

An Industry Oriented Mini Project Report

On

**FEEDBACK ANALYSIS AND ITS BENEFITS TO HOTEL
MANAGEMENT**

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

By

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Department of Computer Science and Engineering

CERTIFICATE

This is to certify that this project report entitled “**FEEDBACK ANALYSIS AND ITS BENEFITS TO HOTEL MANAGEMENT**” by **SAI CHARAN BALUSU (17WJ1A05T2)** submitted in partial fulfilment of the requirements for the degree of **Bachelor of Technology in Computer Science and Engineering** of the **Jawaharlal Nehru Technological University Hyderabad** during the academic year 2020-2021, is a bonafide record of work carried out under our guidance and supervision.

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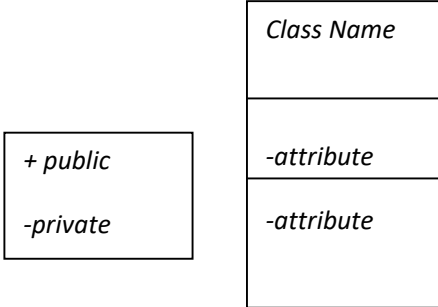
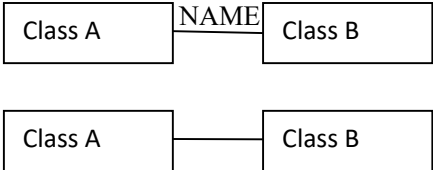
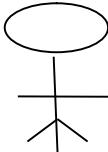
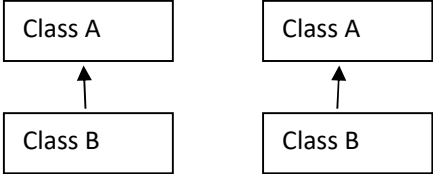
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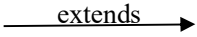

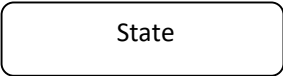
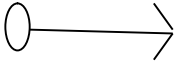
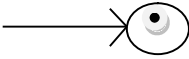
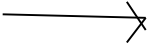
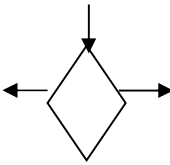
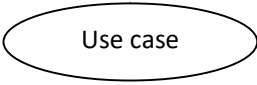
ABSTRACT

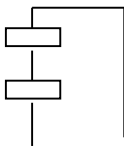
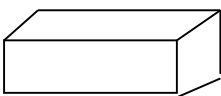
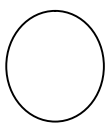
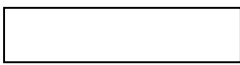
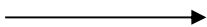
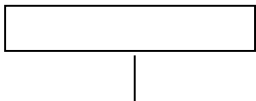
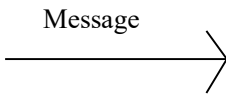
There are many aspects such as food, service, and ambience that a customer would look for when deciding on a restaurant to dine in. Among these aspects, the type of food it sells and the food quality are the most important. Therefore, when automatically rating restaurants based on customer reviews, the food aspect plays a major role. There exists some research on rating individual food items in a restaurant. However, a potential customer requires the ranking of an individual ordered food item, which ranks the particular food category.

To do that, a categorization of food names is required. Here the dataset contains reviews of the previous day or day before yesterday and based on the review it analyzes and categorizes into the ranks. Customers who are unable to choose can make an order from the suggestion given by the system which analyzed feedbacks and from the feedbacks staff can understand where the customers felt difficulty or disappointed while consuming the food.

LIST OF SYMBBOLS

S.NO	NOTATION NAME	NOTATION	DESCRIPTION
1.	Class		Represents a collection of similar entities grouped.
2.	Association		Associations represent static relationships between classes. Roles represent the way the two classes see each other.
3.	Actor		It aggregates several classes into a single class.
4.	Aggregation		Interaction between the system and external environment

5.	Relation (uses)	uses	Used for additional process communication.
6.	Relation (extends)		Extends relationship is used when one use case is similar to another use case but does a bit more.
7.	Communication		Communication between various use cases.
8.	State		State of the process.
9.	Initial State		The initial state of the object
10.	Final state		The final state of the object
11.	Control flow		Represents various control flows between the states.
12.	Decision box		Represents decision-making process from a constraint
13.	Use case		Interaction between the system and external environment.

14.	Component		Represents physical modules which are a collection of components.
15.	Node		Represents physical modules which are a collection of components.
16.	Data Process/State		A circle in DFD represents a state or process which has been triggered due to some event or action.
17.	External entity		Represents external entities such as a keyboard, sensors, etc.
18.	Transition		Represents communication that occurs between processes.
19.	Object Lifeline		Represents the vertical dimensions that the object communications.
20.	Message		Represents the message exchanged.

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CHAPTER 1

INTRODUCTION

1.1 PROBLEM STATEMENT

Feedback Analysis and its Benefits to Hotel Management is useful in the Sales domain as it will help the manager of the hotel/restaurant to know where the customers are facing the problem. There might be chances of having good feedback about the hotel from customers in few ways like preparation, delivery of food within time but sometimes they may not be satisfied with particular food item they ordered. To identify and guarantee customers that there won't be any chance of inappropriate preparation of dishes we came with this idea.

It gives daily data about customer orders, most liked recipe or dish (recommended), their feedbacks about their individual ordered items and willingness to suggest the item for other customers. It helps to understand the daily sales and also where the customers are facing problems. Visualization of sales, high-rated category of food, development areas etc. to improve the quality of the hotel.

From the data collected i.e., feedbacks, using Feedback analyzing techniques we give a graph representation through which the manager can understand where the problem is and also customers can view their food item's category by ranking display. We make the system to analyses the feedbacks based on the words or keywords we fed into the machine which is through text mining and opinion mining.

1.2 SCOPE

- This can be used in any restaurant.
- Also, can be implemented in online food delivery applications.
- Can be suitable for cafeteria ordering systems.
- As it helps to understand the quality of a restaurant. It directs the manager to tackle, solve the problems to deal with the market competition. It also helps to analyze the sales of a hotel.
- Not only in the food domain this system can be modified to use in the sales domain for a company producing-selling product, waiting for the customer's reviews about their experiences in products.

1.3 MOTIVATION

Our behavior is dictated by the desire for external rewards. If a person runs a hotel, he has to make sure that the customers are being satisfied with their food and delivery services to improve his income. He got good reviews about his hotel and food but there are times where customers feel inconvenient and disappointed by the food they received.

If it is offline service feedback is given then and there but the problem occurs when the order is made online. So, to give a clear idea about the problem faced by their customer who ordered through online we proposed this system.

1.4 LIMITATIONS OF EXISTING WORK

- The existing system in hotels/restaurants includes either manual work or some software that does not fulfil all the requirements.
- Processing application manually takes a lot of time.
- The existing system has a problem that whenever on collecting the feedbacks or gathering information about the customer's reviews, gives the overall result at the end of the day which may lead to the diversion in expected sales graph.
- An organization using conventional methods (excel sheets or register) for keeping the information about the hotel management systems as there may be various types of activities performed on dayshift and nightshifts involves a larger number of data records.
- The word manual itself makes the existing system outdated in the high-tech world.
- Coordinating staff in this respect is not only a time-consuming but also cumbersome process.
- A lot of time is also wasted in summing up records and repairing day-wise of activities that happened on the server.
- The system is not deprived of common manual mistakes.
- Data storage is not dynamic. It should not lose any customer's feedback.
- Necessary actions are to be done immediately when they find problems facing by the customers.

1.5 ADVANTAGES OF PROPOSED METHODOLOGY

- Makes the ordering process easier.
- Efficient customer and order management.
- Monitor your expenses incurred in real-time.

- Better customer data.
- Increasing depth of bottom line: When customers browse the menu without feeling rushed bylines, they tend to spend more time deciding what to order. The more time they have to look over, the more they are likely to order. You can highlight specific items on menus and run promotions to influence their purchase. Now that's profit!
- Boosts your food sales and makes the online ordering process fully automated with less manpower.
- Delicious food can be served with an online food ordering system that helps you to acquire new customers.
- Editing online menu, categories and pricing in real-time becomes easy and can be customized simply at your fingertips.
- Mobility is the key to online food ordering. Customers can order your food irrespective of the place (without waiting in the queue or waiting for the waiter to take the order).
- Yields you better returns in terms of sales, customers with better customer satisfaction – Value for money.

1.6 CHALLENGES AND GAPS IDENTIFIED FROM EXISTING WORK

RECOGNITION OF NEED:

- **Social and economic factor:** A wave of social and economic changes often follows in the wake of new technology. New opportunities may arise to improve a hotel management process or do something that was not previously possible.
- **Technological factor:** People have never before in a time when the scope of scientific inquiry was so broad, so when the speed of applying the new technology for many changes in the organization.
- **High-level decision and operating process:** In response to technological, socio-economic factors, top-level managers may decide to recognize operations and introduce new schemes.
- The existing system in hotels/restaurants includes either manual work or some software that does not fulfil all the requirements.
- The existing system has a problem that whenever on collecting the feedbacks or gathering information about the customer's reviews, gives the overall result at the end of the day which may lead to the diversion in expected sales graph.
- An organization using conventional methods (excel sheets or register) for keeping the information about the hotel management systems as there may be various types of activities performed on dayshift and nightshifts involves a larger number of data records.

- Accessibility: Make sure that the system is working properly even when integrating it onto different devices.
- Developing the ordering model inefficient way and not causing any inconvenience to customers.

1.7 Existing System:

Sentiment analysis is a process to get views of consumers from feedback or reviews of food items, ratings, service provided by the restaurant, or on other topics. Customers will decide according to the rating provided by the other customer to know what is good and what is bad to have in that particular restaurant. However, the information we get may be very subjective or person-based.

DISADVANTAGES:

- The manual process is time-consuming.
- The hotel provides paper and pen to the customers for feedback.
- The manager should calculate the reviews given by the customers.

1.8 Proposed System:

In our proposed system feedback from the customers will be collected in the form of running text and from the collected feedback our system will automatically identify all possible features and their sentiments. This system will be domain-independent as it will get trained for any domain so that it can work for all kinds of feedback analysis.

