**Kingdom of Saudi Arabia**
**Majmaah University**
**Ministry of Higher Education**
**College of Science in Zolfi**
**Dept. of Computer Science**

المملكة العربية السعودية
جامعة المجمعة
وزارة التعليم العالي
كلية العلوم في الزلفي
قسم علوم الحاسب

**MAJMAAH UNIVERSITY**
**COLLEGE OF SCIENCE & COMPUTER SCIENCE**

# Restaurants Evaluation Android App

**BY**

**Noah AL-shatri & Waleed AL-anazi**

**341101047 & 351106319**

**Supervised by:**

DR.Mahdi Jemmali

**A REPORT SUBMITTED TO**
**UNIVERSITY OF MAJAMAAH**
**In partial fulfillment of the requirements**
**For the degree of**
**BACHELOR OF COMPUTER AND INFORMATION SCIENCE**

1440-1441 AH

## Abstract

Restaurants in our world today receive a lot of attention as there is no time for a person to make his food at home, as in the past. Therefore, there is an increasing demand for restaurant applications and attention to other services related to it, for example, the evaluation process by municipal officials and users.

Therefore, we decided to implement the application of his idea based on the evaluation process for restaurants by the municipality employees who perform a comprehensive evaluation of the restaurant in many aspects, namely hygiene, quality of foods, customer service, speed of implementation of requests, prices, and other evaluations that are of primary concern to the user who decides which restaurant he goes through Be informed of this application, which nominates the best restaurants to go to according to the highest reviews, which of course changes monthly and possibly daily. [6]

## Acknowledgement

Thanks for all, thanks for all staff in college, special thanks for our supervisor. When we need help always we find the person standing by our side, and give us all information and guidance to achieve this project, this person is our supervisor.

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**DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION**

# (CERTIFICATE BY STUDENT)

This is to certify that the project titled "Title of the project" submitted by me (Name of the student, Student ID) under the supervision of Dr. Name for award of Bachelor degree of the Majmaah University carried out during the Semester 1, 2020-2021 embodies my original work.

Signature in full: ----------

Name in block letters:

Student ID: 341101047 & 351106319

Date:

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# CHAPTER 1: INTRODUCTION

## 1.1 Problem Definition

Many restaurants is storing all of their data in manual way. They have huge number of customers daily. So because large number of customers, they need the help of some features so they can maintain and stores the records accurately. For managers it is difficult to view the tables, orders.

They need full-fledged software to maintain their day to day transactions, orders and also regular update on records, cash transaction, customers feedbacks etc. In the existing system, entering all the details are done manually, it is taking lots of time and also there are chances for mistakes.

## 1.2 Goals

The main goal is to evaluate the restaurant's functions in an effective and accurate manner and also it is reducing the use of manual entries. This software helps food orders to maintain day to day records in system. It is keeping a proper record of the database.

## 1.3 Objectives

Help people to choose the best restaurant based on it's evaluation

Paying restaurant owners to improve their services based on the available evaluation

Facilitating the selection process for a customer who is afraid to go to a restaurant and become a bad experience for him

Assisting municipal officials to make decisions regarding a specific restaurant based on its evaluation

Building mutual trust between the restaurant owner and the customer as the evaluation only for employee of the municipality

## 1.4 Critical success factors

- Save time and effort to employee and user
- Easy communication between restaurants owners and employee of the municipality
- The application contains evaluation services
- The project ends on time

## 1.5 Collection Data

### Restaurants evaluation android app

**1. هل تتوقع نجاح التطبيق فى تقديم محتوى قيم وفعال للمستهلك**

| | | | Response Percent | Response Total |
|---|---|---|---|---|
| 1 | نعم |  | 100.00% | 8 |
| 2 | لا | | 0.00% | 0 |
| 3 | محايد | | 0.00% | 0 |

| Analysis | | | | | | | answered | 8 |
|---|---|---|---|---|---|---|---|---|
| | Mean: | 1 | Std. Deviation: | 0 | Satisfaction Rate: | 0 | | |
| | Variance: | 0 | Std. Error: | 0 | | | skipped | 0 |

**2. هل سوف يقوم الموظف داخل التطبيق بتتقييم المطاعم بشكل متوازن وغير منحاز لاى طرف من الاطراف**

| | | | Response Percent | Response Total |
|---|---|---|---|---|
| 1 | نعم |  | 85.71% | 6 |
| 2 | لا | | 0.00% | 0 |
| 3 | محايد |  | 14.29% | 1 |
| **Analysis** | Mean: 1.29 / Std. Deviation: 0.7 / Satisfaction Rate: 14.29 | | answered | 7 |
| | Variance: 0.49 / Std. Error: 0.26 | | skipped | 1 |

**3. هل يضمن التطبيق حيادية التطبيق وتطبيق معايير الجودة فى التقييم من طرف الموظف**

| | | | Response Percent | Response Total |
|---|---|---|---|---|
| 1 | نعم |  | 85.71% | 6 |
| 2 | لا |  | 14.29% | 1 |
| 3 | لست متخصص | | 0.00% | 0 |
| **Analysis** | Mean: 1.14 / Std. Deviation: 0.35 / Satisfaction Rate: 7.14 | | answered | 7 |
| | Variance: 0.12 / Std. Error: 0.13 | | skipped | 1 |

**4. هل توجد معايير معينة للتقييم قام التطبيق بفرضها على موظف البلدية اثناء عملية التقييم**

| | | | Response Percent | Response Total |
|---|---|---|---|---|
| 1 | توجد |  | 57.14% | 4 |
| 2 | لا توجد |  | 14.29% | 1 |
| 3 | لا اعرف |  | 28.57% | 2 |

| Analysis | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean: | 1.71 | Std. Deviation: | 0.88 | Satisfaction Rate: | 35.71 | answered | 7 |
| | Variance: | 0.78 | Std. Error: | 0.33 | | | skipped | 1 |

**5. هل ينطبق هذا التقييم على تقييم النظافة وجودة الطعام وهيئة الموظفين وايضا موقع المطعم**

| | | | Response Percent | Response Total |
|---|---|---|---|---|
| 1 | نعم |  | 71.43% | 5 |
| 2 | لا |  | 14.29% | 1 |
| 3 | لا اعرف |  | 14.29% | 1 |

| Analysis | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean: | 1.43 | Std. Deviation: | 0.73 | Satisfaction Rate: | 21.43 | answered | 7 |
| | Variance: | 0.53 | Std. Error: | 0.28 | | | skipped | 1 |

**6. هل سوف تنصح اصدقائك بتجربة هذا التطبيق اثناء بحثهم عن مطعم**

| | | Response Percent | Response Total |
|---|---|---|---|
| 1 | نعم | 100.00% | 7 |
| 2 | لا | 0.00% | 0 |
| 3 | لا ارغب فى ابداء راى | 0.00% | 0 |

| Analysis | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Mean: | 1 | Std. Deviation: | 0 | Satisfaction Rate: | 0 | answered 7 |
| | Variance: | 0 | Std. Error: | 0 | | | skipped 1 |

**7. هل يستفيد التطبيق من اصحاب المطاعم وبالتالى سوف يقوم بالتدخل فى عملية التقييم من خلال زيادة وانقاص التقييم**

| | | Response Percent | Response Total |
|---|---|---|---|
| 1 | لست متأكد | 28.57% | 2 |
| 2 | بالطبع لا | 28.57% | 2 |
| 3 | ربما | 42.86% | 3 |

| Analysis | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Mean: | 2.14 | Std. Deviation: | 0.83 | Satisfaction Rate: | 57.14 | answered 7 |
| | Variance: | 0.69 | Std. Error: | 0.31 | | | skipped 1 |

## 1.6 General Rules (Assumptions)

Requires users to know how to use mobile applications.

- Supervisor: responsible for following works of students
- Student: achievement the tasks to complete the project.

## 1.7 Literature Review

❖ **The main Principle Application**

### 1.7.1 OpenTable: Restaurants Near Me

OpenTable is the perfect travel companion—offering 52,000+ restaurants around the world so you can find a local resturant wherever you are


Figure 2-1 OpenTable: Restaurants Near Me

❖ **Advantages**

- Definition of **OpenTable**
- Find the right restaurant
- get personalized recommendations based on your preferences
- Narrow down your search with dozens of filters including neighborhood

❖ **Disadvantages**

- This application does not have evaluation from official party.
- This application does not give right information to the users about how many stars this restaurant .

### 1.7.2 Yelp: Find Food, Delivery & Services Nearby

Yelp puts great local businesses right at your fingertips. Discover new foods, hot spots, places for shopping and local businesses near me! While traveling or at home.

