Dynamic taxi-sharing system using Dual-side searching algorithm

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Abstract

Now-a-days taxi is an important transportation mode delivering millions of passengers to different locations in urban areas. Most of the passengers depend on taxi for travelling from one place to another. Day-by-day taxi is increasing but passengers did not get the taxi on time and wait for long time. To keep away from this issue, introducing the taxi-sharing system that accepts the passengers ride-request sent from webpage. Utilizing this application all passengers' details can be added to the database and the administrator is given by an id and password. This id and password can be kept by the administrator. To track the client details are stored in database with id verification. The server will respond very fast for the allocation and deployment for the owner resources. And it recognizes very fast for the retrieval time also.

Keywords– Seat Occupancy rate, Satisfaction rate, Cloud Dbaas.

1. Introduction

A Taxi-sharing system that accepts taxi passengers ride requests sent from websites to schedule the proper taxis to pick them up. If the detail entered by the user is invalid, then the admin does not allow them to book the taxi. This thesis is used to maintain the user information. If the user login to the website for the first time, the registered details are stored into the database. If the user has already registered, then he can able to book the taxi by fetching the details from the database. It provides security by preventing data from unauthorized user when they enter into the network.

2. Literature survey

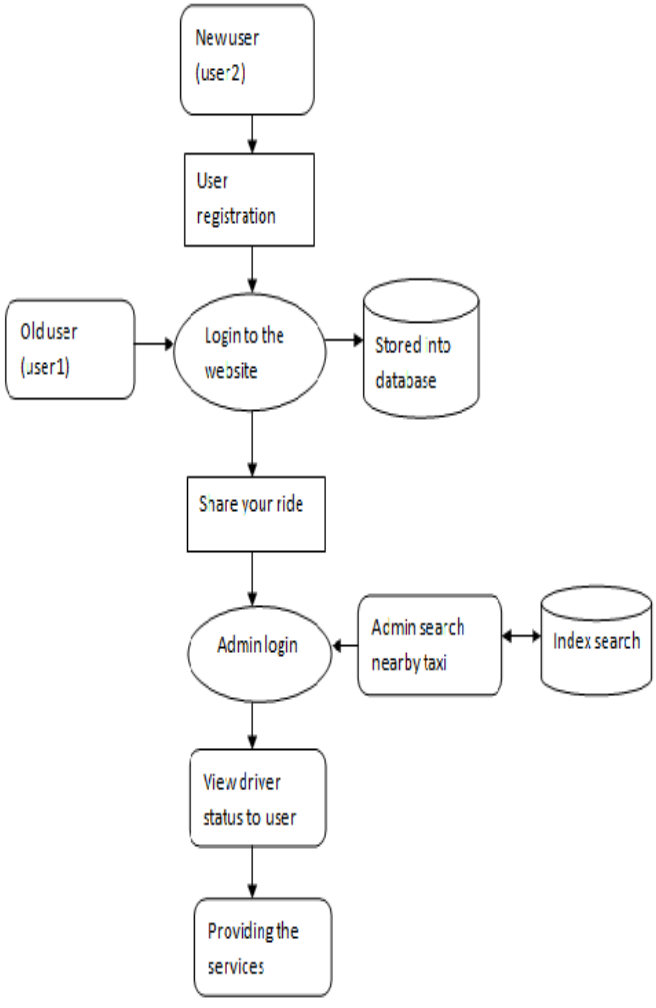
In this Section, different techniques are focused: [1] A Comparison of Acceptance Criteria for the Daily Car-Pooling Problem: The effect of varying the move acceptance policy, specifically Late-acceptance criteria with and without reheating. Late acceptance based move acceptance criteria was chosen, since there is durable pragmatic evidence in the literature which indicates their superiority. Late-acceptance relates the independent values of the current solution with one which was obtained at a fixed number of steps former to the current step during the search method in order to make a receiving decision. [2] Collaboration and Mutual Plans in the Exposed World: Studies of Ridesharing: Coordination among self-interested people expected at minimizing the cost of shipping and the impact of travel on the environment. Its planning, optimization, and payment mechanisms that provide fair

and efficient solutions to the ride share collaboration challenge. It evaluates the different VCG-based payment schemes in terms of their computational efficiency, budget balance, incentive compatibility, and strategy proofers. The behavior and analyses provided by the ABC ridesharing prototype system. [3] A Pickup and Conveyance Problem for Ridesharing Seeing Congestion: Efficient ridesharing solutions could help mitigate congestion. Some of the activities government organizations have taken encourage ridesharing include the availability of High Occupancy Vehicle (HOV) lanes and present policies of promotional toll rates on HOVs. These measures reassure ridesharing by falling costs or travel times of such trips. To study how the optimal routes, variation as a function of enticements for ridesharing, we modified existing pickup and delivery problems with time windows to consider vagaries in passenger foldaway time and toll cost due to vehicle load. Our computational results discover how the entire route cost and time are affected by the use of HOV lanes and toll savings. It is beneficial from a time and cost viewpoint to take deviations to pick up additional passengers and use HOV tracks when the time funds on HOV lanes is significant.