ADVANTAGES:

- No on-site presence of manager is required
- Saves customer's time
- Can lead to better sentiment analysis

CHAPTER 2

RELEVANT WORK

Many types of research in opinion mining and sentimental analysis focus on 2 ways: analysis of sentence has the level of sentiment from emotion word and a calculated score of similarity or cluster with the kind of word as positive or negative called sentiment polarity. The papers proposed and survey the classifier model to summarize sentences as positive and negative and try to apply them in other case studies.

2.1 Pre-Processing:

In pre-processing, we focused on getting various data sources to a usable format for the NER module. The feature selection is to be attributed in a classifier that will be extracted words from these customer reviews as words occurred frequently to 36 words. Stemming, language detection, and symbol removing are these pre-processing steps.

Open NLP (Natural Language Processing) toolkit breaks the reviews into sentences using punctuation characters. Then, each of these sentences is tokenized and POS (Parts of Speech) tagged. The whitespace tokenizer and the POS tagger (respectively) in the Open NLP toolkit are used for these tasks. The POS annotated tokens were then sent to the chunkier, which combines these tokens into syntactically correlated parts of words, such as noun groups and verb groups. Finally, the noun groups are checked against the food name list we have prepared, and matching noun phrases are tagged with a unique tag to identify food item names. Now this annotated corpus could be used for NER. However, sometimes the output was just a part of the actual food name. This was because the dish names of most of the restaurants are not just the standard food names included in our food list. A post-processing technique was used to eliminate this problem. This post-processing step is based on the observation that the common features (food names) come as noun phrases. So, we first picked up the noun phrases from each sentence using POS tags and checked each phrase with our NER predicted food names. This process considers noun phrases around any food item as part of that food name. If a phrase contains the predicted name, then it will be considered as a food name. It is equally possible to apply this post-processing technique while annotating the corpus.

2.2 Model Construction:

From data sets lead to model construction. The classifier models are used 2 models which are decision Tree (C4.5) and Naive Bayes to classify texts as class labels: positive or negative. Each data set is trained to model and test model that given predicted class labels follows probability trending of classifier model. The classifier models are described as bellows.

- **Decision Tree (C4.5):** The decision tree learning was proposed as a model of data classification for a class label, which is called ID3 and developed to C4.5. Also, a decision tree is represented through a tree diagram. It starts from the first node is a root node. The root node selects an attribute as words in opinion from the best value of the measurement. Each attribute has its values i.e., true/false, which are separated by branch links composed of original attributes. In the end, the data reveals a class that represents a leaf node (i.e., positive/negative). The advantage of the decision tree is for ordering attributes that are the best measurement as Eq.2.2.1.

$$I(s_1, s_2, \dots, s_n) = - \sum_{i=1}^n \frac{s_i}{s} \log_2 \frac{s_i}{s} \quad (1)$$

where n is the number of the class label, S is the number of data Si of class I.

After the distinguished information of the attribute is calculated, the entropy value is also calculated to define the summary of each branch needed to be separated from attribute A as Eq.2.2.2.

$$E(A) = \sum_{j=1}^m \frac{s_{1j} + \dots + s_{nj}}{s} I(s_{1j}, \dots, s_{2j}) \quad (2)$$

Where m is the number of Brach of attribute A.

The highest gained value of attribute A results in the best attribute to classify data set which is calculated and range between 0 and 1 by Eq.2.2.3.

$$Gain(A) = I(s_1, s_2, \dots, s_n) - E(A) \quad (3)$$

• **Naive Bayes:** Naive Bayes is an algorithm of probability based on the Bayes theorem of learning. It aims to create a model in the form of probability. The advantage of naive Bayes is an effective method that is easy to process. The probability of the classification data with prior knowledge is denoted by $P(a_i | v_j)$, where a_i refers to the attribute i and v_j refer to class label j . Therefore, the classification has been calculated for this probability. The highest probability of a_i is dependent on v_j for each class is the trend to answer of classification. The range of probability is between 0 and 1 as Eq.2.2.4.

$$V_{NB} = \arg \max P(v_j) * \prod_{i=1}^n P(a_i | v_j) \quad (4)$$

Evaluation Model: The evaluation model is used k-fold cross-validation with test data which are generated all training data. The k defines the number of grouping data. For example, k is 10-fold cross-validation of 400 training data, which means each group has 40 records and 10 groups, whereas the testing data will be groups 1 of 40 records and evaluation this groups to calculate the average of the accuracy collected until N as 10 groups as Eq.2.2.5.

$$Accuracy = \sum_{i=1}^{fold} \sum_{j=1}^{fold} \frac{\delta_{ij}}{N} \quad (5)$$

where,

$$\delta \text{ is } \begin{cases} 1 = \text{predicted class label is correct} \\ 0 = \text{predicted class label is incorrect} \end{cases}$$

Also, the results are evaluated by rating, the root means the square error is used in this case. The comparison results are generated rating with classifier model and rating from actual customer review as Eq.2.2.6.

$$RMSE = \sqrt{\frac{1}{N} \sum_{i=1}^n (P_i - O_i)^2} \quad (6)$$

where P_i is the prediction from the probability value of the classifier model. O_i is an actual score from the customer review.

Accuracy:

The results are compared the percentage of accuracy between the decision tree model (C4.5) and naive Bayes and difference the number of features is extracted as 10, 20 and 36 words respectively. The accuracy of naive Bayes is given values that are higher than the decision

tree of all of the data sets. Moreover, the highest accuracy value is 94.37% with 20 words and also an average of naive Bayes is higher than the decision tree to 93.61% in the below Table.

Attributes	Correctly Classifier (%Accuracy)	
	<i>Decision Tree(C4.5)</i>	<i>Naïve Bayes</i>
10 words	92.58	92.33
20 words	93.61	94.37
36 words	92.33	94.12
Average	92.84	93.61

Fig 2.2.1: Accuracy of the classifier model.

2.3 Sentiment Analysis:

In our system, we are rating individual food items; therefore, sentiment extraction is done at the entity level. Sentences may contain several subjects with different opinions. Stanford typed dependency representation is used to find the opinion associated with each food item in a sentence, and to create phrases that contain only one subject. Many researchers have mentioned that opinion with the phrase. Finally, a sentiment score for the complete opinion phrase can be obtained.

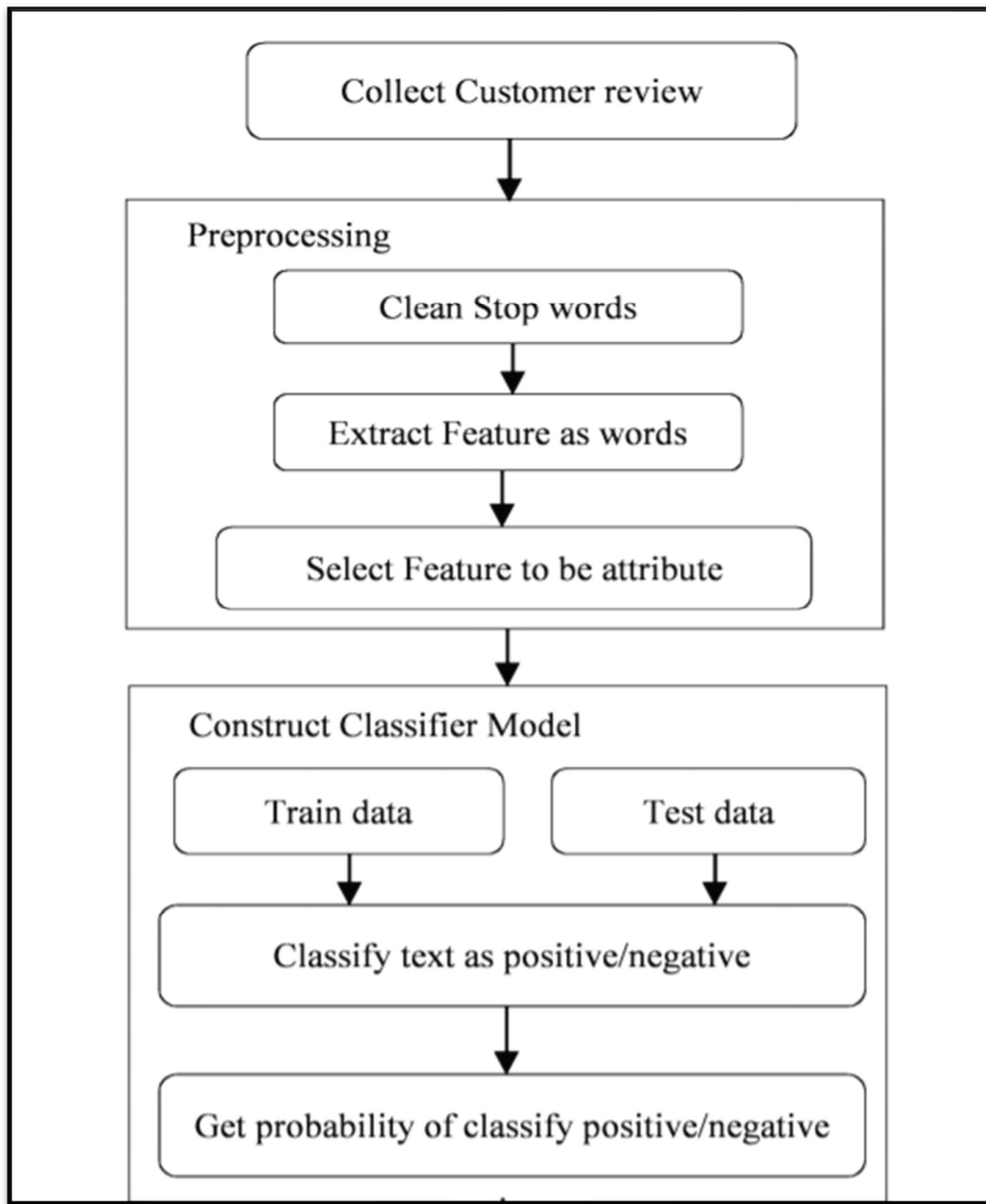


Fig 2.1: Methodology for generating the probability of positivity and negativity using opinion mining.

