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TRANSPORT MANAGEMENT SYSTEM FOR INTRA CITY TRAVEL

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ABSTRACT

Smart transport that enables the passengers to choose a vehicle comfortable for them based on the seat availability would be an integral part of smart cities in future.so the present transport system are with major disadvantages like disturbing the comfortability of the passengers, to overcome those kind of disadvantages we are designing a mobile application with proposed algorithm. An algorithm is developed to calculate the availability of the seats based on dynamic parameters .This calculation process is static for each stop of the route based on the passengers hoarding or deboarding. The proposed algorithm also provides insight information to the authorities of the transport also. The information includes the suggestion of frequency of buses. This kind of advantages are useful in providing certain informations in which the people could travel with safety and tensionless journey. The calculation for these informations are defined clearly defaultly by the updation happening in every stop.

INTRODUCTION
Overview

Smart transport that enables the passengers to choose a vehicle comfortable for them based on the seat availability would be an integral part of smart cities in future. An algorithm is developed to calculate the availability of the seats which enables the passengers to choose his/her Bus. The Algorithm takes in to account, the routes. Details of Buses, Number of Standing and Sitting Seats which are all static parameters and the dynamic parameters which are considered are last stop, Number of passengers boarded, Number of passengers boarded and Boarding point of a particular passenger and his/her route.

The proposed algorithm also provides insight information to the authorities of the transport and facilities for booking the tickets for the passengers also. The information includes the suggestion of frequency of buses. The inspiration of the proposed algorithm is the classical producer consumer problem and its solution. Number of seats getting vacant in a particular stop can be considered as number of items produced and number of passengers occupying can be considered as consumers. A new algorithm is required inorder to meet the dynamism in the given problem**.**

Objective

The main objective of the project is to design an algorithm through which. When a passenger request for an information on the details of the seat availability. Based on location of the bus which have crossed the last stop in the route it will Show the number available seats assuming that sitting seats are taken before the Standing seats and.

• To simulate the environment of booking the tickets
• To make a report that would be helpful for the authorities to stake a decision on she feasibility of the transport system

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Existing system

There are various systems that have been used for calculating the number of passenger in the public transports automatically, but there is no efficient mechanism that facilitates the Passengers to check for the availability of seats dynamically and book seats. Online booking are made to static systems such as redbus. But there is no System that facilitates it for dynamic changing environment such as local buses and Metros,

Drawbacks of Existing System

Unable to utilize the system effectively by the passengers, Lack of sophistication for the passengers. The authorities faces the great loss while they implement the static ticketing system. Admin has no knowledge about the frequency of buses they want to increase daily.

Proposed system

The proposed system overcomes the Problem with the existing system and facilitates the passengers to check for the availability of the seats and book them dynamically

Benefits of proposed system

Dynamic inputs and outputs of the passengers helps in updating the people who are requesting from the next stop. Seats can be filled till the destination point. It increases both admin and passenger satisfaction. The display of seats availability on every stop helps in booking the tickets of the passengers .It reduces the burden of the conductor. It intimates the admin about the number of passengers travelling. It helps the passengers to travel safely by avoiding the crowd. It helps in booking the tickets from the previous stop. It reduces the burden of the conductor. It intimates the admin about the number of passengers travelling. It helps the passengers to travel safely by avoiding the crowd. It helps in booking the tickets from the previous stop. It supports passengers who book ticket online and comes spontaneously to the stops.

SYSTEM SPECIFICATION
Requirement specification

The requirements specification is a technical specification of requirements for the software products. It is the first step in the requirements analysis process it lists the requirements of a particular software system including functional, performance and security requirements. The requirements also provide usage scenarios from a user, an operational and an administrative perspective. The purpose of software requirements specification is to provide a detailed overview of the software OW, its parameters and goals. This describes the project target audience and its user interface, hardware and software requirements. It defines how the client, team and audience see the project and its functionality.

Hardware requirements

- Processor : Intel core i3 2.40 GHZ
- RAM : 4GB

Software Requirements

- Operating System : Windows XP and above
- Front End : Python
- Back End SQLite
- Tool : Kivy
- Environment : Pycharm

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SYSTEM DESIGN
System architecture

The system consists of two roles,

• Admin

• Passenger

  Admin here is none other than the person who plays a role as conductor. When the ticket is booked, the number of seats availability is calculated which runs as a backend process.

