TRANSFORMING COLLEGE COMMUTE WITH SAFE AND EFFICIENT E-RICKSHAWS

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AGENDA

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Primary goals
Solution
Algorithm and code
planning for launch
Safety measures
Revenue model
Summary

INTRODUCTION

E-Rickshaws are an environment friendly mode of transportation, which makes them very desirable. However, these are mostly unorganized and that decreases their efficiency. Often, safety rules are also violated in return for higher compensation, which is understandable, but we believe we can offer an alternative which will increase both their income and make them customer friendly.

SYSTEM

EXISTING SYSTEM

- UNORGANISED
- LESS EFFICIENT
- SAFETY ISSUE
- COMMUNICATION PROBLEM

THIS SYSTEM

- ORGANISED
- PRETTY EFFICENT
- NO SAFETY ISSUE
- EASY COMMUNICATION

PRIMARY GOALS

1. Establishing a chain of command.
2. Increasing transparency and efficiency.
3. Safety and Convenience.
4. Technology Development.
5. Sustainability and Expansion.

OUR SOLUTION

Step 1: **Customer Requests**: Customers initiate a request for an e-rickshaw using a mobile app.

Step 2: **Input Group Details**: Customers specify the number of people in their group (1 to 4), the pickup location (e.g., metro station), the destination (e.g., college), and the desired pickup time (e.g., 10 am).

Step 3: **Group Assignment**: The algorithm groups customers into e-rickshaws based on the following criteria:

- Number of people in the group.
- Destination proximity (customers with the same destination are prioritized).
- Available e-rickshaws and their capacities.

Step 4: **Route Optimization**: The algorithm optimizes the route for each e-rickshaw to ensure timely pickups and drop-offs for all groups in the same vehicle. It considers factors like traffic conditions and road closures.

OUR SOLUTION

Step 5: **Customer Notifications**: Customers receive real-time updates on the estimated arrival time and vehicle details.

Step 6: **Service Provider Management**: The algorithm assigns the optimized routes to e-rickshaw operators and ensures they are aware of the scheduled pickups.

Step 7: **Customer Confirmation**: Customers confirm their ride reservations, including the number of passengers, pickup time, and fare details.

Step 8: **Real-time Tracking**: Customers can track their assigned e-rickshaws in real-time on the mobile app.

Step 9: **Dynamic Adjustments**: The algorithm makes dynamic adjustments based on real-time factors, like traffic changes or new ride requests, to optimize routes and minimize delays.

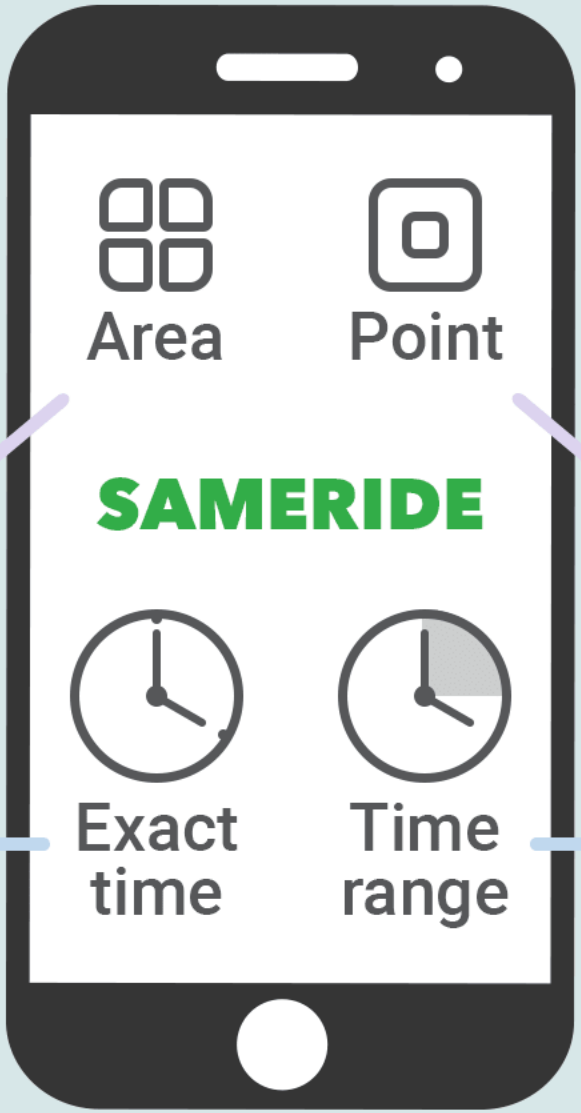
DRIVER

RIDER

Add offer / Accept request

Indicate area for pick-up location

Set exact pick-up time



Add request / Join offer

Set exact pick-up location

Indicate pick-up time range

OUR SOLUTION

Step 10: **Arrival and Drop-off**: E-rickshaws arrive at the scheduled pickup location at the specified time and drop off passengers at their respective destinations.