CHAPTER 3

SYSTEM ARCHITECTURE

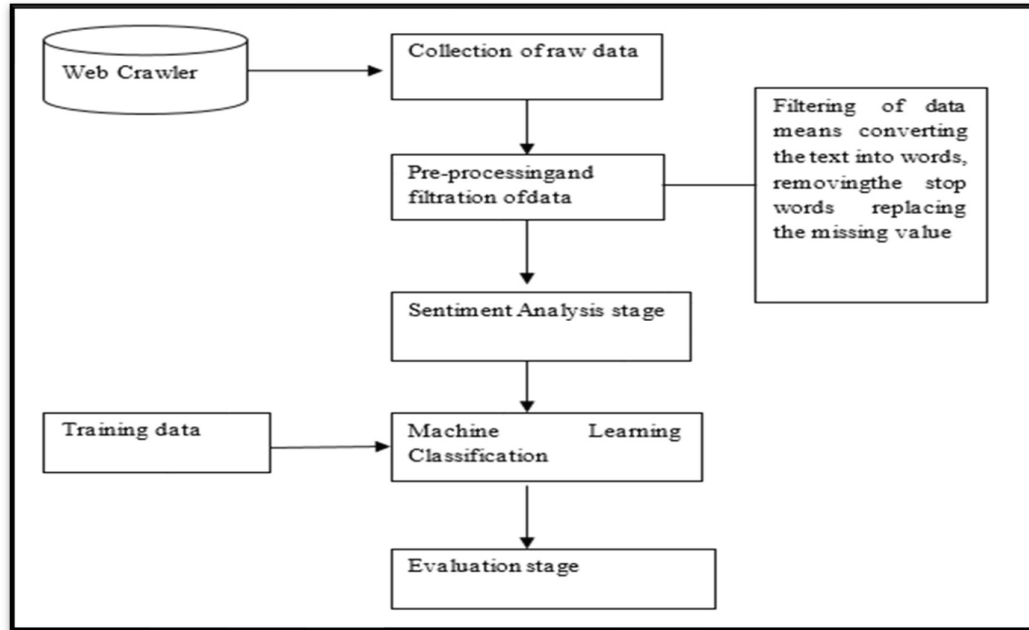


Fig 3.1: Block diagram of the proposed system.

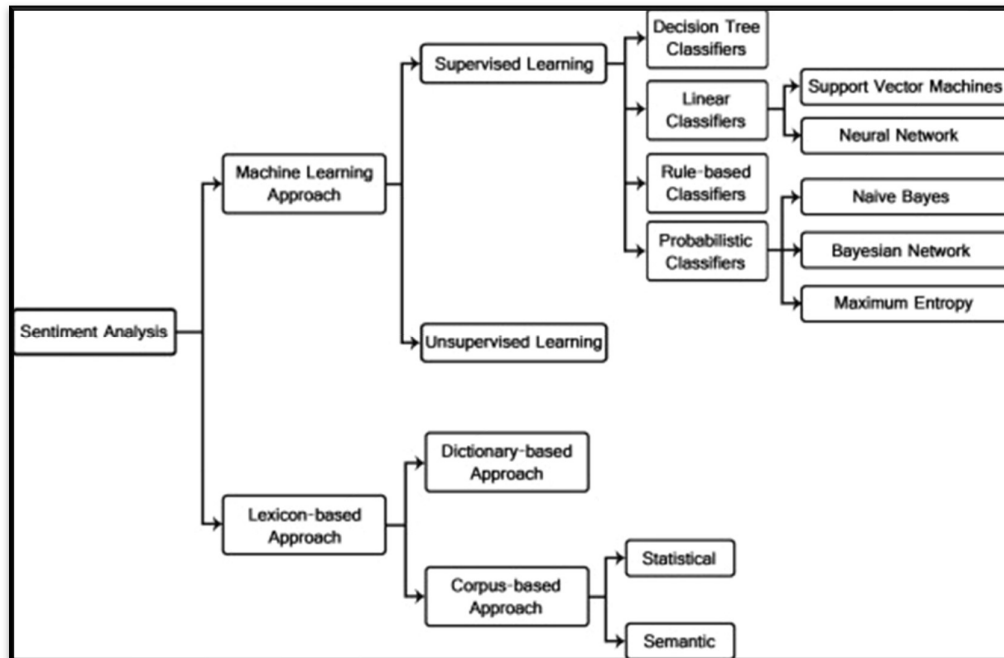


Fig 3.2: Sentiment Analysis and how it is being implemented using different algorithms.

CHAPTER 4

SOFTWARE REQUIREMENT SPECIFICATIONS

SOFTWARE REQUIREMENTS:

- FRONT END : HTML DJANGO
- BACK END : MY SQL 5.5
- OPERATING SYSTEM : WINDOWS 10
- IDE : PYCHARM

HARDWARE REQUIREMENTS:

- PROCESSOR : PENTIUM IV 2.6 GHz, Intel Core 2 Duo.
- RAM : 4GB DD RAM
- MONITOR : 15” LCD, LED MONITOR
- HARD DISK : 40 GB

4.1 FUNCTIONAL REQUIREMENTS:

- When the customer creates an account and after logging into the application it displays the actions that are to be done by the customer.
- After the customer makes an order, he can wait for 15-20 min and the food will be served.
- In the end, the customer is requested to provide feedback.

4.2 NON-FUNCTIONAL REQUIREMENTS:

- As soon as the customer makes an order, the order has to be displayed on the manager’s Order page. He can view the list of orders. In the queue format, the orders will be delivered. He as to make sure that the delivery of the orders must not be delayed more than 15-20 min.
- Whenever there is negative feedback or where the customer is not satisfied either in food or service, the alert message displays the feedback. This message is automatically reloaded every 15 seconds on the manager’s homepage.

CHAPTER 5

SOFTWARE DESIGN DOCUMENT (UML DIAGRAMS)

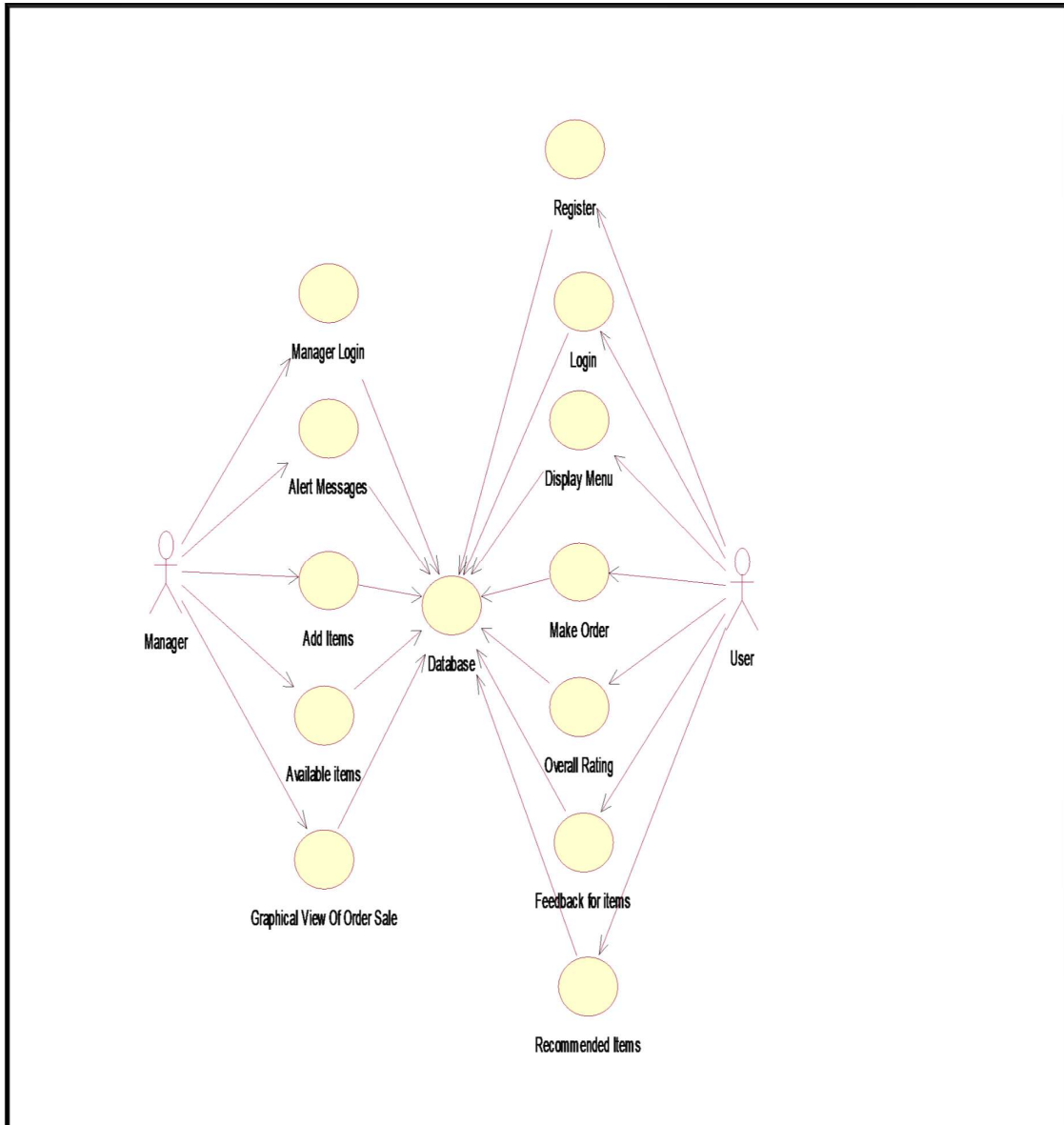


Fig 5.1: Use case diagram for Hotel Management System

Explanation:

The main purpose of a use case diagram is to show what system functions are performed for which actor. The roles of the actors in the system can be depicted. The above diagram consists of the user as an actor. Each will play a certain role to achieve the concept.