  Passengers can check for the availability of the seats and book if there are any available seats from any stop.
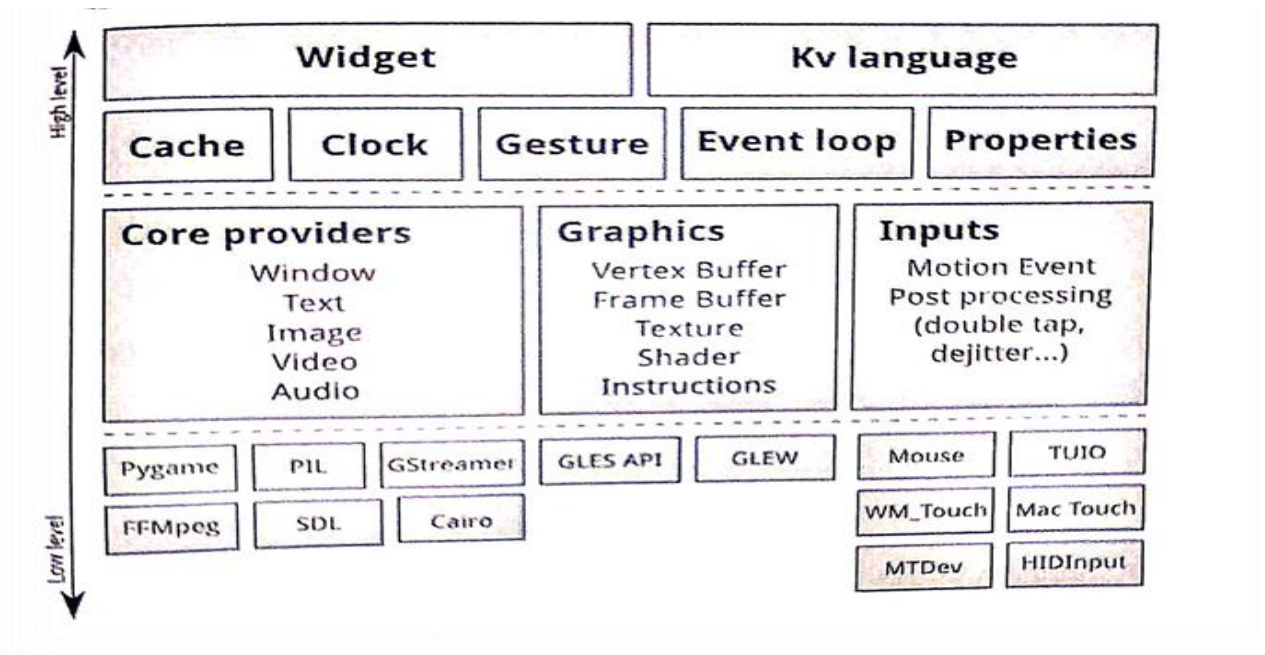

Fig 1: Kivy Architecture

Although Kivy is a Python framework, the Kivy project maintains tools to easily use the normal java APIs, for everything from vibration to sensors to sending messages through SMS or email. Other characteristics of Kivy are fresh. Fast, Flexible, Focused, Funded, And Free. The second chapter explains the related work and the third chapter explains the system in detail.

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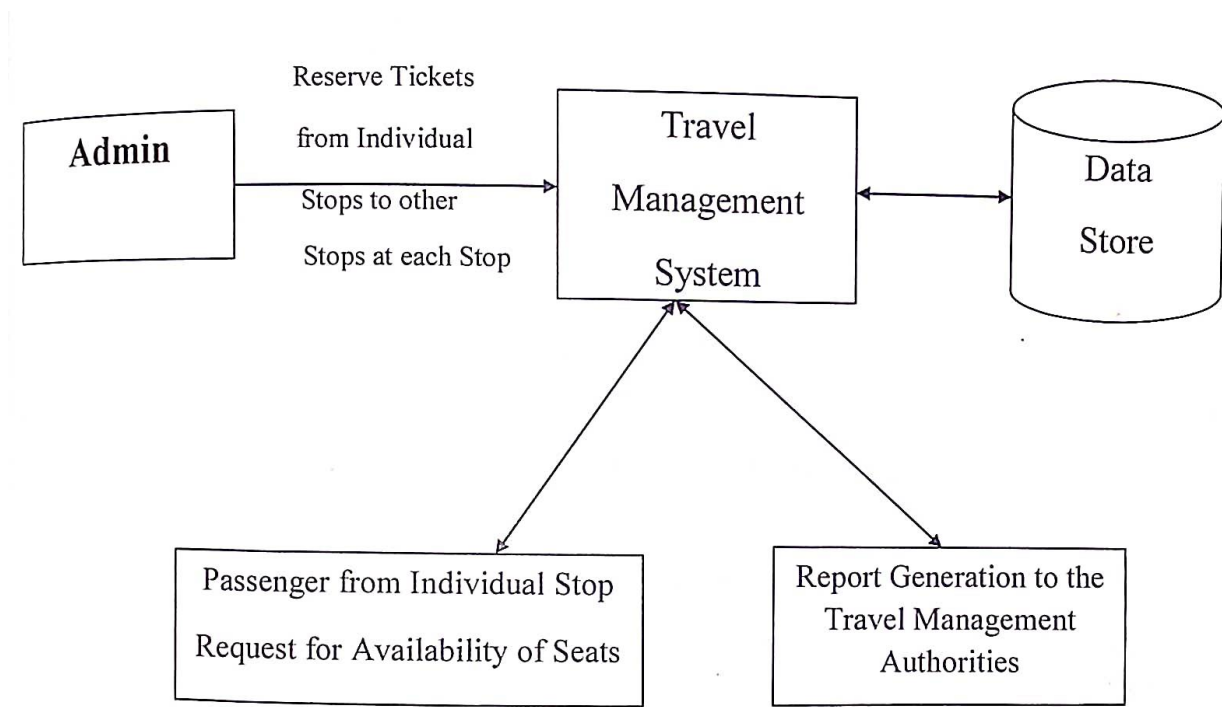www.ijetrm.com

