JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY, Noida

Department of CSE & IT



Bachelor of Technology, \_4\_Semester

Algorithm and Problem Solving Project

2

Submitted To

Submitted By:

**Pradhuman Gupta (17103301) -B8**

**Ishan Jain (17103272) – B7**

**Harshit Singhal (17103300) – B8**

**Adhyan Chambra ((1710 ) -B7**

**Topic** :- Taxi Automation Scheduling System using Adaptive

Real Time Shortest Path Algorithm involving women safety feature.

**Introduction** :-

Taxi Automation Scheduling System using Adaptive

Real Time Shortest Path Algorithm Abstract—The taxi automation system involves assigning cab to customers waiting at different areas. A taxi automation system currently in use by a major cab service provider separates the city (in which the system operates) into regional areas. Each area has fixed assigned adjacent areas hand-coded by skilled person. When a local area does not have spare cabs, the system chooses an adjacent area to find. However, such fixed, hand-coded adjacency of areas cannot be a discreet indicator

because it does not take into consideration cyclic changes in traffic patterns and road structure. This causes dispatch officials to limit the system by manually compulsory movement on taxis. The proposed system effectively modifies the closeness of dispatch areas. The proposed technique will decrease the total waiting time due to calculation of total waiting time includes allotted taxi with spare taxis, is less in ratio with the present system and increases taxi performance in comparison with results of the duplication without self-organization.

**Project Overview :-**

This paper presents an algorithm to calculate and allot cab using real time variables and to reduce ETA(effective time of arrival) significantly.This algorithm uses real time variables such as distance,number of turns,road condition,cab condition, etc.The program also allocate the driver according to the user’s preference of gender to provide women safety and a comfortable ride.

**Major Data Structures and algorithms used :-**

-Priority queues

-Modified Dijkstra’s algorithm

-Haversine formula

-File handling

-Graphs