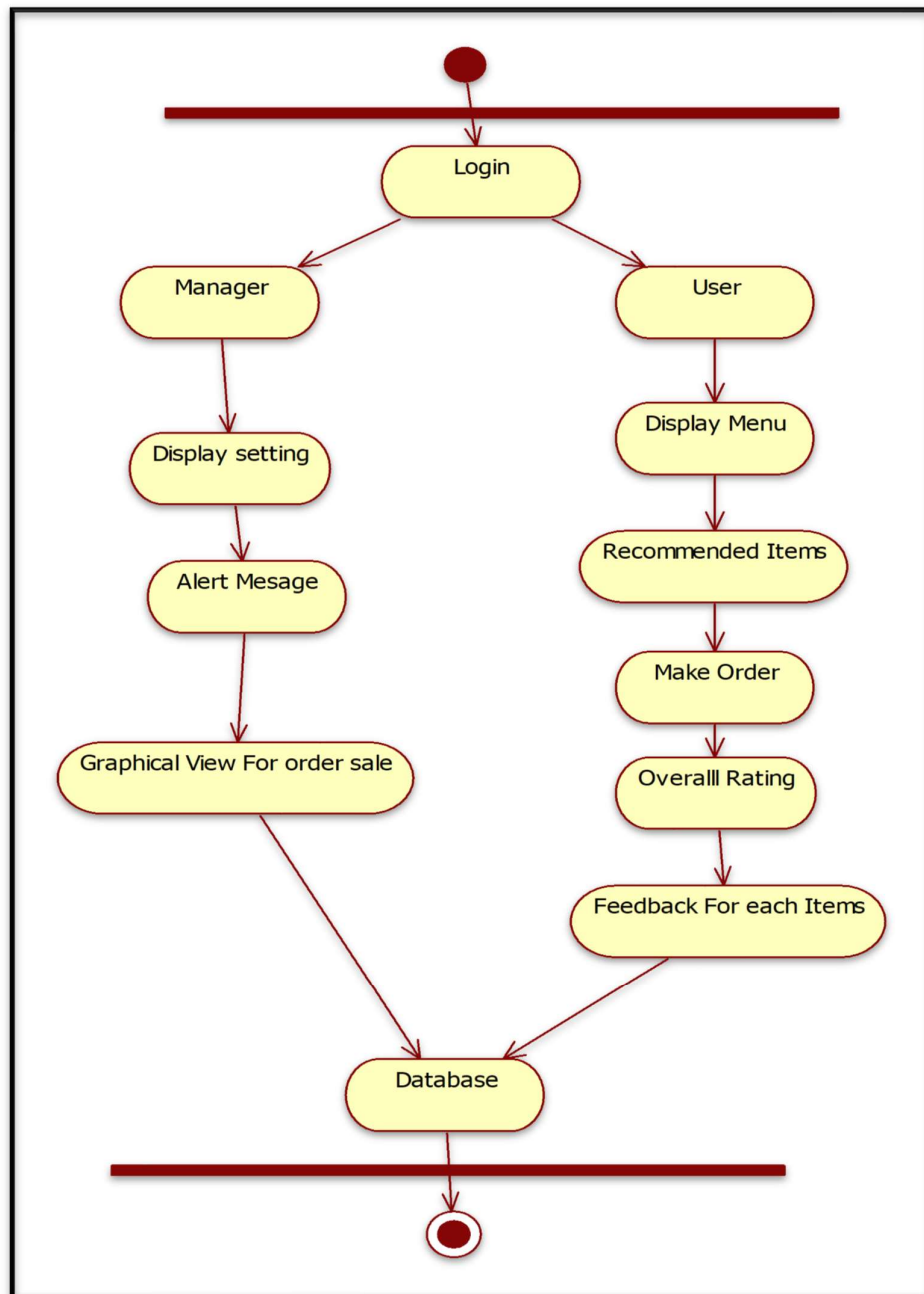


Fig 5.2: Activity Diagram for Hotel Management System

Explanation:

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control.

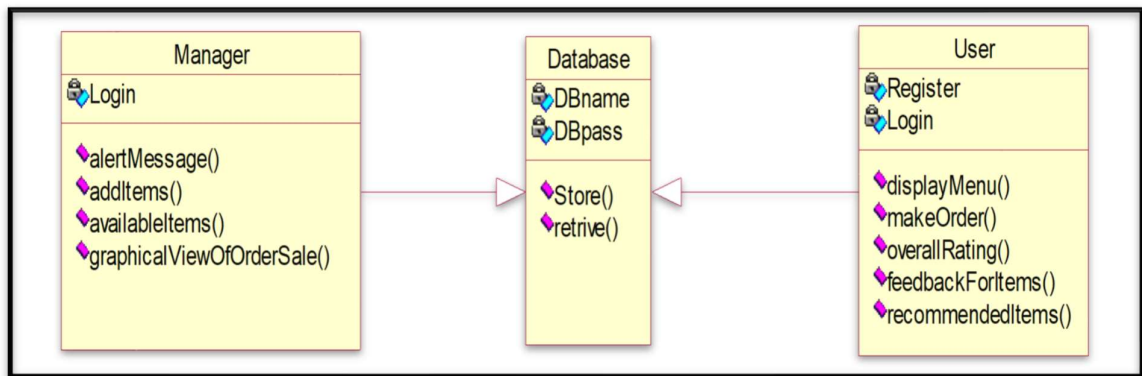


Fig 5.3: Class Diagram for Hotel Management System

Explanation:

This class diagram represents how the classes with attributes and methods are linked together to perform the verification with security. The above diagram shown the various classes involved in our project.

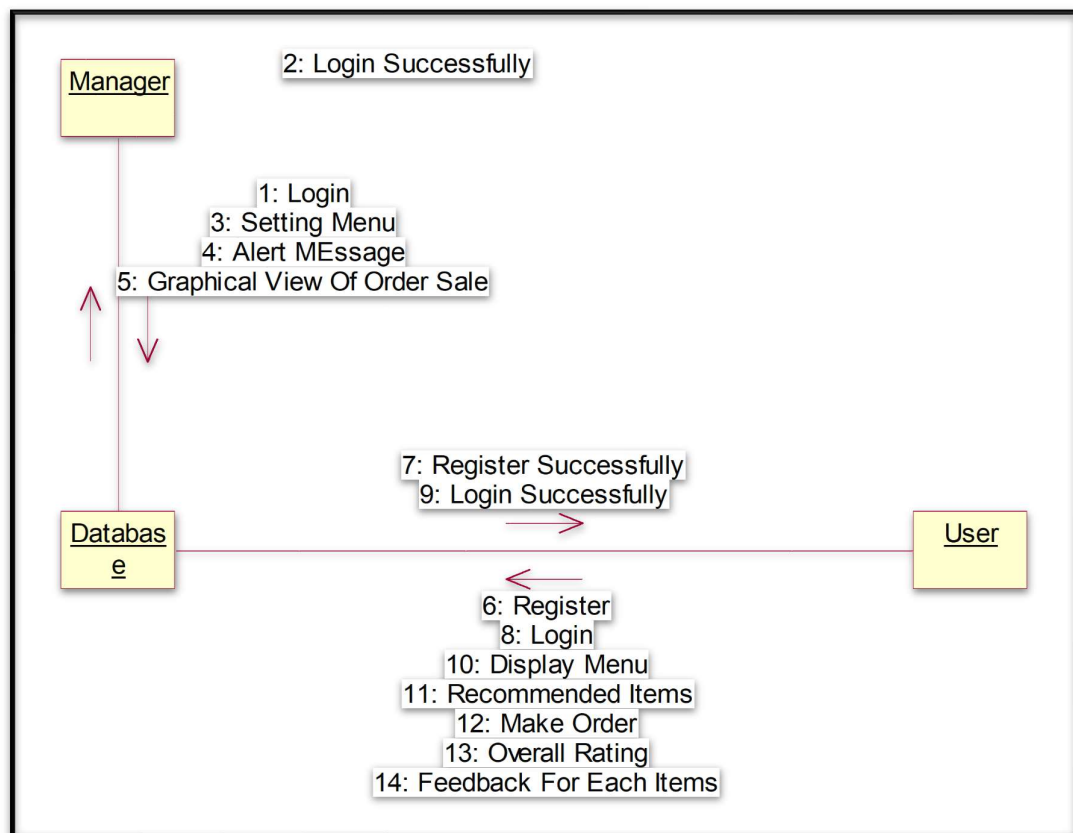


Fig 5.4: Collaboration Diagram for Hotel Management System

Explanation:

Collaboration diagram is an illustration of the relationships and interactions among software objects in UML.

