

Nearest Restaurant Table Booking Application Using Dijkstra's Algorithm

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Abstract

In this project, we've implemented an idea to remove the inconvenience faced by the people of a city or a visitor that is a newcomer in the city, for finding a good restaurant near their residence or their current location. Dijkstra's algorithm helps us to find the nearest restaurant. Generally, on a different occasion, people love to celebrate in nearby restaurants. But sometimes people get it clumsy in the popular restaurants because they don't know the availability of table in that restaurants, so they have to return from that restaurant or they have to wait for a long time for the vacancy of the table. This worked as a motivation for us. We designed a system for the user to remove their inconvenience and this system helps them to find out the availability of the nearest restaurants using Dijkstra's algorithm and request a table booking.

Problem Formulation

On different occasion, prominent restaurants are crowded with many people. As a result, some people have to wait to get a table at that restaurant. Besides many people comes to a new area and they don't get proper idea about the nearest restaurant beside their location. So we've raised a web-based Application system which will help them to book a table and find out the nearest restaurant around them and according to the availability of table on that restaurant they can book a table. For implementing the idea we've used Dijkstra's Algorithm and database which will record the data of customer, restaurants and customers location. Dijkstra's algorithm will find out the nearest restaurant based on the co-ordinate of the user. Further, the sorting algorithm will sort the distance of the restaurants from the user location in Ascending order. So the user will find the suitable one for them according to the current location.

Objectives

- 01.To provide a facility for a user to book a table in a restaurant.
02. To provide a list of restaurants in a sorted way and their menu and deals between customer and admin.
03. To provide a dashboard for restaurants to upload activities i.e. pictures.
04. To allow the user to rate and review the restaurants.

Proposed Algorithm & Methodology

Dijkstra's algorithm :

Dijkstra's algorithm is a calculation finding the most minimal ways from a source to some different sources. This is the algorithm to find out the distance from a single source. In this way firstly find out the distance of adjacent nodes distance and then finding out the way by other edges, if the way by other edges distance is shorter then the distance will be relaxed of the previous edge nodes. The relaxation process is :
(distance[s]+weight(s, e)<distance[e]=distance[s]+weight(s , e).