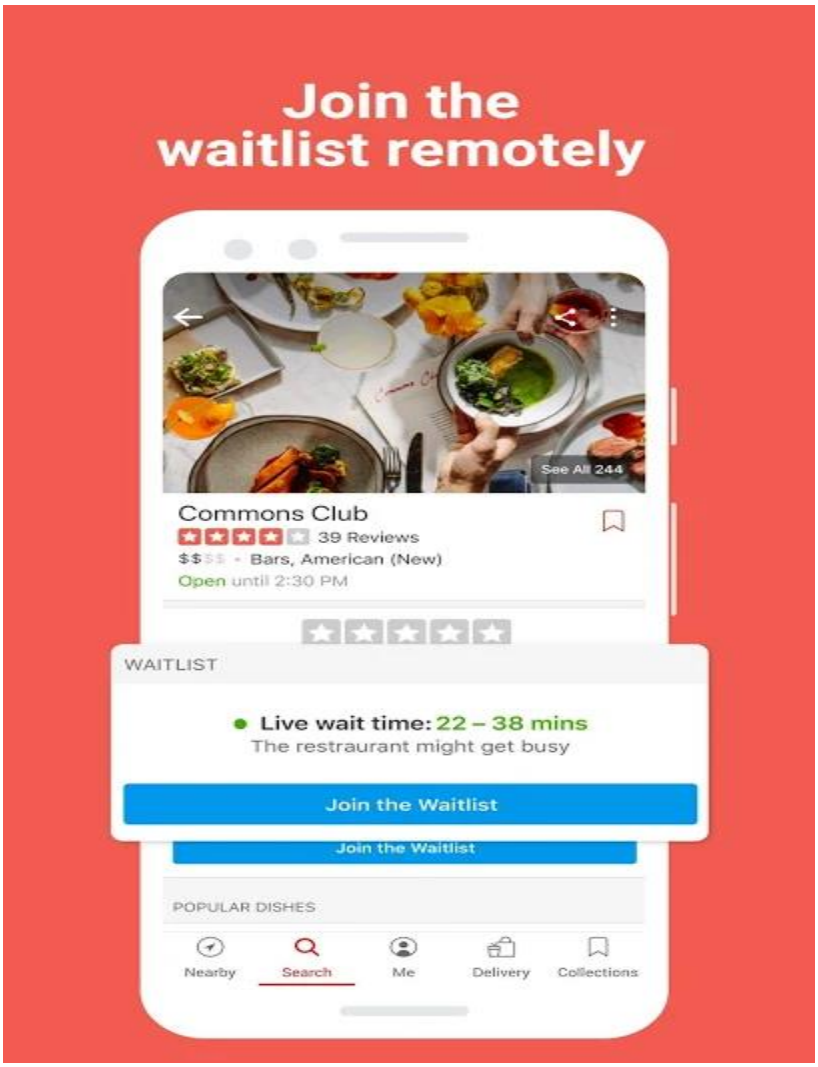



Figure 2-2 Yelp: Find Food, Delivery & Services Nearby

❖ **Advantages**

- yelp has over 199 million business and restaurant reviews worldwide
- ad online reviews, browse photos and menus.
- Read restaurant reviews from other Yelp users and scroll through photos to help you decide where to go

❖ **Disadvantages**

- This application does not have evaluation from official party.
- This application does not give right information to the users about how many stars this restaurant .

### 1.7.3 Comparative between our system and the related works

After presenting the related works with their advantages and disadvantages, we can doing the following comparative through the table:

Table 2-1 Comparative table

| Service | Our project | Yelp Application | OpenTable Application |
|---|---|---|---|
| Mobile Application | Yes | Yes | Yes |
| Offering wide information about Restaurants | Yes | Yes | Yes |
| Easy to use by all | Yes | No | Yes |
| Offering list of Restaurants | Yes | Yes | Yes |
| Offering Quality test | Yes | No | No |
| Offering evaluation from municipality employee | Yes | No | No |
| Saving historical file for the restaurant | Yes | No | No |
| Its free Application | Yes | Yes | Yes |

## 1.8 Functional and Non-Functional

### 1.8.1 Functional Requirements

- The user accesses the application by e-mail or phone
- The user post the rate and write the comment and maybe attach photo or video
- The user divided to Municipal employee and normal user
- The user can report or comment on a specific publication, or publish his personal experience of the restaurant he has gone to.
- The application manager blocks or deletes a user account or sends alerts to users or generate reports about restaurants .

### 1.8.2 Non- Functional Requirements

The non-functional requirement specify the performance characteristic of the system, which are in our system:

- **Reliability**:

  Our application is reliable and it protects all data in the mobile device from an attacker or unauthorized user.

- **Security:**

  The security of our application is to prevent unintended access and resist deliberate attacks intended to gain unauthorized access to information.

- **Usability:**

  Our application is easy to use that it has simple pages and links, which enable any user from using it.

- **Maintainability:**

  The application is monitoring to correct any error occurred and making a backup for the database each time.

## 1.9 Design Model

One of the basic notions of the software development process is SDLC models, which stands for Software Development Life Cycle models. The most used, popular and important SDLC models are given below: [5] [9]

1- Waterfall model

The linear nature of this method makes it easy to understand and manage. Projects with clear objectives and stable requirements can best use the waterfall method.

2- Iterative model

It attempt to minimize risk when adding new functionality by developing the software in iterations that are mini-increments of the new functionality

3- Spiral model

The Spiral methodology extends the Waterfall model by adding rapid prototyping in an effort to combine advantages of top-down and bottom-up concepts

4- Agile model

Focused on improving time, lowering the failure rate of new releases, shortening the lead-time between fixed reliability.

### 1.9.1Comparative between methodologies

Table 2-2 Comparative between methodologies

| | Waterfall | Iterative | Spiral | Agile |
|---|---|---|---|---|
| Time Consuming | Little | Many | Many | Many |
| widely understood | Yes | No | Yes | No |
| complexity | No | Yes | Yes | Yes |
| Project size | Small, medium | medium | medium, Large | medium |

**The methodology used is Waterfall model**

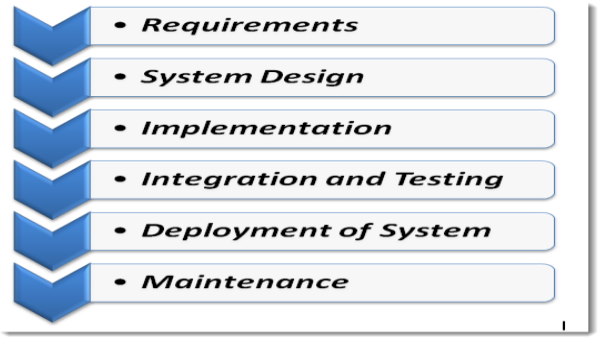


Figure 2-3 Waterfall model

We will use this model because:

- In the waterfall model, all phases are completed separately not overlapped because these phases are executed one by one.
- Waterfall model is successful mainly for the small-scale projects, where all the requirements are very clear to the team.
- This is very simple and easy to control because of the inflexibility of this model.

❖ **Summary**

In this chapter, we illustrated the problem definition, the goals, objectives, and collect the data, also we view the relation works and determine the advantages and disadvantages of them.

# CHAPTER 2: SYSTEM ANALYSIS AND SPECIFICATION

## 2.1 Introduction

To analyze the system we draw many diagrams to explain the system, description of data flow diagram, the context diagram, overview diagram (level 0), detailed DFDs, entity relationship diagram, and class diagram. It is the most crucial phase in the development of a system. In systems design, the design functions and operations are described in detail.

## 2.2Description of Data Flow Diagram (DFD)

### 2.2.1Overview Diagram (Level 0)

Interaction Overview Diagram is one of the fourteen types of diagrams of the Unified Modeling Language (UML), which can picture a control flow with nodes that can contain interaction diagrams. The overview diagram for our system is clear in the following shape: [6]

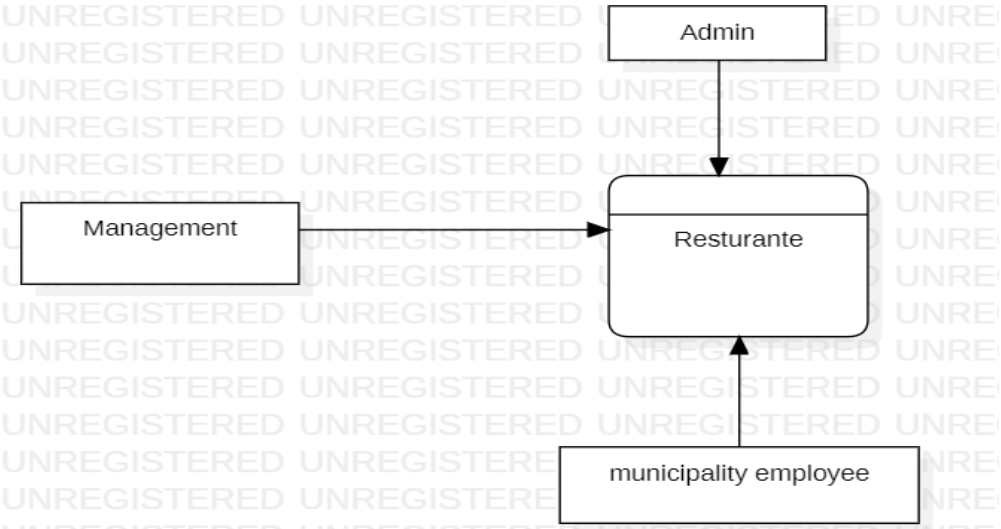



Figure 3-1 DFD diagram level 0

## 2.3Use case diagram

### 2.3.1Definition

Use case diagram is very important diagram in our system, which explains all users and their special processes, as it is clear in the following diagram:[7]