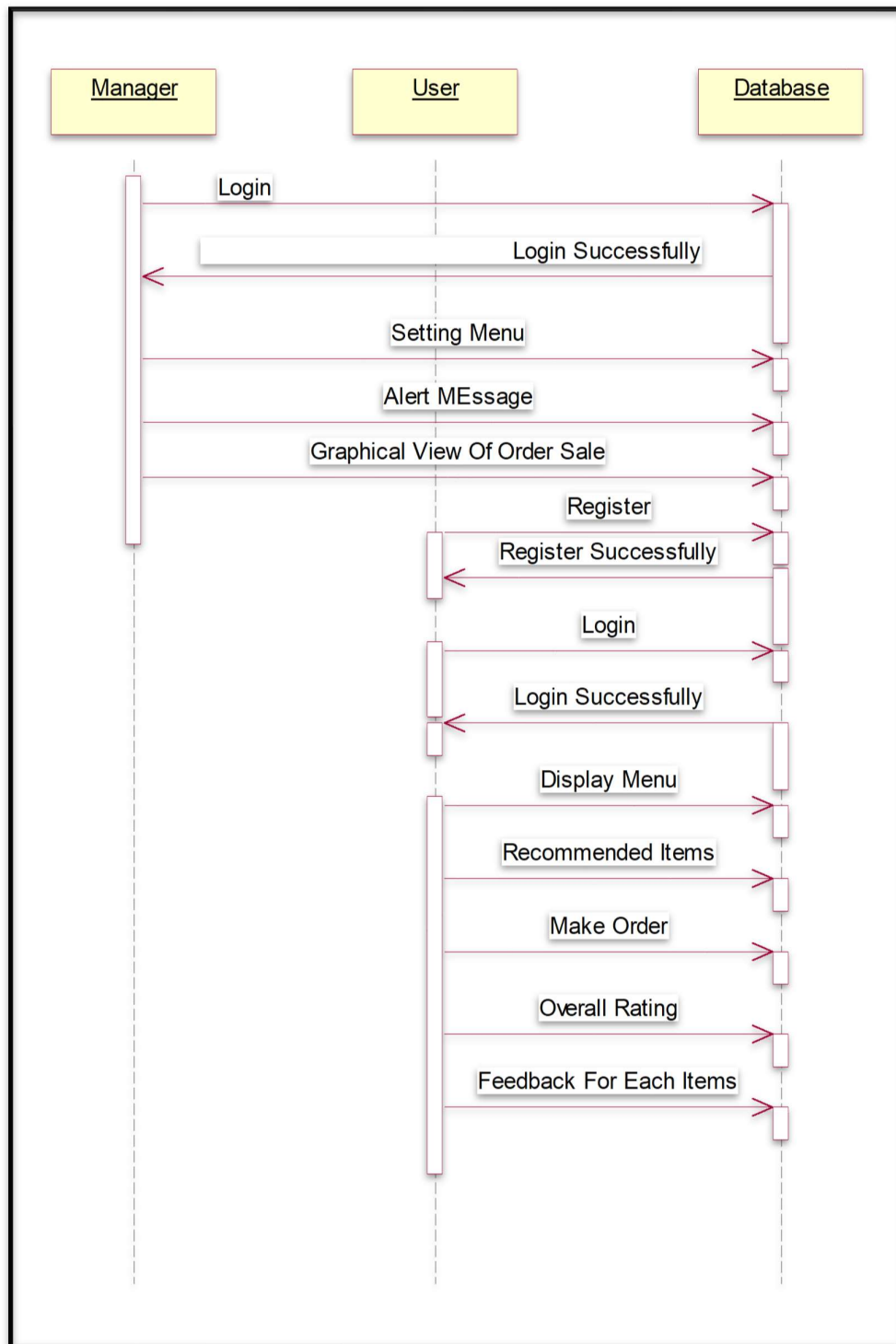


Fig 5.5: Sequence Diagram for Hotel Management System

Explanation:

A sequence diagram simply depicts the interaction between objects in sequential order i.e., the order in which these interactions take place. We can also use the terms event diagrams or event scenarios to refer to a sequence diagram.

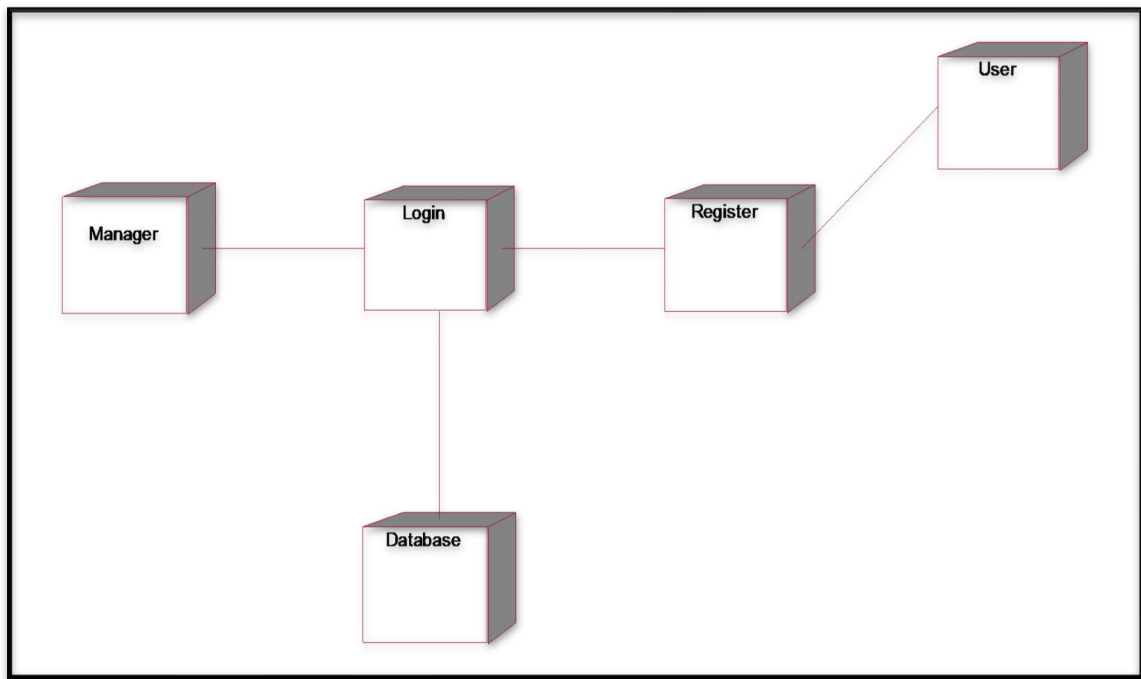


Fig 5.6: Deployment Diagram for Hotel Management System

Explanation:

A deployment diagram in UML models the physical deployment of artifacts on nodes, such as hardware and software components.

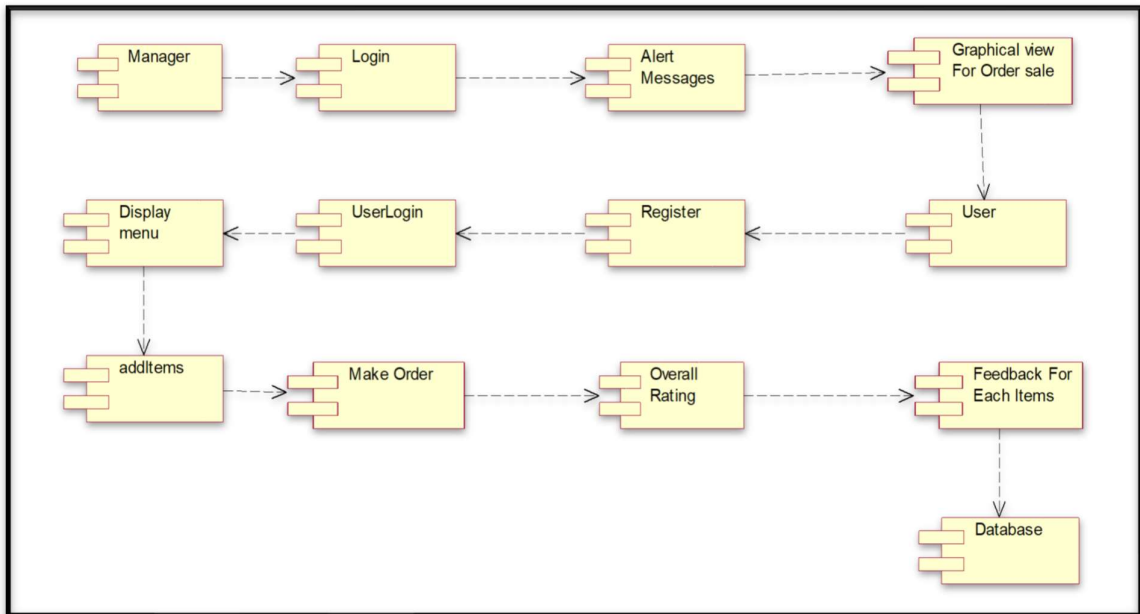


Fig 5.7: Component Diagram for Hotel Management System

Explanation:

In the Unified Modeling Language, a component diagram depicts how components are wired together to form larger components and or software systems. They are used to illustrate the structure of arbitrarily complex systems.

CHAPTER 6

APPENDICES

6.1 urls.py

```
from django.contrib import admin
from django.urls import path
from myapp.views import home, log, reg, login, logout, reg1, alog, manager, index, mhome,
ofeed, morders, arec, ushome, \
umenu, uorder, arecipe, order, serve, ufeed, frev, srev, uover, urate
urlpatterns = {
    path('admin/', admin.site.urls),
    path("", home, name='home'),
    path('index/', index, name='index'),
    path('log/', log, name='log'),
    path('reg/', reg, name='reg'),
    path('login/', login, name='login'),
    path('reg1/', reg1, name='reg1'),
    path('logout/', logout, name='logout'),
    path('alog/', alog, name='alog'),
    path('manager/', manager, name='manager'),
    path('mhome/', mhome, name='mhome'),
    path('ofeed/', ofeed, name='ofeed'),
    path('morders/', morders, name='morders'),
    path('arec/', arec, name='arec'),
    path('ushome/', ushome, name='ushome'),
    path('umenu/', umenu, name='umenu'),
    path('uorder/', uorder, name='uorder'),
    path('arecipe/', arecipe, name='arecipe'),
    path('order/', order, name='order'),
    path('serve/', serve, name='serve'),
    path('ufeed/', ufeed, name='ufeed'),
    path('frev/', frev, name='frev'),
    path('srev/', srev, name='srev'),
    path('uover/', uover, name='uover'),
    path('urate/', urate, name='urate'),
}
```

6.2 views.py

```
import datetime
from matplotlib import pyplot as plt
from django.shortcuts import render
import progressbar
from textblob import TextBlob
from myapp.forms import LoginForm
```

```

def home(request):
    return render(request, 'index.html')

def index(request):
    return render(request, 'index.html')

def reg(request):
    return render(request, 'home.html')

def log(request):
    return render(request, 'login.html')

def logout(request):
    return render(request, 'index.html')

def login(request):
    con = connections['mysql']
    mycursor = con.cursor()
    uname = request.POST['uid']
    pwd = request.POST['pwd']
    val= (uname, pwd)
    mycursor.execute("select * from user where email='" + uname + "' and password='" + pwd +
    """)
    myresult = mycursor.fetchall()
    i = 0
    for x in myresult:
        i += 1
    if i>0:
        request.session['uid'] = uname
        return render(request, 'uhome.html', {'uid': uname})
    else:
        return render(request, 'login.html')

def reg1(request):
    con = connections['mysql']
    mycursor = con.cursor()
    name = request.POST['name']
    uname = request.POST['uname']
    pwd = request.POST['password']
    mob = request.POST['mob']
    loc = request.POST['loc']
    gen = request.POST['gen']
    val = (name, uname, pwd, mob, gen, loc)
    mycursor.execute("insert into user values(%s,%s,%s,%s,%s,%s)", val)
    myresult= mycursor.execute
    con.commit()
    messages.success(request, 'User Registered successfully!', extra_tags='alert')
    return render(request, 'login.html')

def manager(request):
    name = request.POST.get('uid')
    pwd = request.POST.get('pwd')