Fig: System architecture

Step 1: The Conductor (Admin) Enters the number of tickets from individual stops to other stops in the same route.
Step 2: With the data entered by the admin the number of available standing and Sitting seats can be calculated after each boarding point.
Step 3: Passengers can select a route and bus in the specific route. With the Boarding point given by the passenger the number of available sifting and Standing seats are to be displayed.
 Step 4: The transport Management Authorities should able to generate reports, the number of passengers travelled, the number of passengers waited in each route for each bus stop.
Routes: Two (2) routes,
        From DGL to RVS
        From DGL to PSNA
 Number of Buses
         2 buses in each route
 Number of Sitting And Standing Seats:
        Fixed for each route.
         The various components of the architecture is explained in the following section as modules

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METHODOLOGY
Modules

The modules in the proposed model are as follows, 1. User interface Design e Admin e passenger 2. Seats availability calculation 3. Seats availability checking by the passengers 4, Waiting passengers Calculation

Modules Description
User Interface Design

User interface design is the process of designing the Graphical user interface for the different users of the system. Kivy is enabled with the required user interface module libraries. The required User interface is designed with it.

Seats Availability Calculation and Checking Of Availability

The following algorithm shows both the process of calculating the availability of seats as well as the checking the availability of the seats.
Number of sitting seats=ss
Number of Standing seats=sts

Function cal_tot_seats ():
For i in stops:
j=i+1
for j in stops:
not= number of tickets from i to j
totseats.append (not) ts=sum (totseats)
return (sum (totseats))

function cal_sittandstan_seats():
ts=cal_tot_seats
if(totseats>sittingseats):
sittingseats=ss
standingseats-ts-sittingseats
else
sittingseats totalseats
standingseats=0
ss-ss-sittingseats
sts=sts-standingseats

function check_availabilty (stopno):
ts= cal_sittandstan_seats ()
ts=ts-no.of seats deboarded in stopno

The algorithm can be explained with the following example trip. Consider a bus with sitting seats =50 and Standing seats-10

The route taken is from Bus stand to N.S Nagar, the stops in the path are Government Hospital, St. Joseph

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Hospital, M.V.M Nagar, Beschi College, Oil mill,
N.S nagar

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Stop 1 Busstand
Busstand -Government Hospital -12
Busstand - St. Joseph Hospital-11
Busstand-M.V.M Nagar-0
Busstand-Beschi college-12
Busstand- Oil mill-16
Busstand-N.S nagar-7
Total number of seats = 58
Since the total number of tickets is greater than the number of sitting seats, number of sitting seats is kept as it is
Sitting seats=50
Standing seats totalseats-sitting seats -> 58-50-8

Stop 2 Government Hospital
Total number of seats after deboarding Busstand -Government Hospital -12 passengers is 46
Government hospital - St. Joseph Hospital-0
Government hospital -M.V.M Nagar-0
Government hospital -Beschi college-3
Government hospital - Oil mill-2 Government hospital - N.S nagar-1
Now the total number of seats= 52
Again the process is repeated for every stop.
The availability of the seats can also be retrieved from the passenger side with the same calculation given the bus stop number.

Waiting passengers Calculation
When the number of requests received from a particular bus stop is higher than the number of available seats then there is a set of passengers who could not be able to board in the bus. Calculating this waiting passengers would be of great use to the authorities to understand the scenario and decide upon the frequency of
buses to ply.

CONCLUSION
This app will give the location of buses at various position, says number of seats available by updating the dynamic inputs. This app will modernize transport system. Private buses or private companies having their own transport may implement this easily, even government buses can implement with little effort using identification of buses with identification of bus route number. Around 1.82 crore commuters use the service on a daily basis. So this is a must to make their travel easy. This will be cost effective and definitely feasible. This helps the passengers to travel in sophisticated way by avoiding the crowd on day today life. This app helps in booking the tickets from the previous stop of the buses they searching for.
The objective of designing a mechanism to calculate the availability of the seats and the checking the availability of the seats is made. It has been made with the assumption of a presence of advanced public transport system. The algorithm suits for such a system.

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