Software Requirements Specification

for

TAXI MANAGEMENT SYSTEM

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1. Introduction

1.1 Purpose

This document is meant to describe the features of Taxi Management System (TMS), so as to serve as a guide to developers and act as a software validation document for clients. It is intended to completely specify the functionalities which system provides. The TMS is the web application which will automate the process of booking a taxi and will facilitate the clients and drivers with reduced time and efforts. The admin will manage and establish proper contact between different modules of an application.

1.2 Document Conventions

To build this template we followed IEEE standard Software Requirements Specification document.

1.3 Intended Audience and Reading Suggestions

This document is intended for the readers like developers, customers, management people and passengers so that they can suggest changes in further scope of improvement. This document specifies product scope, product functions, functional and non-functional requirements and technical issues related with the project.

1.4 Product Scope

This application allows user to register, sign in, send a taxi booking request, pay using payment gateway as well as it allows to give ratings to the drivers. It enables drivers to sign in, receive trip request and can accept the trip request. Admin can sign in, manage the garage status and can create the accounts for drivers.

1.5 References

- Taxi management system approach- Taxi Management Software Solutions - Taxi Management System - Taxi Fleet Management (aistechnolabs.com)
- Connecting mysql server using nodejs - https://www.tutorialkart.com/nodejs/nodejs-mysql-connect-to-database

2. Overall Description

2.1 Product Perspective

i)To build a platform where people can book taxi to plan their trip based on their locations.
ii)To create responsive, user-friendly and easy to use interface for application.

iii)To guide users (customers) and drivers using the applications.
iv)To provide easier payment gateway to users.
v)To provide 24 x 7 facilities to users.

2.2 Product Functions

The functions which can be performed using this application are:
i) To book a taxi to desired location.
ii) Get details of driver and taxi along with the ratings to driver.
iii) Make a payment for planned trip
***iv)**Give ratings to the drivers.*
***v)**Get a trip history for all the trips.*

2.3 User Classes and Characteristics

2.3.1 User classes

User (customer/rider) interested to plan trip using application.
User (driver) associated with application in terms of trip.

2.3.2 User Characteristics

User should be familiar with the uses of application and internet facilities.
User should be aware with the terms such as Register, Sign in, Book, etc.

2.4 Operating Environment

-Intel x86 or compatible processor
-Minimum of 4GB RAM
-Minimum of 120GB free hard drive space
-Compatible operating systems:

- *x86 Linux operating system.*
- *64-bit Windows operating system*
- *Mac OS X operating system x64.*

2.5 Assumptions and Dependencies

Assumption: The internet connection is ON when user using the TMS application.
-The assumed factors that could affect the requirements stated in the SRS:
***i)**The rider may want to cancel a trip when the driver has already started the trip.*
***ii)**The driver ends the trip even before reaching the destination*

3. External Interface Requirements

3.1 User Interfaces

Graphical User interface will be provided for users to login, sign-up, see drivers available in their desired location and book their ride. Similarly, GUI will also be provided to drivers who can login and get notifications of the requests for trip and take action. Another UI will be provided for admin who can see the driver, customers, driver ratings, taxi status and take actions if necessary.
GUI will be built using React frontend framework and JSX model. This UI will be responsive to size of screen, ensure user get proper messages informing them about the status of task.

3.2 Hardware Interfaces

Following points would be ensured that they are acquired for the implementation of website:

- *Intel x86 or compatible processor*
- *Minimum of 2GB RAM*
- *Minimum of 25GB hard drive space*
- *TCP/IP protocol support*

3.3 Software Interfaces

1) *Compatible operating systems:*
   - *X86 Linux operating system*
   - *64bit Windows operating system with versions greater than 6 such as Windows 7, Windows 9, Windows 10 etc.*
   - *MAC OS X operation system x64*
2) *Mysql database*
3) *MERN stack*

3.4 Communications Interfaces

- *HTTP Protocol used for querying the system*
- *User connected to LAN or WAN can access the website if run on localhost*
- *Any user on internet can access web app if deployed on platforms such as Heroku, AWS etc.*
- *Nodejs library (mysql) used for connecting to database.*

4. System Features

This section will guide through all the system features and functionalities provided to user, driver and admin

4.1 Admin Side Features

4.1.1 Create account of driver

Admin can create account for new driver added to the system by adding basic information and taxi assigned to that driver.

4.1.2 Maintain Garage Status

Admin can manage the garage and can have all information related to the taxis present inside the garage such as their color, models, taxi number, status, etc.

4.1.3 Manage Owner's information and Grievances

Admin can manage the information of owners of respective taxis and can have all information related to rent to pay for the taxis. Along with that admin can read all the grievances submitted by customer and can take necessary actions if required.

4.2 Customer Side Features

4.2.1 Register

Customer or User can create account by providing some basic details such as name, phone number, address and password, etc.

4.2.2 Login

User can login to the account by providing certain credentials.

4.2.3 Sending trip requests

User can check the available taxis from home page and can plan a trip to destination by sending trip request to the driver of chosen taxi.

4.2.4 View booking status and trip history

User can view booking status as well as trip history for all trips planned by user.

4.2.5 Payment details and ratings.

User can pay the billing amount by giving payment details and can also give ratings to the drivers based on their overall experience in trip.

4.3 Driver Side Features

4.3.1 Login

Driver can login to the application with the credentials and can view details of location and ratings

4.3.2 Checking Shift times and taxi details.

Driver can check their shift timings and will also get the details of the taxi which available to use.

