Descriptions of the Alga Mobile Application

1   Feature and functionalities

ALGA App is an online reservation & booking system application launched by **RCNDC** Consultancy a software development company which has entered the software market in October 2016

Functional Requirements

We specify the functional requirements in modules based on the combination of use case, mode of operation and user class, based on this we have discovered six modules in our app, those are Authentication, expert search, communication, location tracking, rating, and management, so below this, we will describe all the modules description and functionality

Authentication

To able to use and access this app the users must create an account and authenticate them as a single user class. So, this module is all about account creation(signup) and login functionality for customers, experts, and Admins. So, the following functionalities are must be provided: -

✓   The app shall allow to create an account.

✓   The app shall allow to send a digit to user email.

✓   The app shall allow to login to the app.

✓   The app shall allow to get a new password if they forget.

View Hotels modules

After authenticate the users they can view all hotels that included in the app. this module all about view all hotels, view Hotels based on their price and rating.

✓   The app shall allow to display all hotels to the user in home screen
✓   The app shall allow to display best deals of hotels to the user
✓   The app shall allow to display the places of the hotels

- ✓ The app shall allow to view detail information of the hotels
- ✓ The app shall allow to view review of the hotels such as rating, comments

Map modules

- ✓ The app shall allow to detect the user location
- ✓ The app shall allow to list the hotels on the map near to the current location of the users
- ✓ The app shall allow to pin the exact location on the hotels on the map

Booking and Reservation modules

- ✓ The app shall allow to list room categories that found in the selected hotel
- ✓ The app shall allow to display detail descriptions of the room categories
- ✓ The app shall allow to display list of room list that the users want to reserve
- ✓ The app shall allow to users insert detail information to the required forms before book and reserve
- ✓ The app shall allow to users reserve the room after complete the form and the app show a success message to the user
- ✓ The app shall allow to give a choice of the payment process to the users
- ✓ The app shall allow to list methods of payment transaction to the user on the screen when they select book now process

Favorite Module

- ✓ The app shall allow to users can add the hotels to the favorite list

Rating and comment module

- ✓ The app shall allow to the user give rating and comments for hotels

Actors/User Types

- ✓ Admin
- ✓ Hotel Manager
- ✓ Receptionist
- ✓ Users

➢ **System Architecture**

Our system will consist of three-tier architectures those are Presentation Layer, Application Layer, and Data Layer. Doing so gives us greater flexibility to develop by allowing us to update a specific part of an application independently of the other part. At the presentation layer, flutter for mobile application and react.js for web app the run-on user mobile so that it can control and handle user interactions. In Application layer contains business logic and implemented in node.js with its module graphql that is used handle the routing of requests to the right parts of our application and gives the mobile app access to the resources it needs form the backend, in addition to that this layer contains google map API that provides the functionalities of google map for our app users which is used to view hotels around the current location of the user. And at the data layer, we have MySQL database this is where we store all of the crucial data that our application needs to function
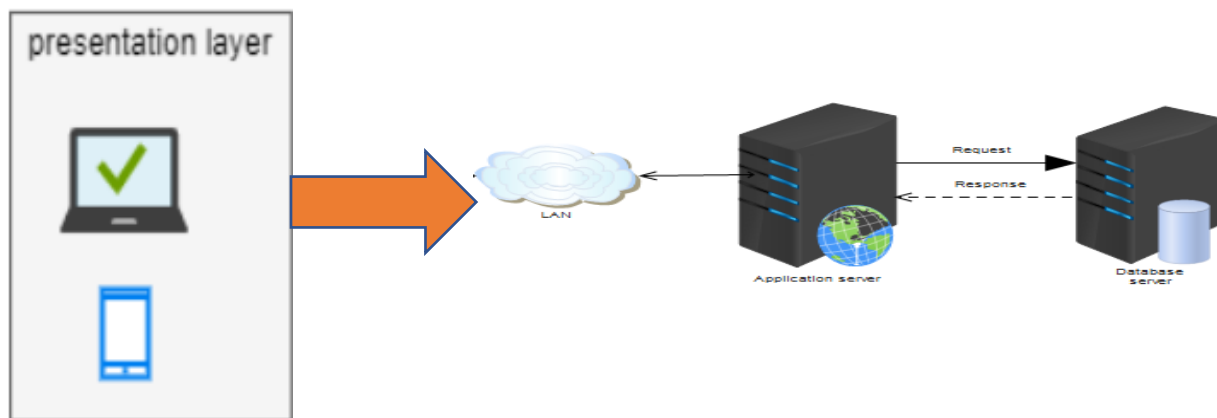
➢ **Dependencies, system minimum requirement**

In order to users to pin the location of the hotels on the app, it will work only in GPS enabled phone. android version above 4 and minimum storage 2GB with 1GB for RAM.

➢ **Implemented security standard**

The app is prevented unauthorized users by checking username and password, so the password is secured and can't be seen and accessed by anyone because we will use MD5 encryption algorithm.

✓ Users' password is hashed using MD5 hashing from dart crypto package for mobile app and bycrypt.js for the web app. and passwords shouldn't be less than 8 characters to making harder for password cracking.

- ✓ We have used the validator method for mobile application so we can filter all entries and check for malicious content.
- ✓ Users after registration the app take a digit that send into user registered email for account activation.
- ✓ We have used the middleware to protect our app from Brute Force and DDOS Attacks. This middleware is used to validate the user when they send a request to the server

➢ Scope For the Security Evaluation

- ✓ Confidentiality -> our app is preventing the information from unauthorized users. Since in order to users get a benefit from the app first, they must be authorized to the app. In addition to this the users to use the app the needed a verification code that send to the user email so that the code is email in the correct user email data. the app validates and verify the input data when the user sends the request.
- ✓ Availability -> the app shows the data to the user if and only if the users is authorized. The users cannot get any privilege that harm the app.

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