### 2.3.2Use Case Diagram

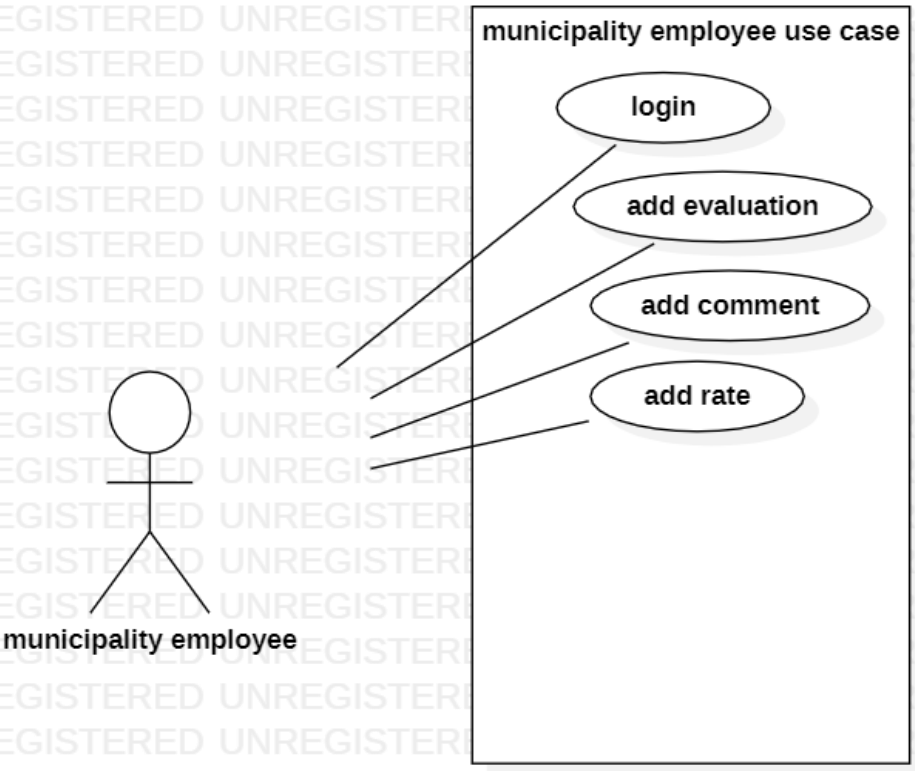



Figure 3-2 Use case diagram

- Use case for admin

This diagram is detailed diagram for the user doctor that he/she can login to the system, manage the patient profile, answers questions asked by patient escort, and management the appointment.

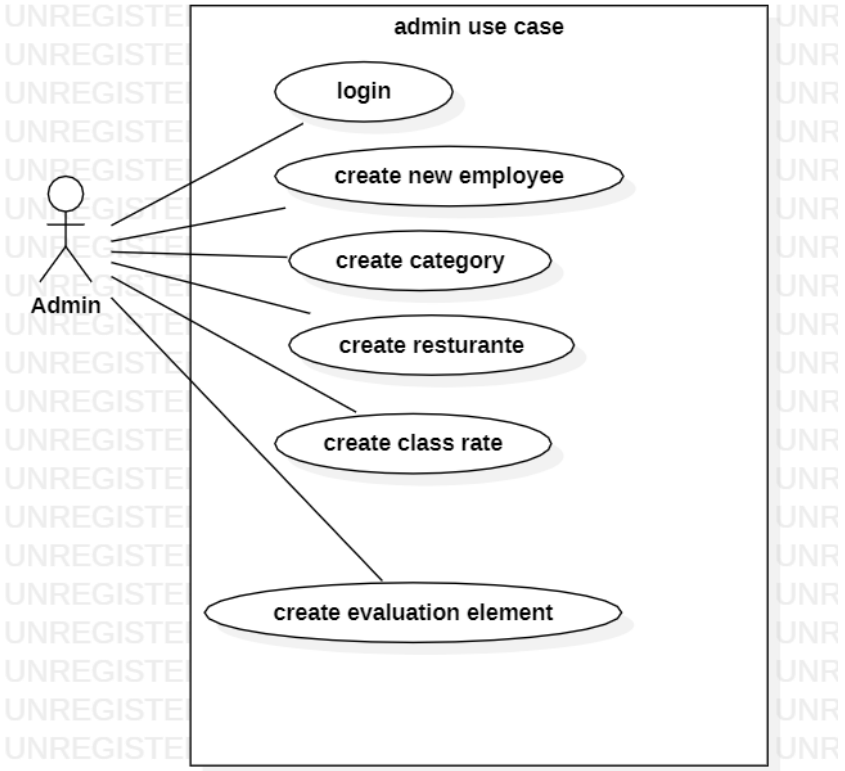



Figure 3-3 Doctor Use case diagram

## 2.4ERD diagram

### 2.4.1 Definition

ERD diagram show us all entities with their attributes in our system in addition to the relations between them as follow: [10]

### 2.4.2 Description of Entities

- Employee

  Represents the municipality employee.
- user

  Represents the client for restaurant that buy food.
- evaluation

  Represents the evaluation for restaurant.

- Admin

  Represents the manager of application.

- Restaurants

  Represents the table where we will save the restaurant.

### 2.4.3 Description of Relations

- Select
- Relation between Employee and Restaurants (one to many)
- evaluate
- Relation between Employee and evaluation (one to many)
- Search

  Relation between user and Restaurants (one to many)

- Manage

  Relation between exercise and Admin (one to many)

- Accept

  Relation between admin and evaluation (one to many)

### 2.4.4 Drawing ERD.

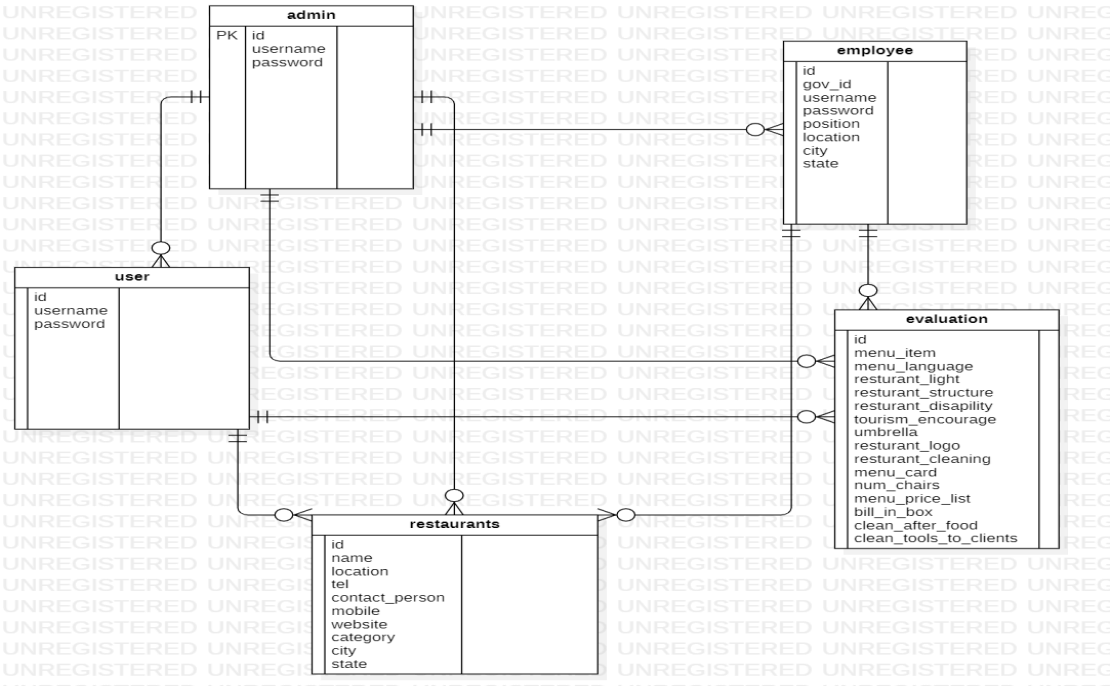



Figure 3-4 ERD diagram

## 2.5 Class Diagram

### 2.5.1 Definition

Class diagram is similar to ERD in general but it is clearer because it specify the methods and the keys in the entities. A class diagram is an illustration of the relationships and source code dependencies among classes in the Unified Modeling Language (UML). A class defines the methods and variables in an object, which is a specific entity in a program or the unit of code representing that entity. Our class diagram in this system is: [8]