```

```

if name == 'manager' and pwd == 'manager':
    dt = datetime.datetime.now()
    d = str(dt.day) + "/" + str(dt.month) + "/" + str(dt.year)
    con = connections['mysql']
    mycursor = con.cursor()
    mycursor.execute("select userid,sreview from review where date1='" + d + "'")
    myresult = mycursor.fetchall()
    l = ""
    for min myresult:
        x = m
    for s in m:
        l = s
        analysis = TextBlob(l)

```

6.3 mhome.html

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Feedback Analysis for Restaurant</title>
{% load static %}
<meta charset="utf-8" />
<meta name="viewport" content="width=device-width, initial-scale=1" />
<link rel="stylesheet" type="text/css" href={% static 'assets/css/main.css'%}/>
<link rel="stylesheet" type="text/css" href={% static 'assets/css/font-awesome.min.css'%}/>
<script type = "text/JavaScript">
<!--
function AutoRefresh( t ) {
setTimeout("location.reload(true);", t);
}
//-->
</script>
</head>
<body onload = "JavaScript:AutoRefresh(45000);">
<header id="header" class="alt">
<div class="logo"><a href="/mhome/">Feedback Analysis for Restaurant</a></div>
<a href="#menu">Menu</a>
</header>
<nav id="menu">
<ul class="links">
<li><a href="/mhome/">Home</a></li>
<li><a href="/arec/">Add Recipe</a></li>
<li><a href="/morders/">Orders</a></li>
<li><a href="/ofeed/">Feedback</a></li>
<li><a href="/logout/">Logout</a></li>

```