Context Diagram

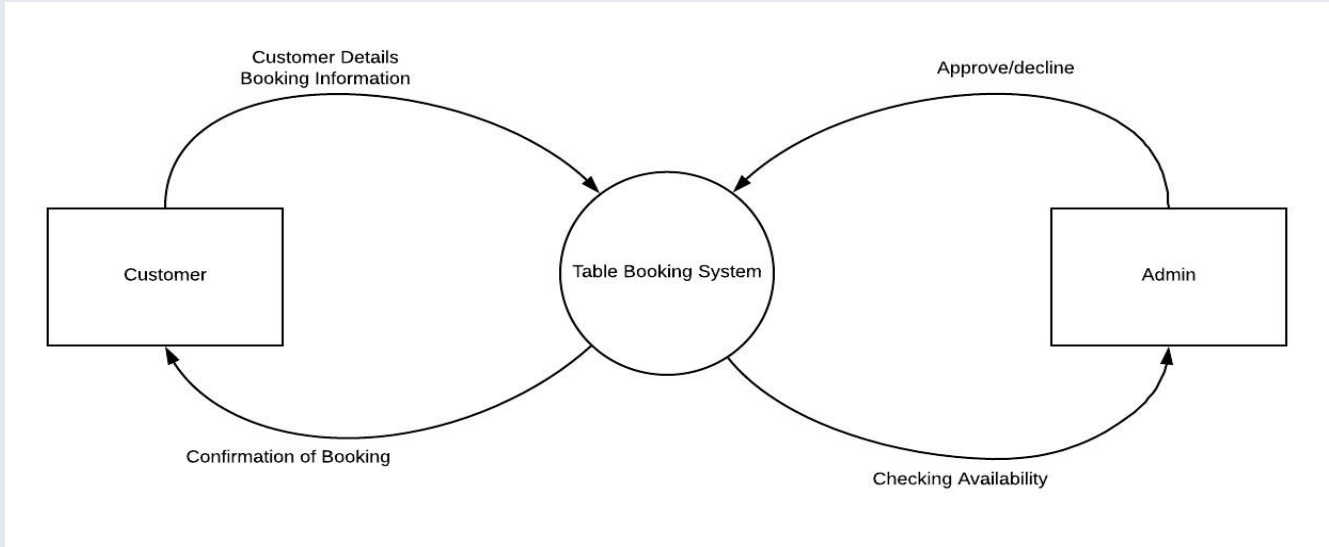


Fig:1. Context diagram

Flow Chart

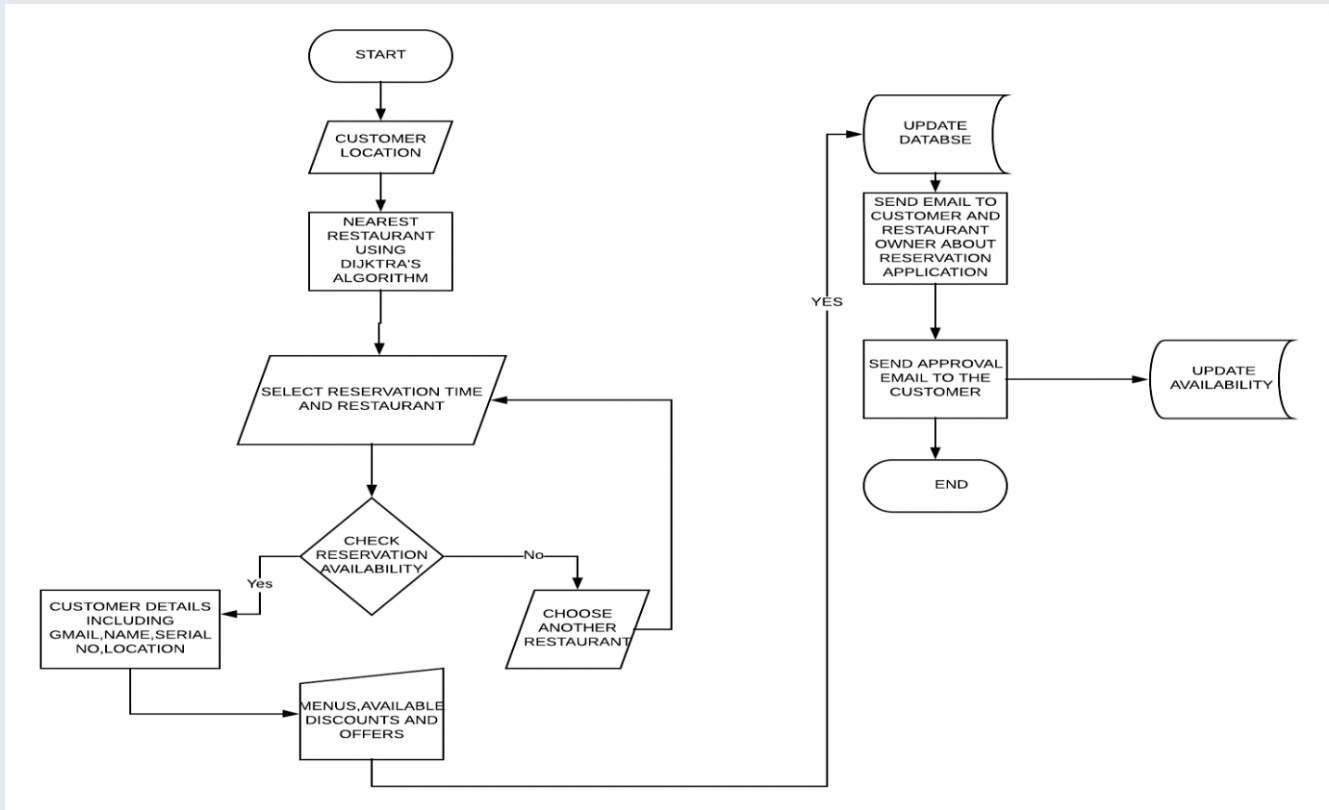


Fig:2. Flow Chart

Experimental Results

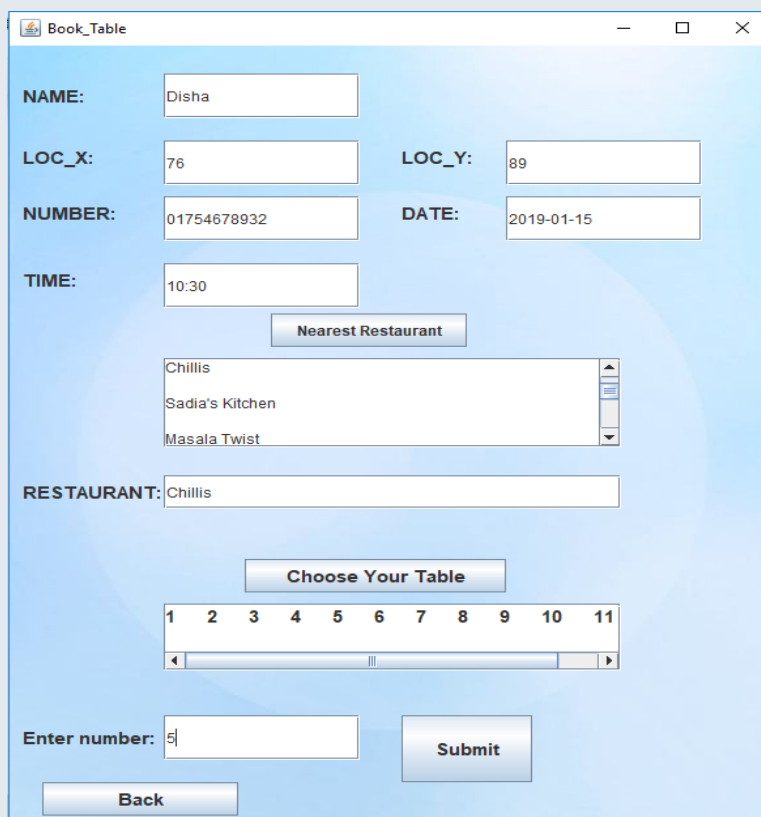


Fig:3.1. Book table

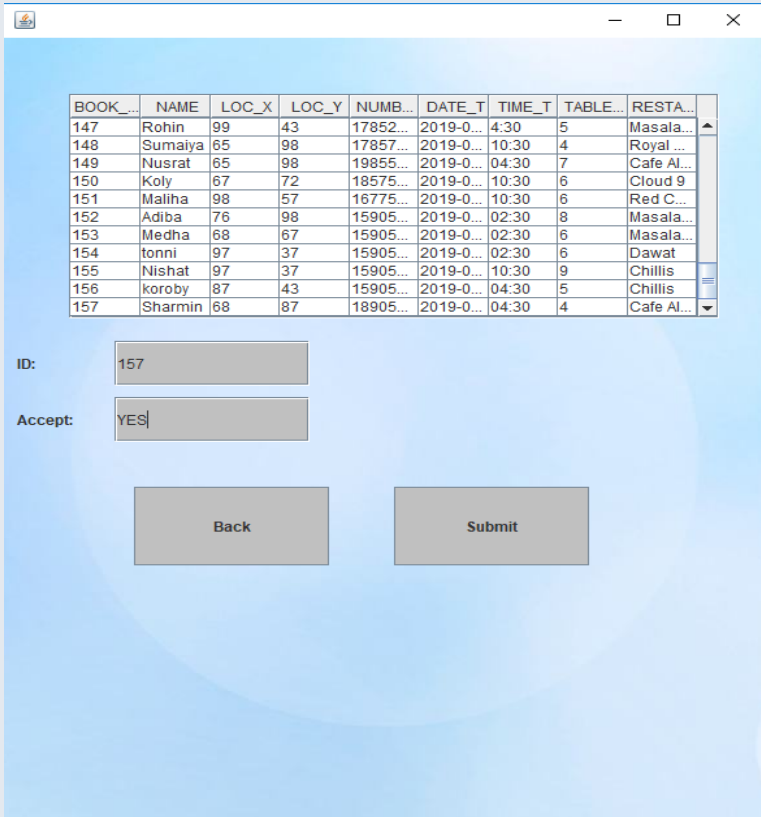


Fig:3.2. View booking

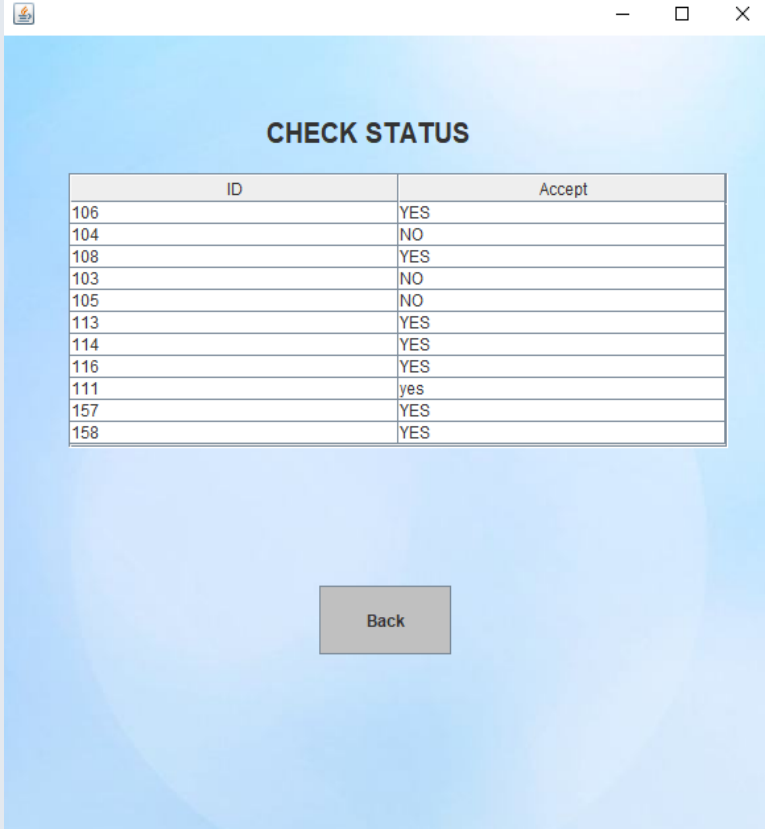


Fig:3.3. Check status

Outcomes

- 01.Using this application the user will be able to save their time and it will lessen their physical effort as they will be able to preorder for booking a table.
02. It will suggest them the nearest restaurant and by checking status they will be able to know the availability of a table in the chosen restaurant.
03. This system will help both the admin and user to manage an online restaurant table booking system.

Conclusion

- 01.On different occasion, people have to suffer because of the unavailability of the slot in the restaurant. So we've tried to lessen the sufferings of people by building up a system which allows a user to apply for booking a table in their nearest restaurant.
02. This system was built with the help of a database system and Dijkstra's algorithm so that the user can choose the nearest one.
03. After analyzing the survey result it can be said that the system was enough user-friendly.

Future Work

We've implemented this system for a small area as an experiment. In future, we'll try to provide it for larger area and then the system will be more useful as we'll implement this system such a way so that it will input the only location from the user instead of the co-ordinate of their location.

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