3.Proposed Work

A Taxi sharing system provides the service to the passengers by the system via website. The user first registers the details such username, password, contact number to share the ride. If the user has already registered, login into the website. This is used for security purpose. The user information is stored into the database and admin is provided by a username and password. After registration the user login to the admin and the admin provide the nearby taxi drivers to pick up the passengers whether they are waiting for someone in another location or free. The driver id, name, location, status is given to the user and the user send the request to the driver. If the taxi request is confirmed, the co-passenger details such as gender (male or female), location (origin and destination, time) also given by the driver. It may be accepted or not that is the customer option.

4. System architecture



The taxi ride sharing system displays a home page asking for the user registration details. When a new user login to the website, the details entered by him are stored into the database. If he is an old user, the values are fetched from the database. After storing the details into the database, a user can book a sharing ride. When the booking is confirmed, the username and password are sent to the user who booked for the ride. Now the administrator starts searching for the taxis which are available at nearby distances. The searching is performed through dual-side search algorithm. After reserving a taxi, the status of the driver is sent to the user. The status notification comprises of driver's name, id and location. When the user feels satisfactory about the driver's details, he can use the service by riding on the taxi.

Advantages

- To improve good Quality of Service (QoS).
- Distributing the ride gives less expensive.

5. Modules

User registration

In this module, Interface design deals with the process of developing a method for modules in a system to connect and communicate. These modules can apply to hardware, software or the interface between a user and a machine. In this module mainly we are focusing the login design page with the Partial knowledge information. Application Users need to view the application they need to login through the User Interface GUI is the media to connect User and Media Database.

Sharing the Taxi ride

This module is used to after the passenger logged in choosing this ride sharing they need to share the rides. These helps the passengers to choose their needs to select the timings and destination where they need to go.

Request forward to administrator

After choosing the destination and timings the request will be forwarded to the administrator. The administrator only has rights to provide taxi. The administrator updates the driver status to the user. The co-passenger details are given by the driver.

Administrator searching the nearby taxi

In this module administrator is going to search the nearby taxi consider with of passengers starting point. Then administrator selecting the taxi and the riding request will forward to the driver.

Services provided to the user

After getting the administrator request the taxi driver providing the services to the passengers. Driver needs to manage all the needs of the co-passengers. The driver response to the user if they accept the ride request and the co-passenger details also updated.

System algorithm

BinaryFindGroup (low, high).

Input: $P, S_0 \ldots S_{n-1}$.

Output: The group to use for SUM or AVG

If low≥high, RETURN low.

Let $i = [low+high/2]$

If P AND $S_i \neq [0]$.

Then RETURN *BinaryFindGroup (low, i).*

Else RETURN *BinaryFindGroup(i+1, high).*

End.

Input: C_i (*for i=1,…,n*), each of which is the encryption of a block of *k* values V_{ij} (for *j=1,….,k*) of the same bit length, decryption key *K*, and the weight matrix W_{ij} (*for i=1,…,n,j=1,…,k*).

Output: The weighted sum of all *n.k* values: $\sum_{i,j} V_{ij} \cdot W_{ij}$

(1) Sum =0
(2) For each vertical slice $j = 1$ to *k*, do
(3) Compute $c = \prod_{i=1..n} c_i^{w_{ij}}$. Note that in the generalized pailier cryptosystem, these are modular multiplications and exponentiations.
(4) Compute *s = dec(K, c),* the decyption of c using key *K*.
(5) Split *s* into *k* values of equal bit length $s_i (1 \leq i \leq k)$, i.e., $s = s_1 \circ s_2 \circ \ldots \circ s_k$.
(6) $Sum = sum + s_j$.
(7) End For loop.
(8) Output sum.

6. Conclusion

The experimental results demonstrated as the effectiveness and efficiency of our system in serving real-time ride requests. Our system can enhance the delivery capability of taxis in a city so as to satisfy the commute of more people. For instance, when the ratio between the number of taxi ride requests and the number of taxis is 6, our proposed system served three times as many ride requests as that with no taxi-sharing.

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