```

</ul>
</nav>
<section class="banner full">
<article>
<imgsrc="{% static 'slide04.jpg' %}" alt="" />
<div class="inner">
<header>
<h2 style="font-size: 40px;">Welcome to Manager</h2>
</header>
<marquee width="80%" direction="right" height="150px" >
<h1 style="font-size: 30px;"> {% for r in result.items%} {{ r.0 }} : {{ r.1 }} {% endfor%}
</h1>
</marquee>
</div>
</article>
</section>
<script src="{% static 'assets/js/jquery.min.js'%}"></script>
<script src="{% static 'assets/js/jquery.scrollex.min.js' %}"></script>
<script src="{% static 'assets/js/skel.min.js' %}"></script>
<script src="{% static 'assets/js/util.js' %}"></script>
<script src="{% static 'assets/js/main.js' %}"></script>
</body>
</html>

```

CHAPTER 7

EXPERIMENTS AND RESULTS

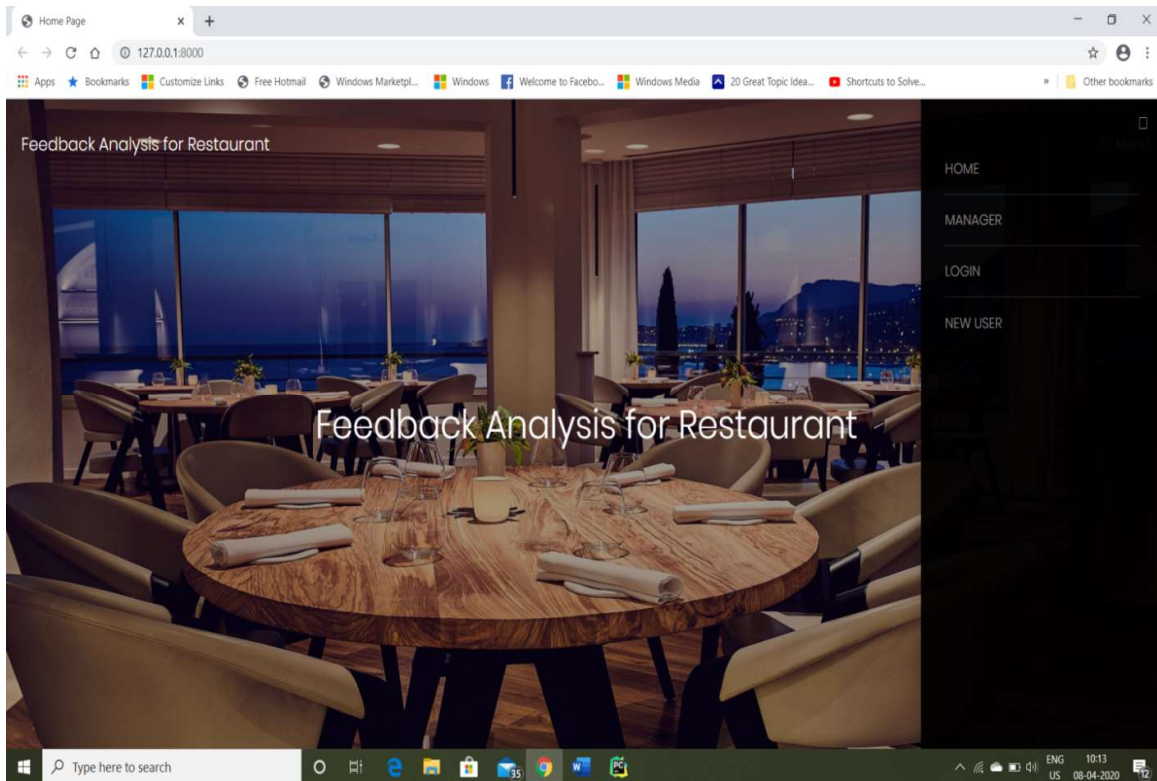


Fig 7.1: Homepage of our application

- Displaying Home, Manager (login to the manager), Login (for the regular customer's one-time registration is enough. Regular customers can log in directly), New User (new customers have to register).

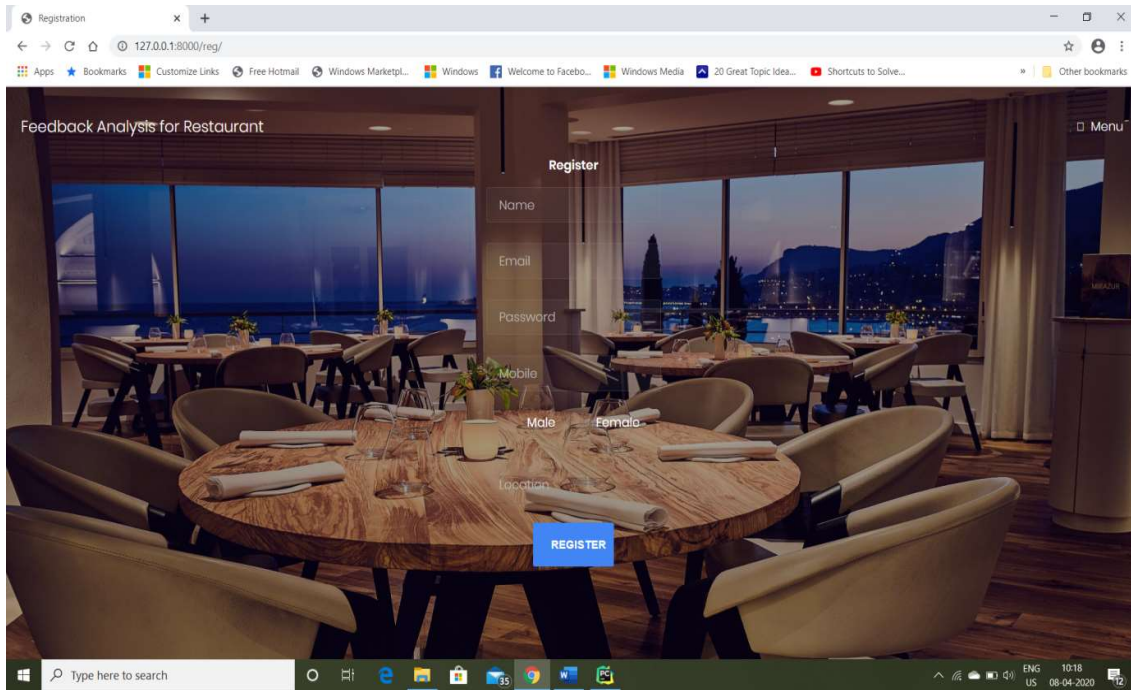


Fig 7.2: Registration page for a new user.

- The registration page will appear where the customer will register by using the name, email, password and mobile number. After registration, it will direct you to the login page.

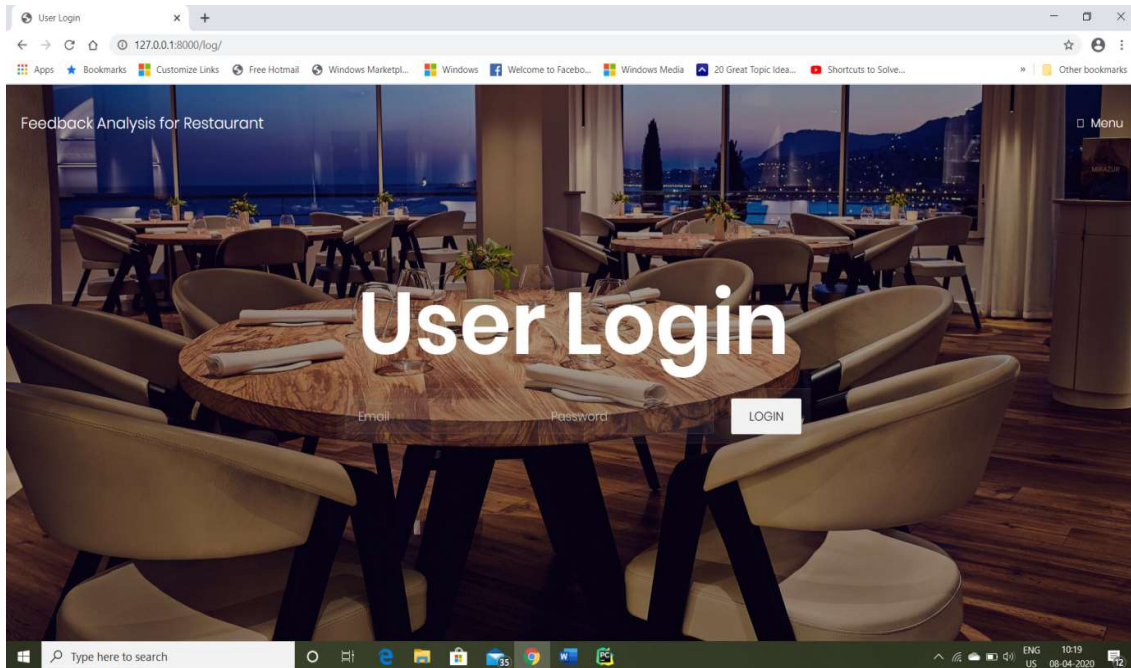


Fig 7.3: Login page for users.

- After registration user will log in via its mail id and password. After typing mail id and password it will take you to the next page i.e the welcome page of the hotel where you will be seeing the menu, home, order and logout options.

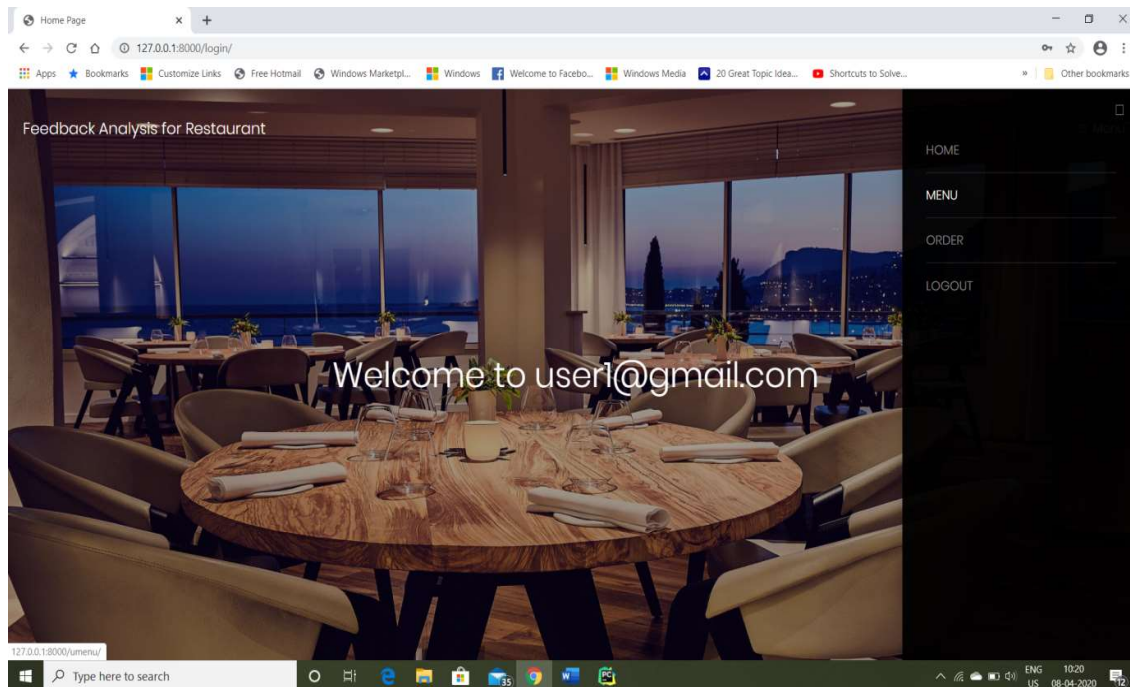


Fig 7.4: User's home page and displaying the options for the user to proceed.

- On the user page, the user can order any food items from the given menu and give reviews according to the rating of that particular food item.

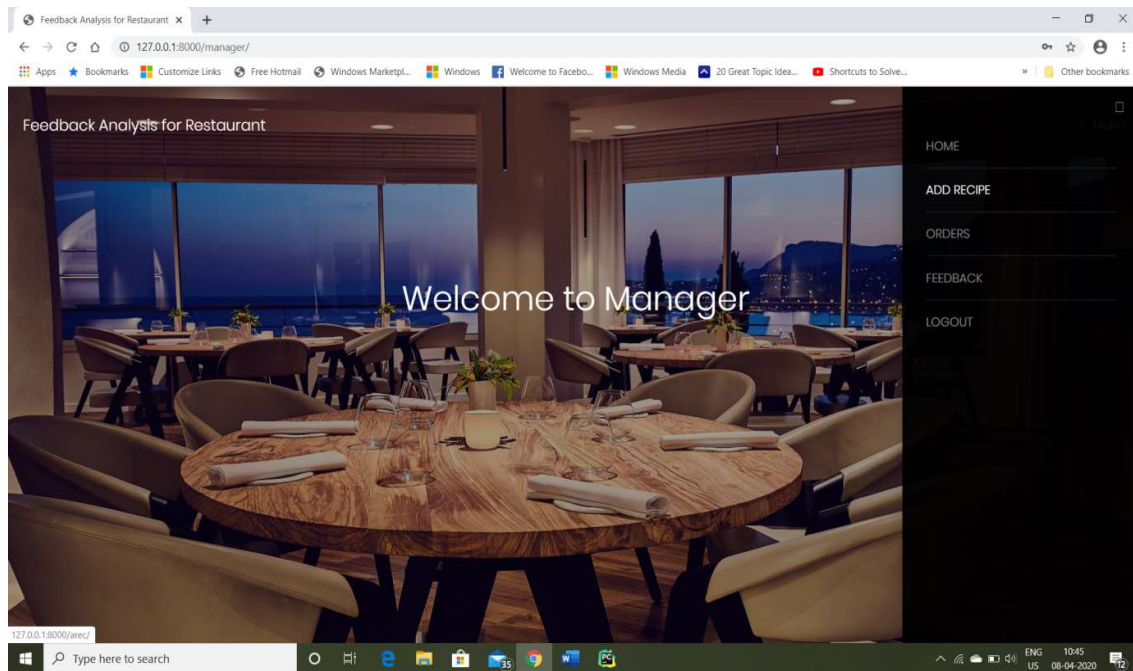


Fig 7.5: Manager's home page with options.

- On the manager home page, you will have the following option like home page, add a recipe, you can check the food ordered by the customer and also you can see the feedback of the customer.

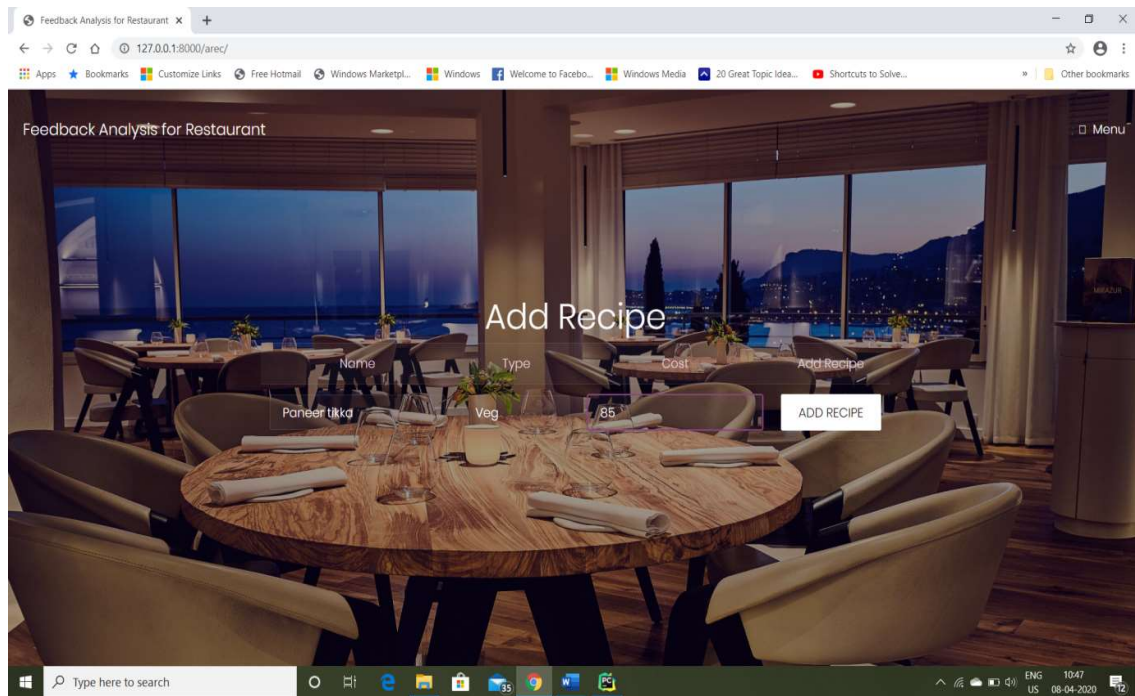


Fig 7.6: Manager who can add recipe name to the menu.

- On this page you can manager can add items in the menu according to the rating which is on the top of the list according to which customer will order the food.

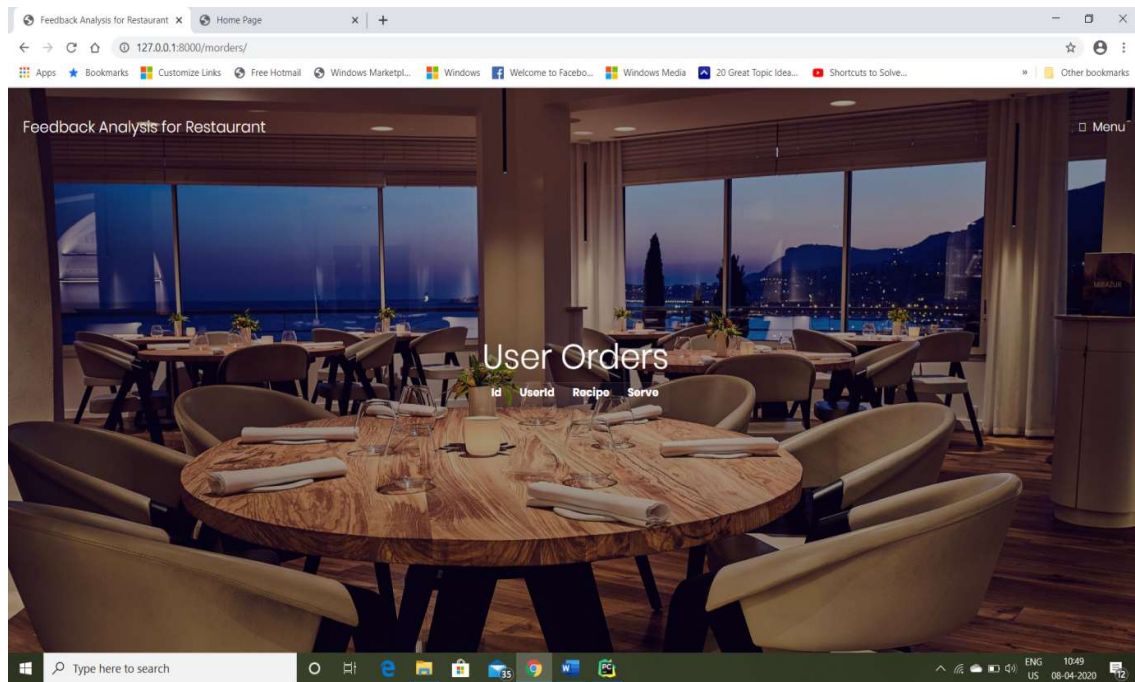


Fig 7.7: Manager who can view the list of orders that are to be served.

- Here the manager can see the list of ordered items that are to be served to the customer and also tells which item is not served or pending.

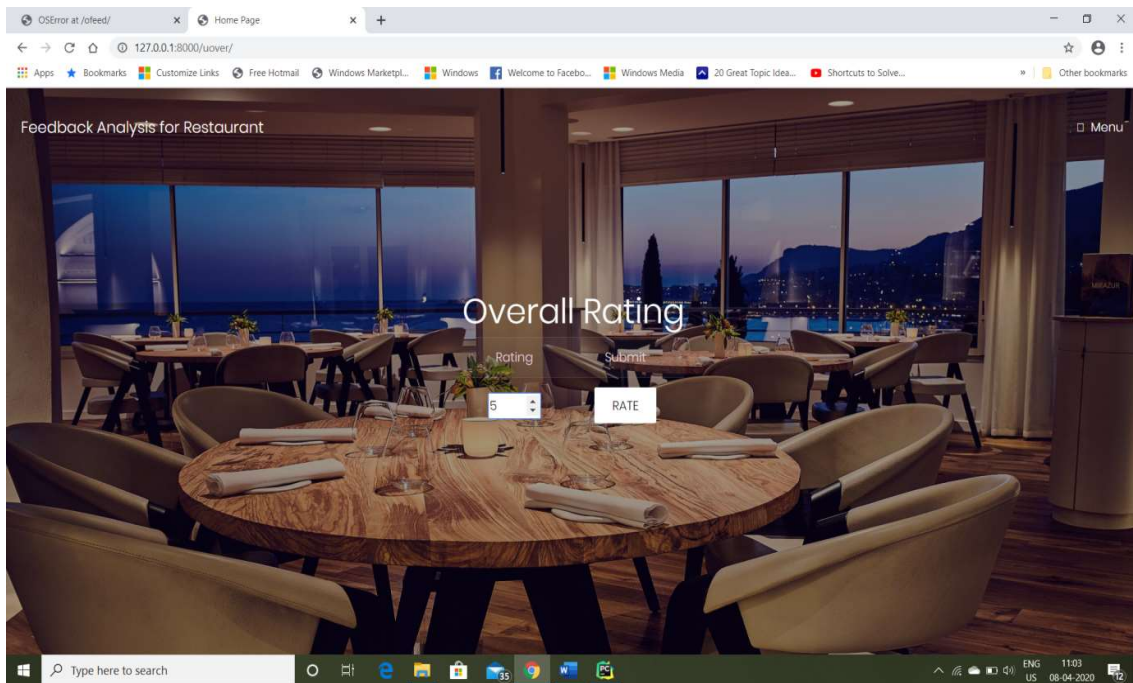


Fig 7.8: Overall rating required by the customer about the food and service.

- On this page, you can see the rating giving by the customer. Depending upon it the item customer gives the rating about the food and service provided by the restaurant.

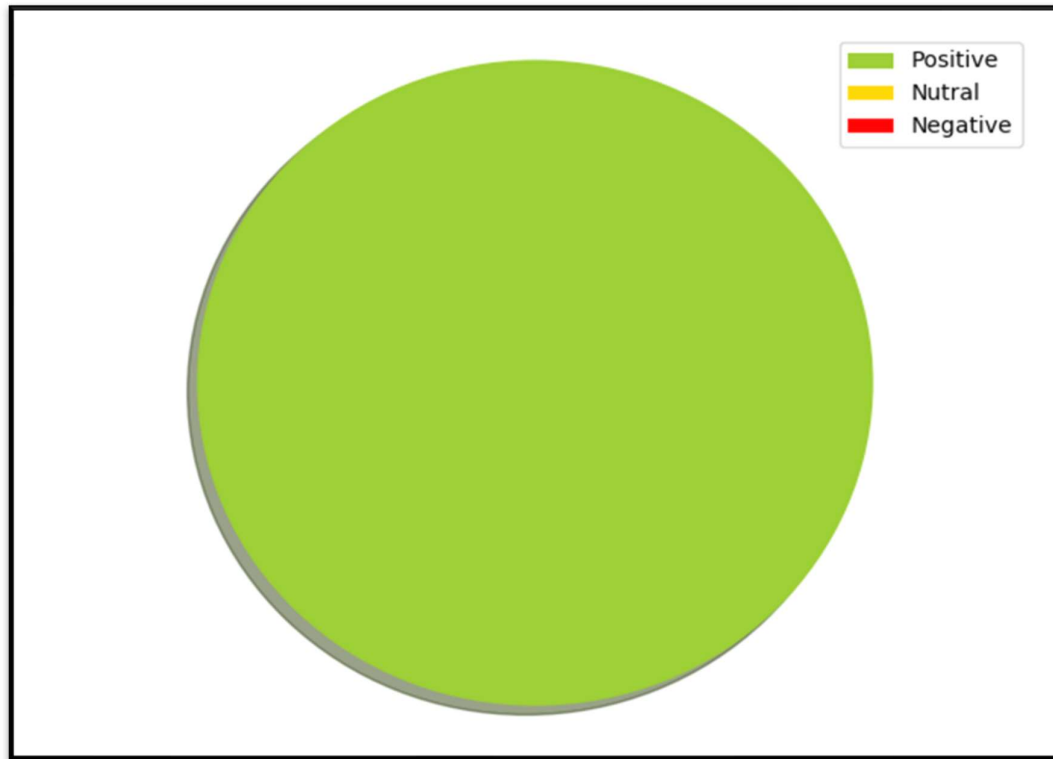


Fig 7.9: Daily status that shows the customers' satisfaction in service and food.

- The above figure describes the overall rating as neutral, positive, or negative of the reviews given by the customers in the form of a pie chart. Pie chart is the best way to represent the customers' satisfaction in service and food.

CHAPTER 8

SOFTWARE TESTING

8.1 GENERAL

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product. It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail unacceptably. There are various types of tests. Each test type addresses a specific testing requirement.

8.2 DEVELOPING METHODOLOGIES

The test process is initiated by developing a comprehensive plan to test the general functionality and special features on a variety of platform combinations. Strict quality control procedures are used. The process verifies that the application meets the requirements specified in the system requirements document and is bug-free. The following are the considerations used to develop the framework from developing the testing methodologies.

8.3 TYPES OF TESTS

8.3.1 Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program input produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application. It is done after the completion of an individual unit before integration. This is structural testing, that relies on knowledge of its construction and is invasive.

Unit tests perform basic tests at the component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