### 2.5.2 Drawing Class Diagram

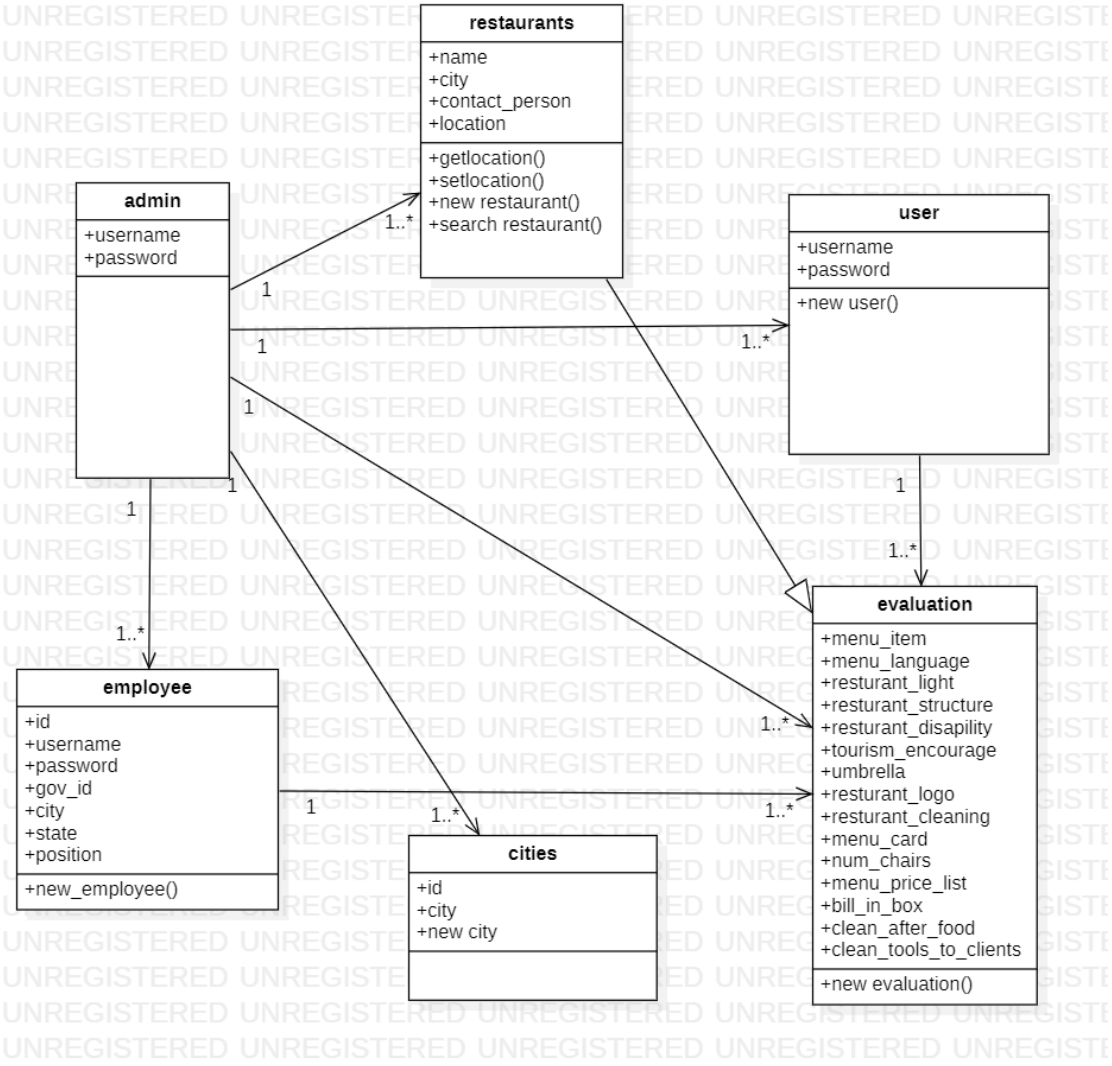



Figure 3-5 Class diagram

## 2.6 Sequence Diagram

### 2.6.1 Definition

Sequence diagrams are sometimes called event diagrams or event scenarios. A sequence diagram shows, as parallel vertical lines.[13]

### 2.6.2 Sample of Sequence Diagram

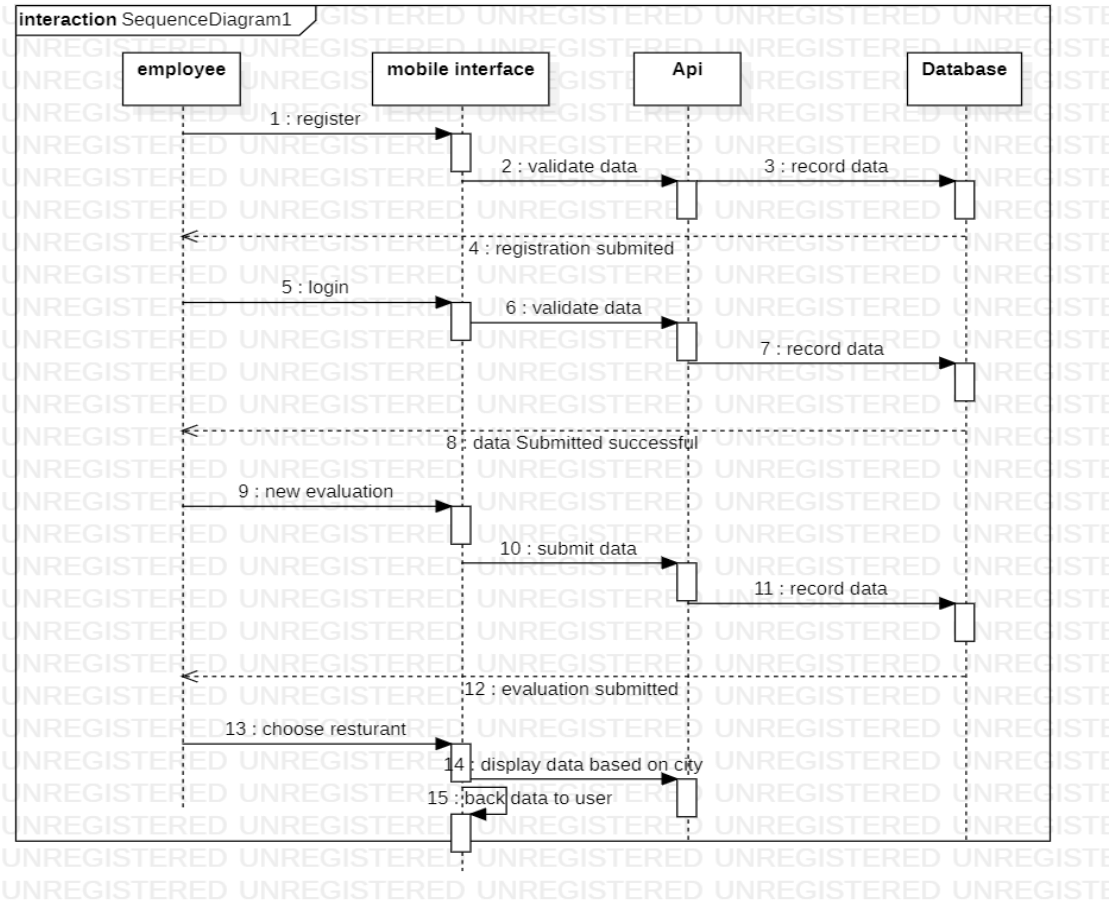



Figure 3-6 Sequence diagram

❖ **Summary**

In this chapter, we illustrated many diagrams to explain the system, we draw the use case, class, activity and sequences.

## CHAPTER 3: SYSTEM DESIGN

### 3.1Description of Procedures and Function

3.1.1 Login procedure

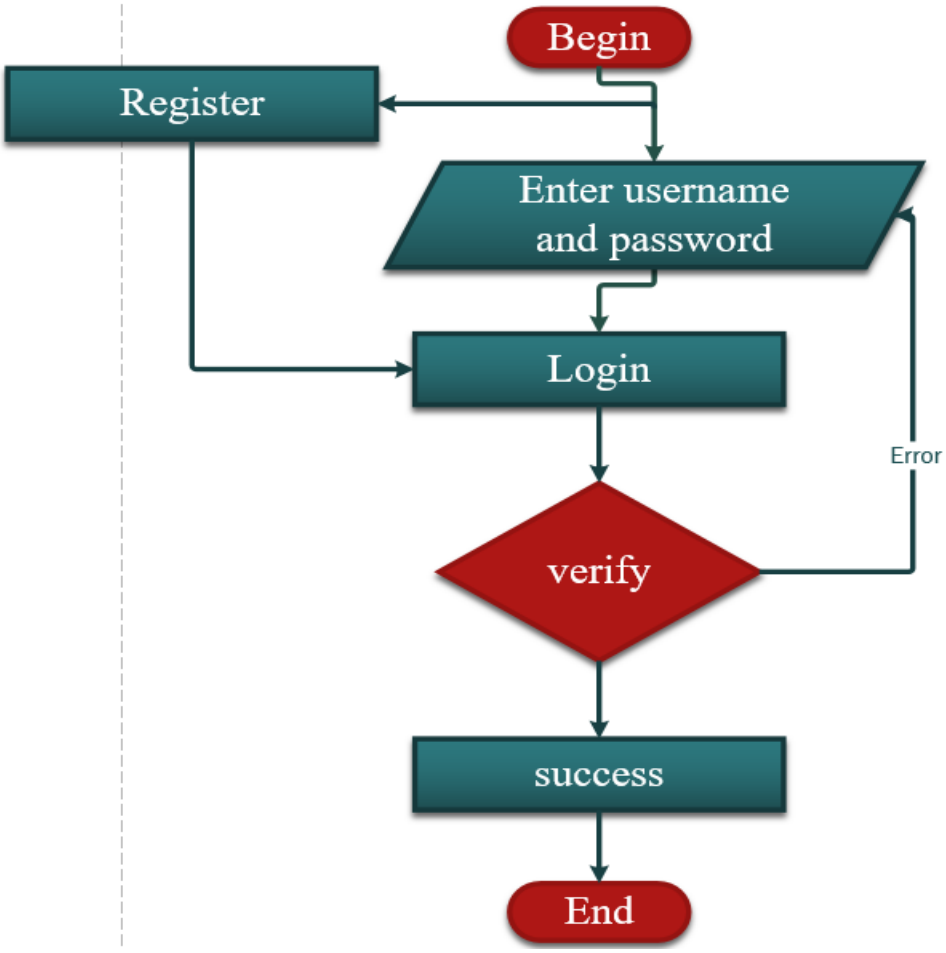



Figure 4-1 Login procedure diagram

## 3.2 Relation Database Schema

### 3.2.1 Tables

- employee Table
- user Table
- admin Table
- evaluation Table
- cities Table
- Restaurant Table

