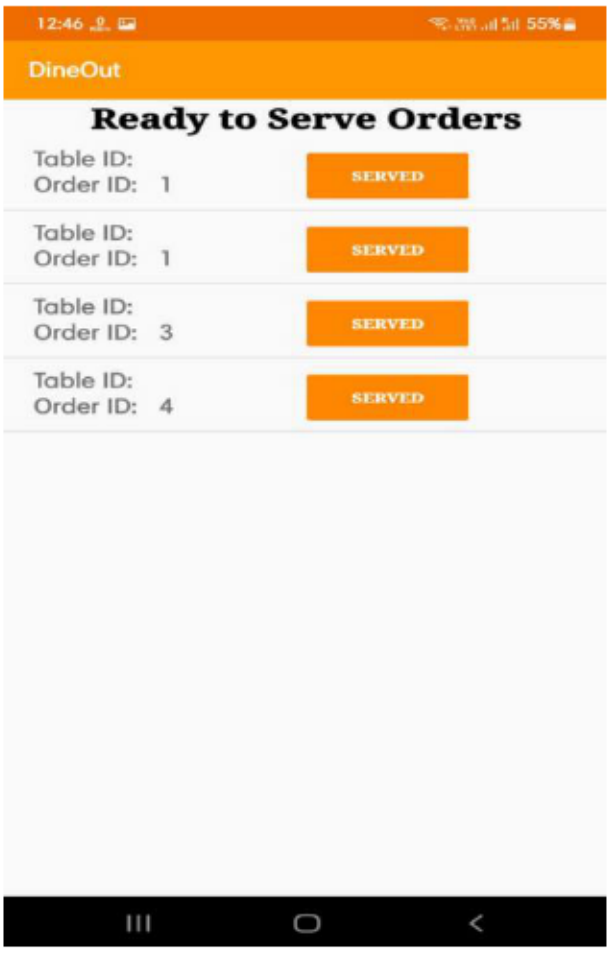
Order ID: 502


12:46
55%
DineOut
Ready to Serve Orders
Table ID:
Order ID: 1
SERVED
Table ID:
Order ID: 1
SERVED
Table ID:
Order ID: 3
SERVED
Table ID:
Order ID: 4
SERVED