8.3.2 Functional test

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input: identified classes of valid input must be accepted.

Invalid Input: identified classes of invalid input must be rejected.

Functions: identified functions must be exercised.

Output: identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked.

8.3.3 System Test

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration-oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

8.3.4 Performance Test

The Performance test ensures that the output is produced within the time limits, and the time is taken by the system for compiling, giving response to the users and request being sent to the system to retrieve the results.

8.3.5 Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g., components in a software system or – one step up – software applications at the company level – interact without error.

8.3.6 Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end-user. It also ensures that the system meets the functional requirements.

Acceptance testing for Data Synchronization:

- The Acknowledgements will be received by the Sender Node after the Packets are received by the Destination Node.
- The Route adds operation is done only when there is a Route request in need.
- The Status of Nodes information is done automatically in the Cache Updating process.

8.3.7 Build the test plan

Any project can be divided into units that can be further performed for detailed processing. Then a testing strategy for each of these units is carried out.

Unit testing helps to identify the possible bugs in the individual component, so the component that has bugs can be identified and can be rectified from errors.

CHAPTER 9

FUTURE ENHANCEMENT

Hotel Management is an area of study that covers a wide range of topics concerned with the operational aspects of hoteliers. Educational courses in hotel management are varied and cover topics as wide-ranging as marketing, eco-tourism, leisure, business administration, and management.

The people in this industry are confident, approachable and adventurous. They aren't afraid to try new things and are excited to experience new cultures. Teamwork is the most important aspect. It is an evolving industry and has great demand all across the globe.

Sentiment analysis feature in Performance management software can provide qualitative data through analyzing the text contents of continuous check-ins, performance review feedback, open-ended survey answers, etc. The quantitative data that HR gets has limitations in providing insights. It cannot help HR figure out, what is affecting the organization and the reason for the lower productivity of the workforce. The quantitative data can also be misleading as it cannot communicate the concerns and sentiments of the team members clearly to the top management.

CHAPTER 10

CONCLUSIONS

- This application focuses on the feedbacks collected from the customers online.
- An organization does not use conventional methods (excel sheets or register) for storing the information about the hotel management systems as there may be various types of activities performed on dayshift and nightshifts involves a larger number of data records.
- Updating the list of items in the menu is easier.
- It does not cause any inconvenience to the customers and also to staff. There will no hectic burden for the waiters when the restaurant is full as the customer himself makes an order.
- The word manual is updated to the automated management system.
- Coordinating staff in this respect will be easier.
- A lot of time is saved in summing up records and repairing day-wise of activities that happen on the server.
- Efficient customer and order management.
- Monitor your expenses incurred in real-time.
- Better customer data.
- Boosts your food sales and makes the online ordering process fully automated with less manpower.
- Delicious and quality food can be served with an online food ordering system that helps you to acquire new customers.
- Increasing depth of bottom line: When customers browse the menu without feeling rushed bylines, they tend to spend more time deciding what to order. The more time they have to look over, the more they are likely to order. You can highlight specific items on menus and run promotions to influence their purchase. Now that's profit!
- Yields you better returns in terms of sales, customers with better customer satisfaction – Value for money.

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