### 3.2.2 Attributes

- Admin Table

Table 4-1 admin table

| Attribute | Type | constraint |
|---|---|---|
| **ID** | int | Primary key |
| **UserName** | Varchar | |
| **password** | Varchar | |

- evaluation Table

Table 4-2 evaluation table

| Attribute | Type | constraint |
|---|---|---|
| **id** | int | Primary key |
| **menu_item** | Varchar | |
| **menu_language** | Varchar | |
| **resturant_light** | Varchar | |
| **resturant_structure** | Varchar | |
| **resturant_disapility** | Varchar | |
| **tourism_encourage** | Varchar | |
| **umbrella** | Varchar | |
| **resturant_logo** | Varchar | |

| | | |
|---|---|---|
| **resturant_cleaning** | Varchar | |
| **menu_card** | Varchar | |
| **num_chairs** | Varchar | |
| **menu_price_list** | Varchar | |
| **bill_in_box** | Varchar | |
| **clean_after_food** | Varchar | |
| **clean_tools_to_clients** | Varchar | |
| **rest_id** | int | Foreign key |
| **emp_id** | int | Foreign key |

- cities Table

Table 4-3 cities table

| **Attribute** | **Type** | **constraint** |
|---|---|---|
| **ID** | int | Primary key |
| **city** | Varchar | Primary key |

- employee Table

Table 4-4 employee table

| **Attribute** | **Type** | **constraint** |
|---|---|---|
| **ID** | int | Primary key |
| **gov_id** | Varchar | |
| **username** | Varchar | |
| **password** | Varchar | |
| **position** | Varchar | |
| **location** | Varchar | |
| **state** | Varchar | state |
| **city** | int | Foreign key |

- Restaurant Table

Table 4-5 Restaurant table

| Attribute | Type | constraint |
|---|---|---|
| **ID** | int | Primary key |
| **name** | Varchar | |
| **location** | Varchar | |
| **tel** | Varchar | |
| **mobile** | Varchar | |
| **city** | int | Foreign key |
| **state** | Varchar | |
| **category** | Varchar | |
| **website** | Varchar | |
| **contact_person** | Varchar | |

- user Table

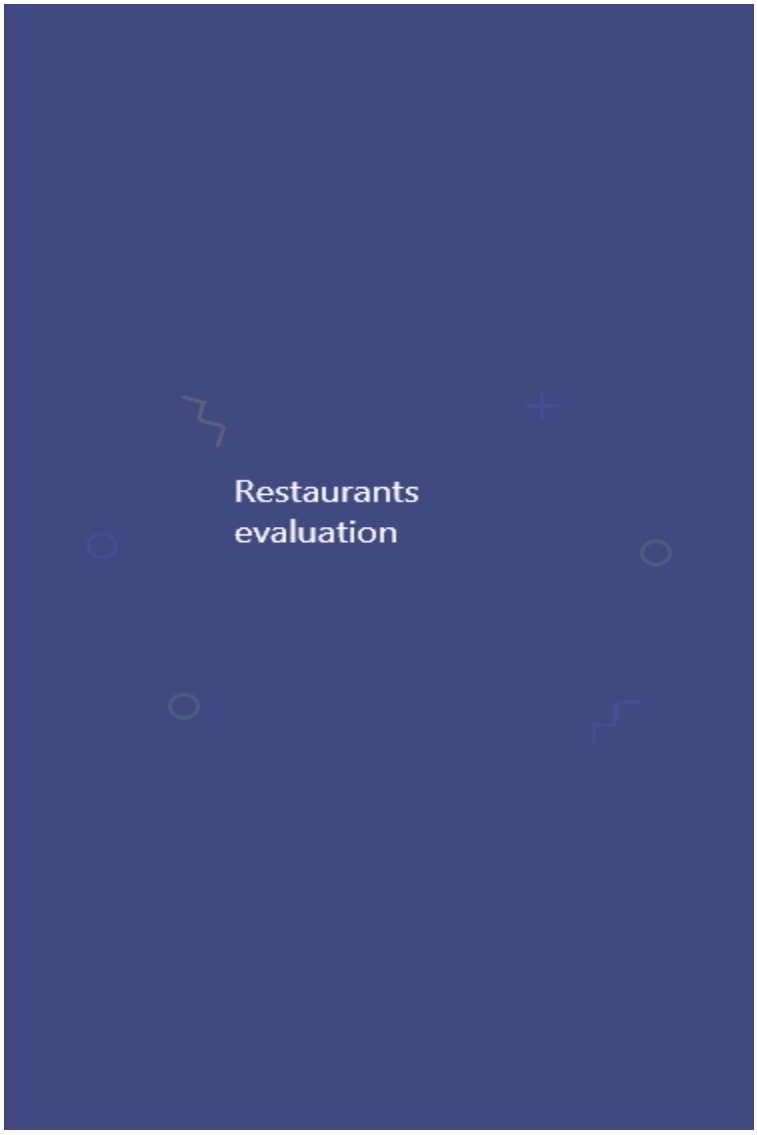
- Table 4-8 user Table

| Attribute | Type | constraint |
|---|---|---|
| **ID** | int | Primary key |
| **UserName** | Varchar | |
| **password** | Varchar | |