4.3.3 Accepting trip requests

Driver can accept the trip requests received from the list of all requests and can start the trip.

4.3.4 Update current location

Driver can update the current location from home screen to get trip requests based on location.

5. Other Nonfunctional Requirements

Following Non-Functional Requirements will be there in the insurance to the internet:

- *Secure access to consumer's confidential data*

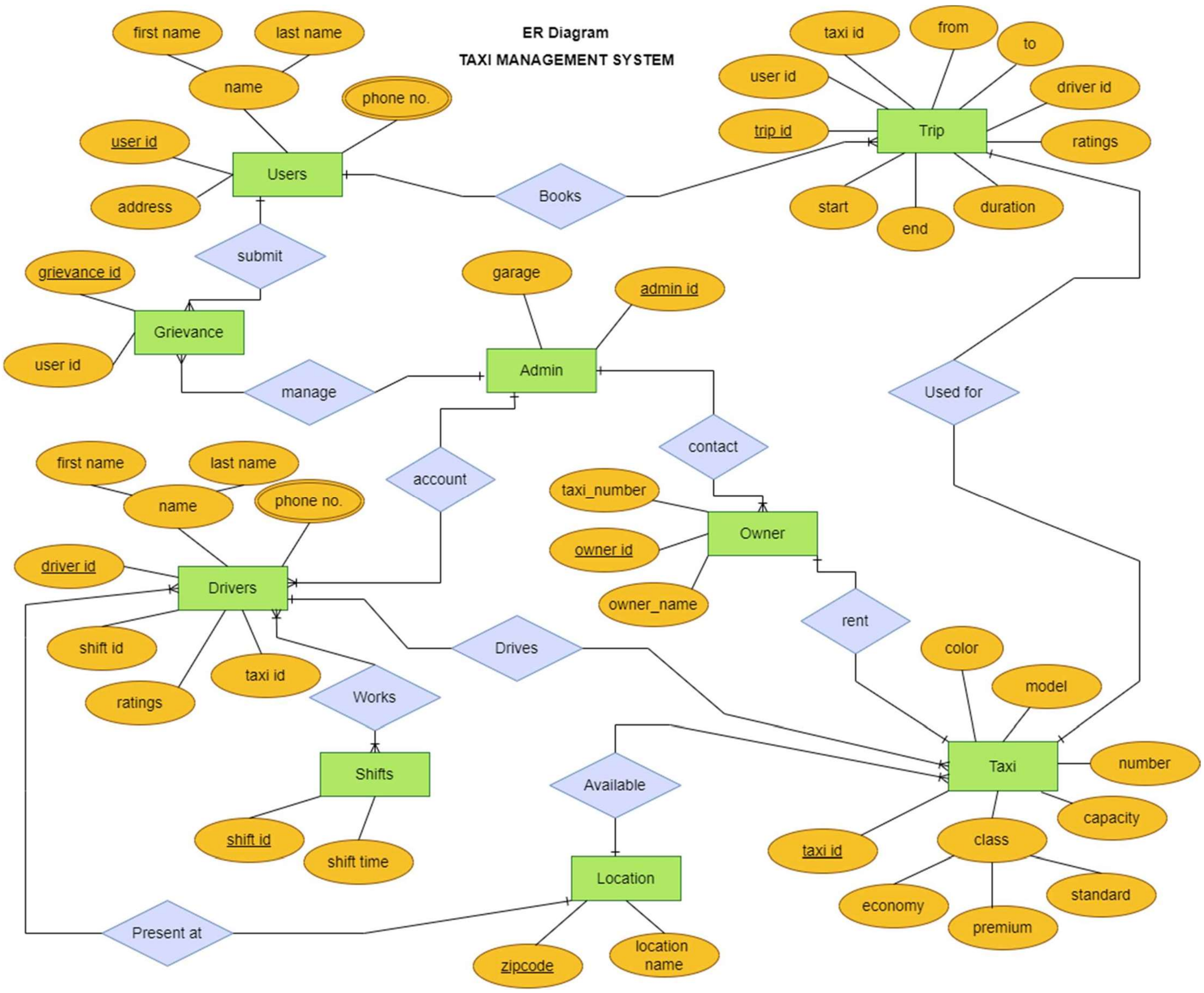
- 24X7 availability.
- Better component design to get better performance at peak time.
- *Flexible service-based architecture will be highly desirable for future extension.*
- *Reliable*
- *Portability*
- *Compatibility*
- *Ensure proper Functioning of website and error free payment gateways*
- *Users get proper alerts on not providing correct information or wrong activity.*

Appendix A: Glossary

SRS: *Software Requirement Specification*
TMS*: Taxi Management System*
GUI: *Graphical User Interface*
LAN: *Local Area Network*
WAN: *Wide Area Network*

Appendix B: Analysis Models

ER Diagram


ER Diagram
TAXI MANAGEMENT SYSTEM
first name
last name
name
phone no.
user id
Users
address
submit
grievance id
Grievance
user id
manage
Books
Trip
taxi id
from
to
user id
driver id
trip id
ratings
start
end
duration
garage
admin id
Admin
Used for
contact
account
first name
last name
name
phone no.
driver id
Drivers
shift id
ratings
taxi id
Works
Shifts
shift id
shift time
taxi_number
owner id
Owner
owner_name
rent
Drives
color
model
Taxi
number
capacity
taxi id
class
economy
premium
standard
Available
Location
zipcode
location name
Present at