3.3

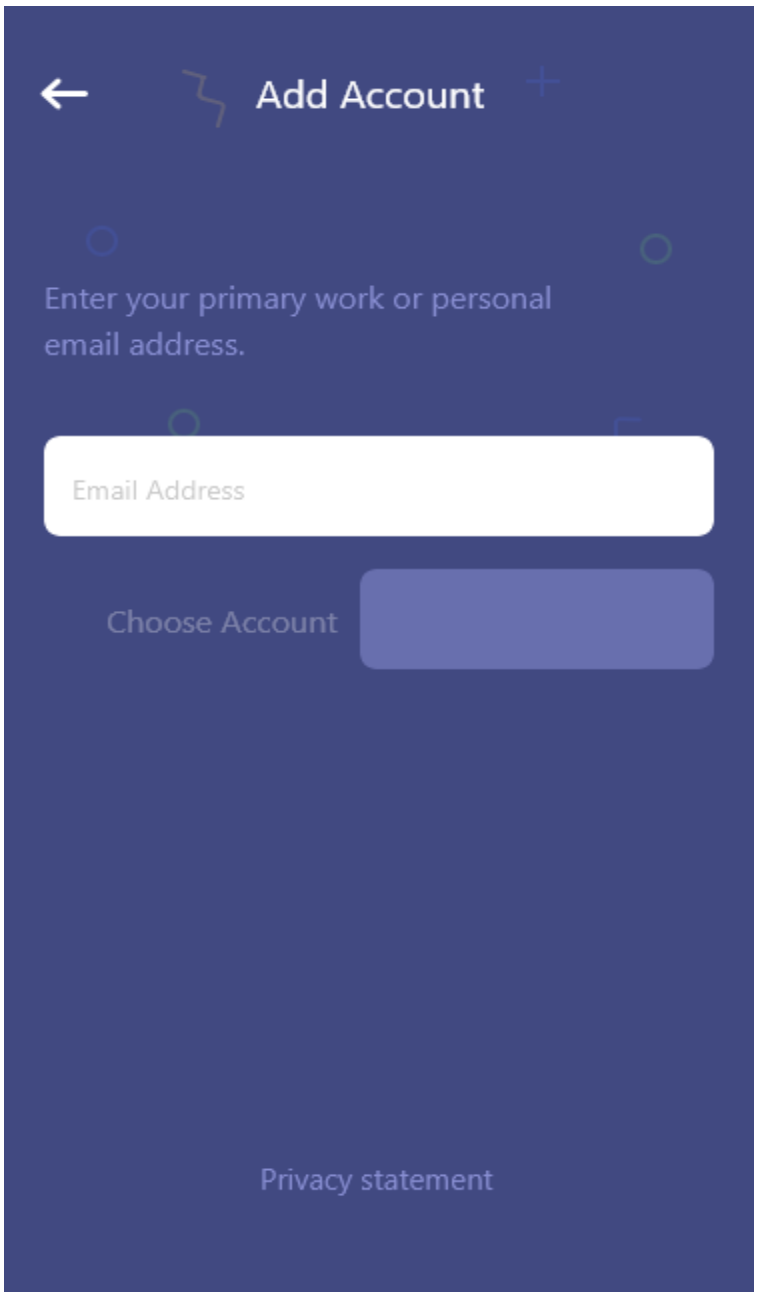
## 3.4Expected Interface

Home Interface

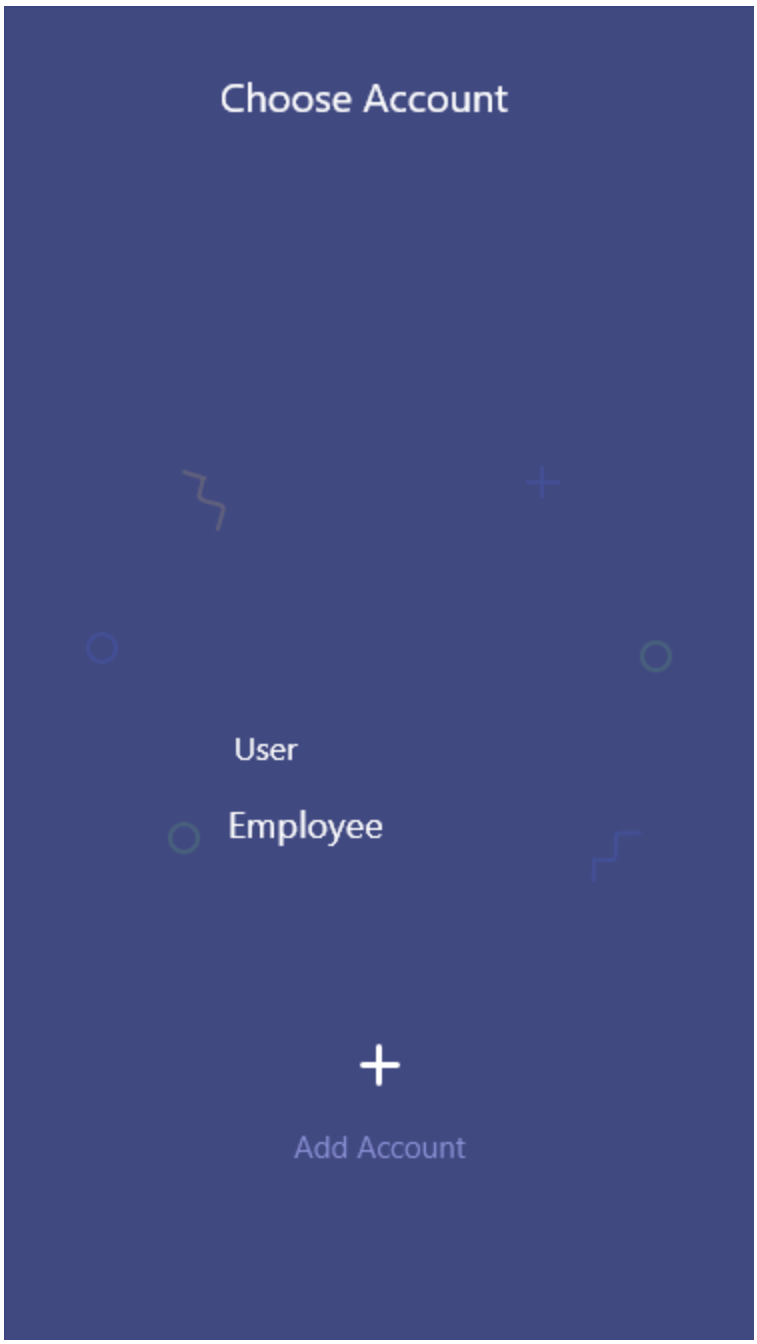


Choose account interface

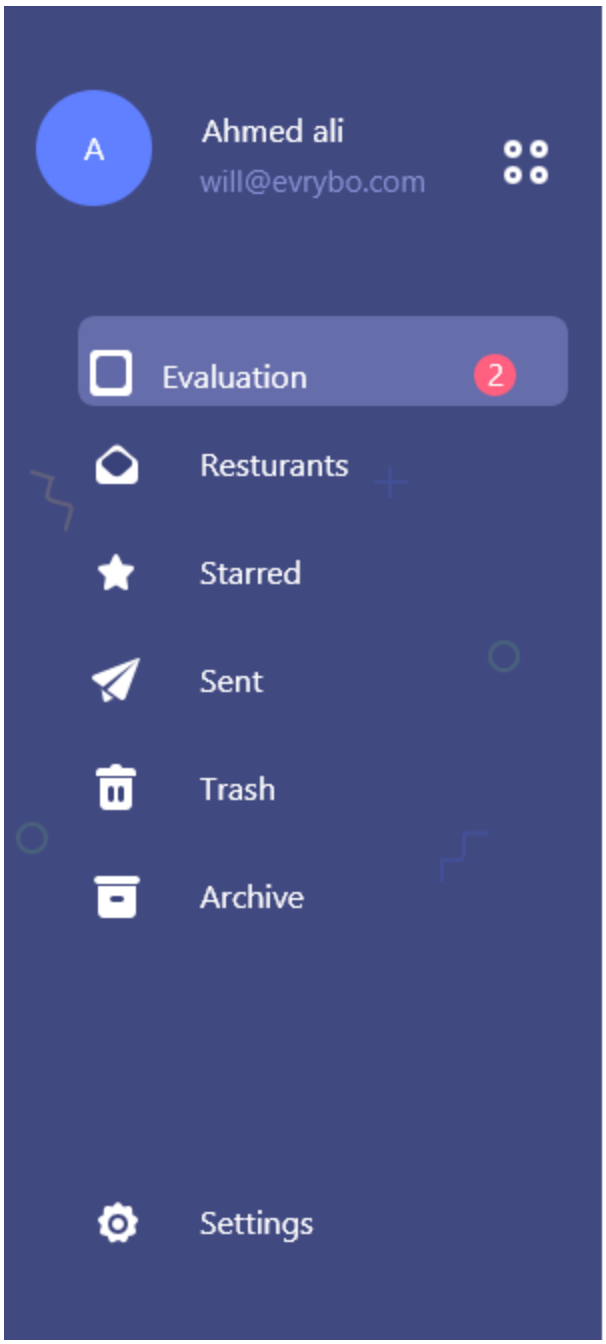
Add new account



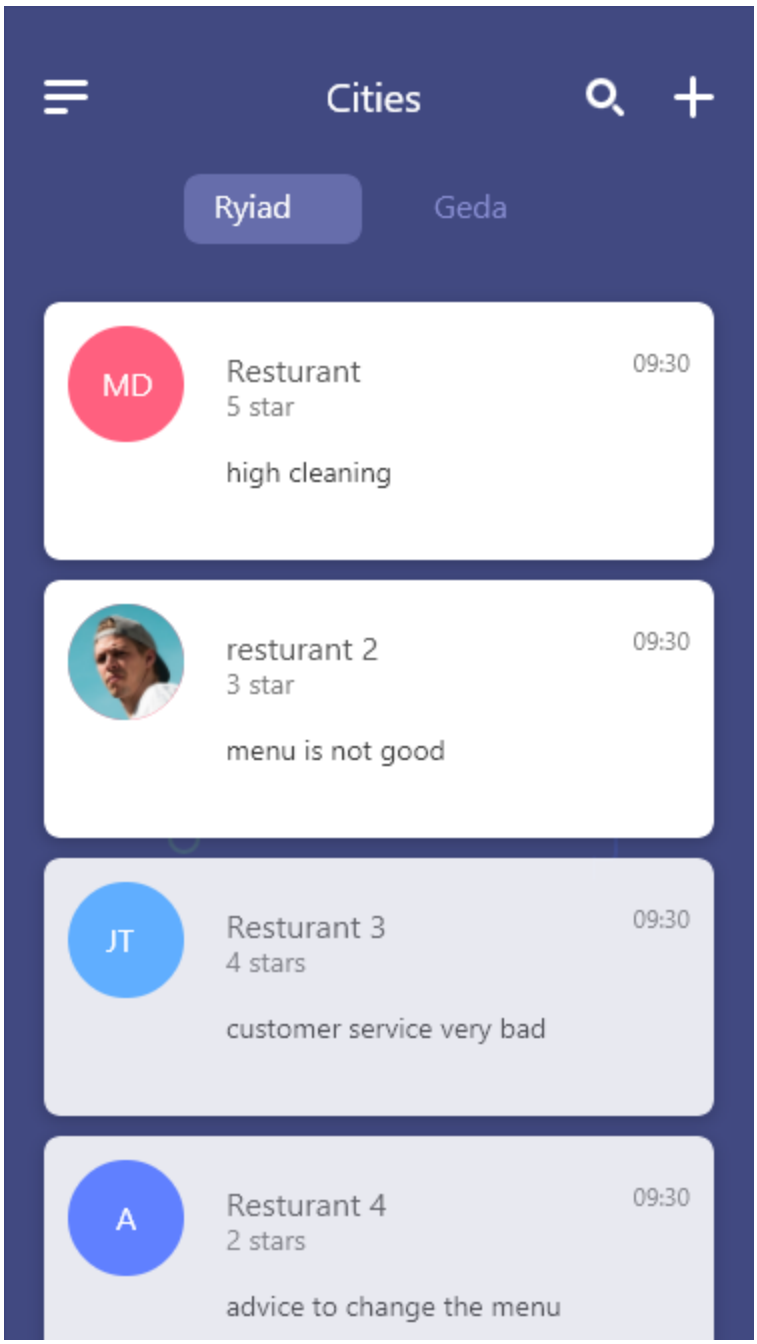
Login as employee or normal user



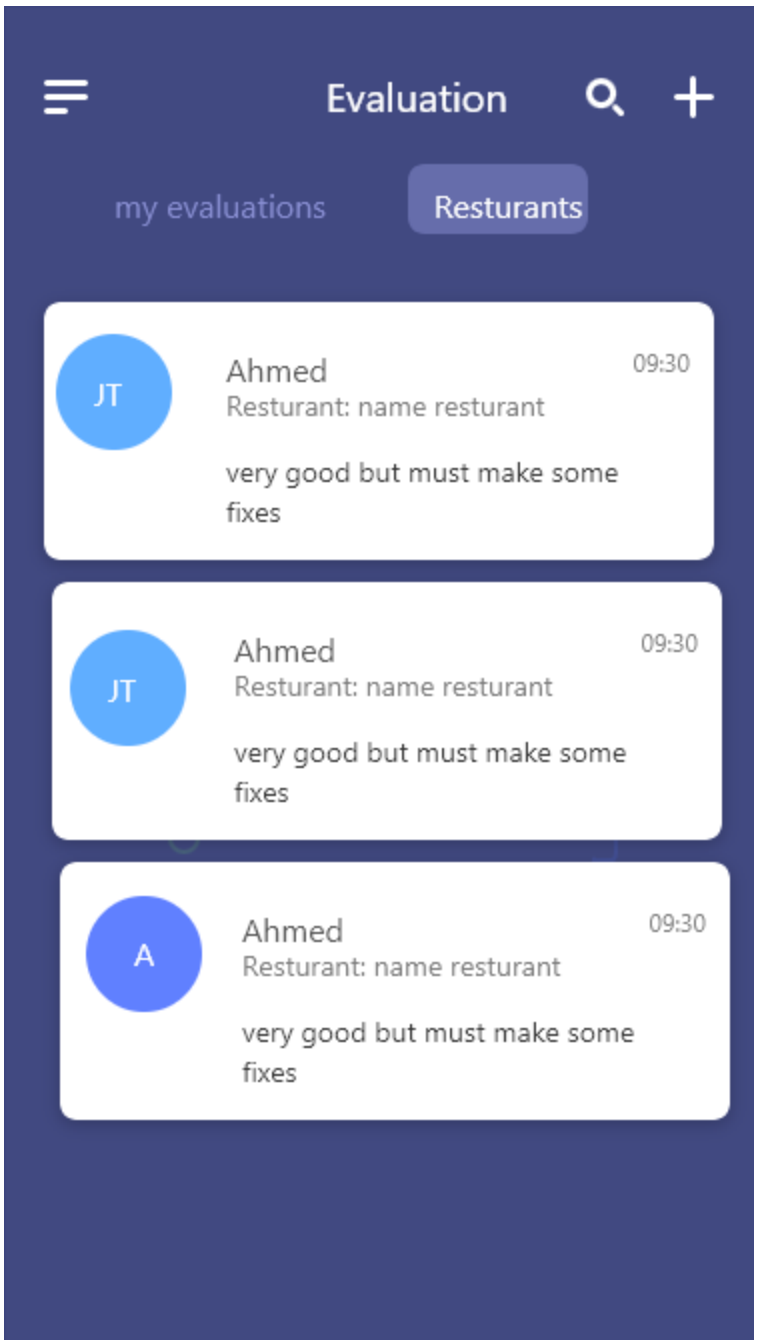
Sidebar Interface



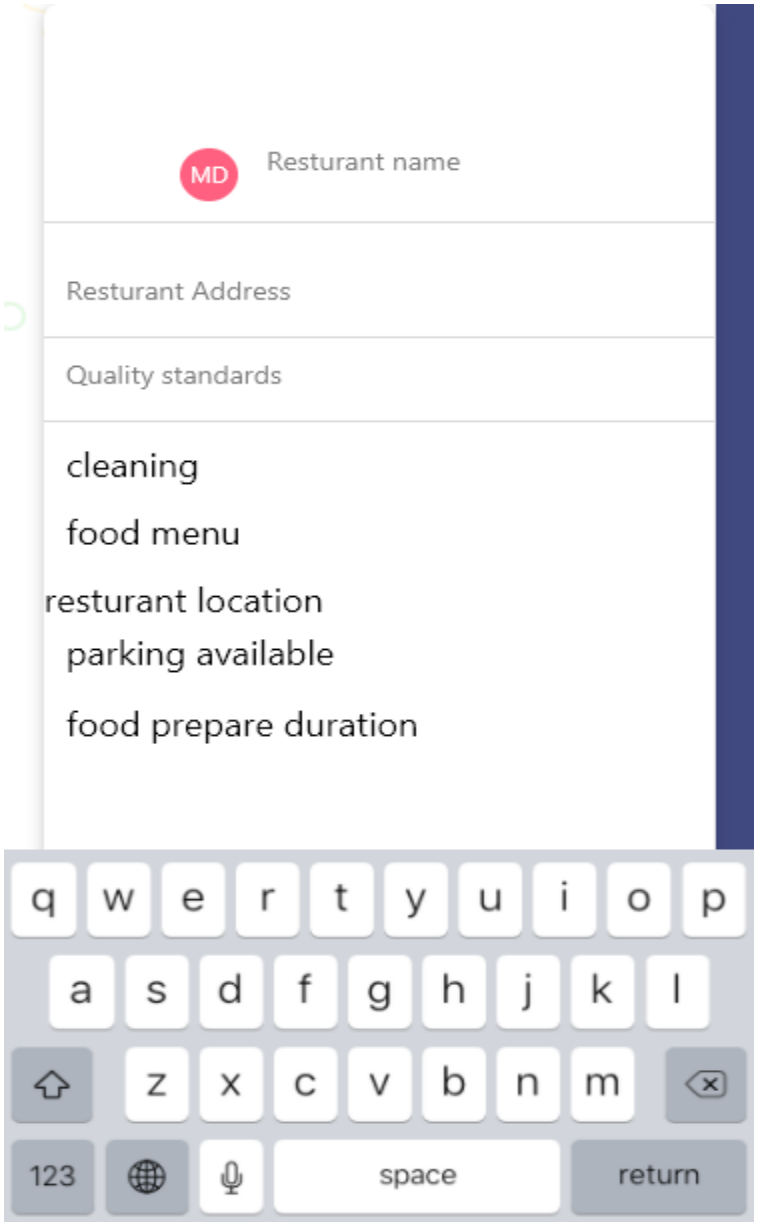
Cities Interface



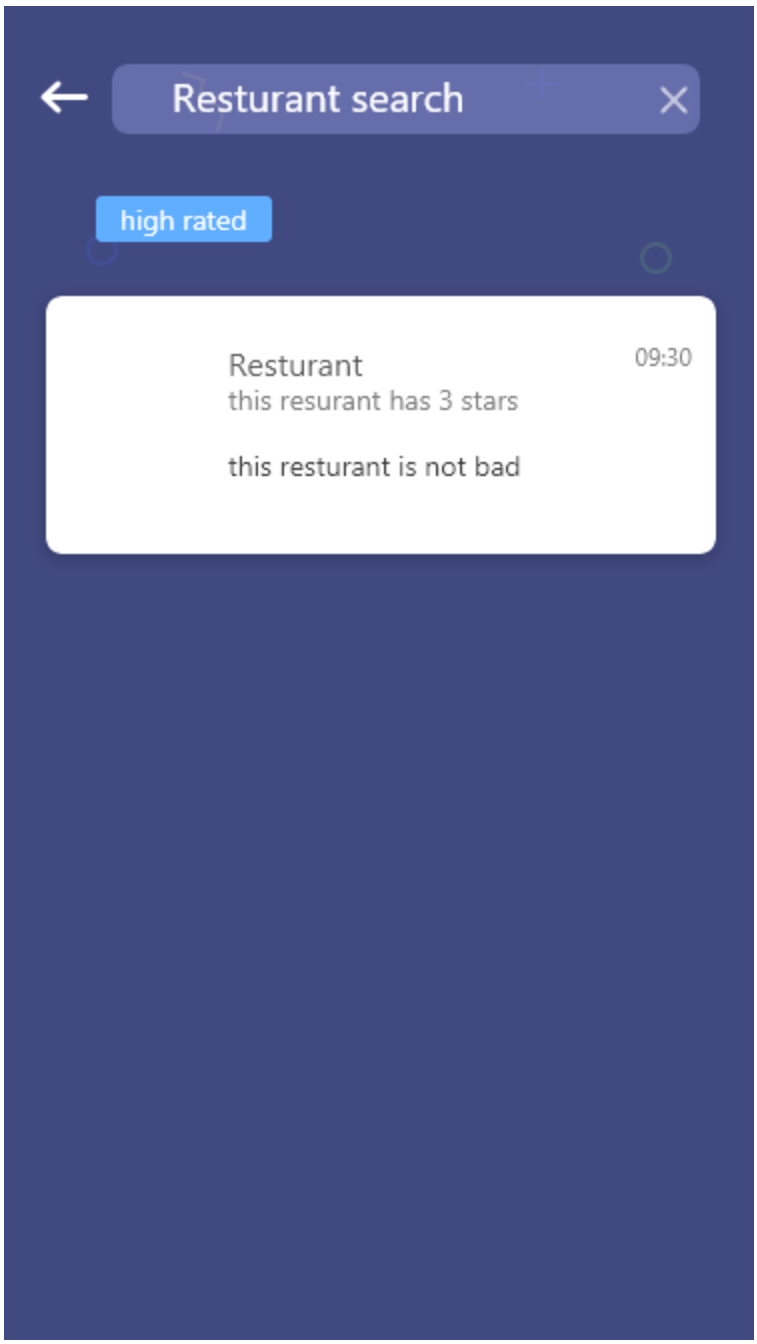
Evaluation Interface



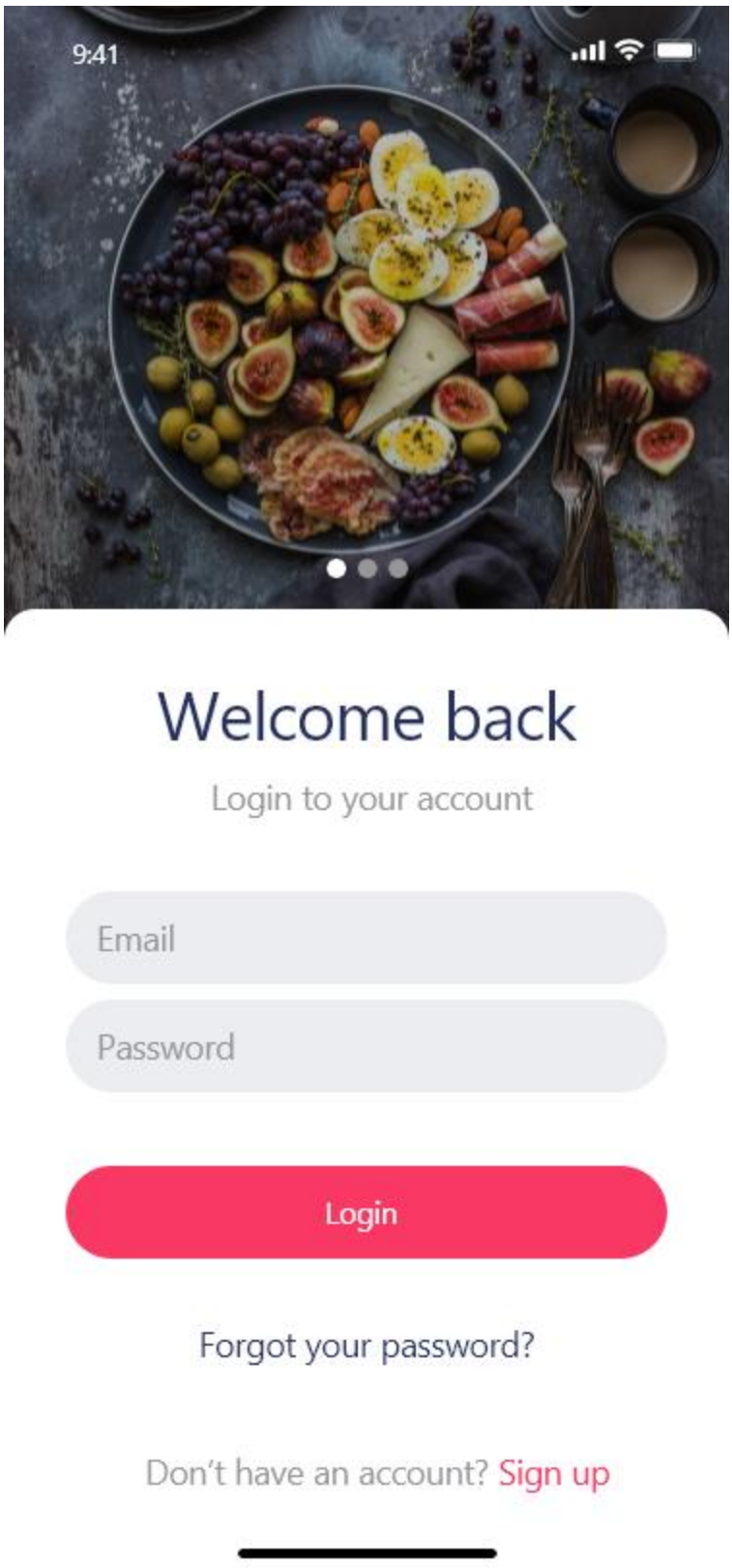
Evaluation Submit



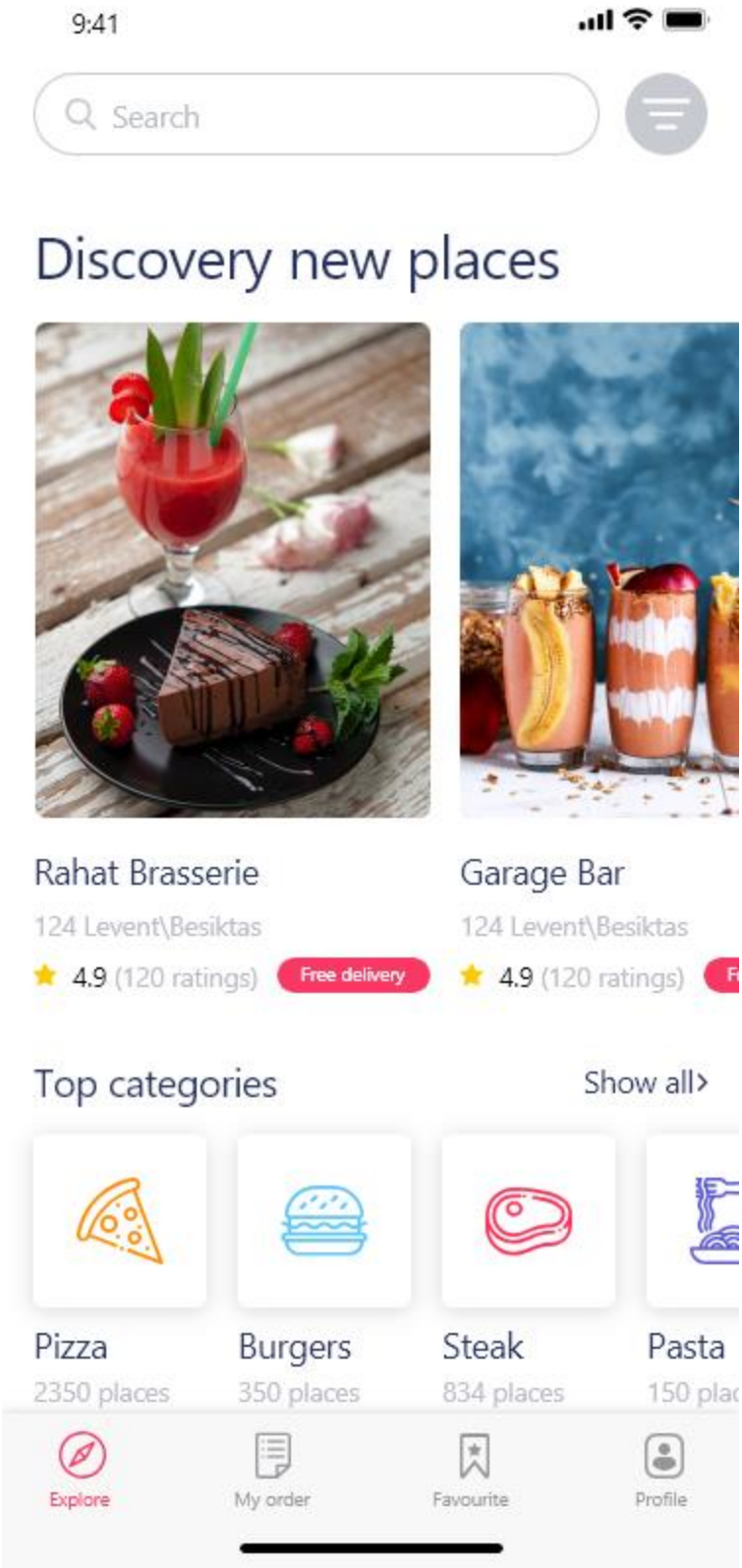
Search about restaurant to submit evaluation



Login as normal user



Search about restaurant based on rate and evaluation



## 3.5Hardware and Software Requirements

### 3.5.1 Hardware Requirements

- Computer
  - 2GHz Processor with three cores.
  - 8 GB RAM.
  - 500 GB HDD space.
  - Monitor with good resolution.

### 3.5.2 Software Requirements

- Java SDK and android studio IDE (with SDK bundle).
- Java programing language.
- MYSQL
- Android Studio

❖ **Summary**

In this chapter, we described the procedure of functions and write the tables with attributes, also we determined the hardware and software requirements.

## Conclusion

In this reports we discuss the idea of Evaluation Restaurant , we explain the problems of the project and determine the solution, and then we draw diagrams to illustrate the stages of work. Our feature work is implementation our application using suitable tools

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