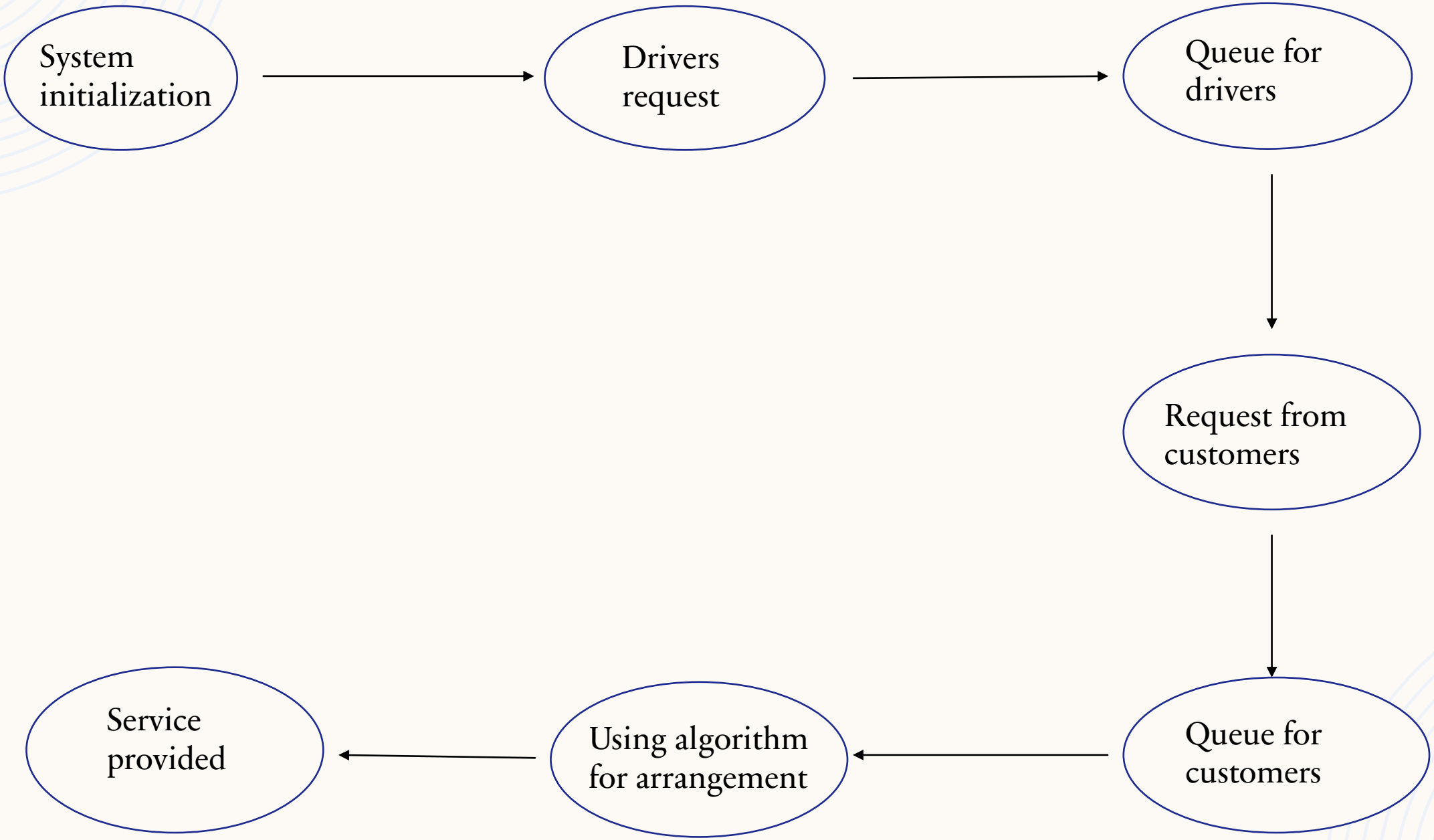
Step 11: **Payment and Feedback**: Customers make payments through the app, and they can provide feedback on the service. Payment can be made based on the group size and distance traveled.

ALGORITHM

Step 1: Input from drivers are pushed in a queue.
Step 2: Input from customers are pushed in a different queue.
Step 3: We make a function that inputs the number of persons "m" and fill a queue with persons numbered from 1 to "m." Then, we input the number of buses "n" and simulate each bus picking up the first 5 persons from the queue. Any remaining persons will wait for the next set of buses.
Step 4: Now customers are assigned to their specific drivers.
Step 5: The journey begins.

CODE

```cpp
#include <iostream>
#include <queue>

using namespace std;

int main() {
    queue<int> busQueue; // Queue to represent the persons waiting for the bus
    int numberOfPersons = 0;

    // Input the number of persons
    cout << "Enter the number of persons (m): ";
    cin >> numberOfPersons;

    // Fill the queue with persons
    for (int i = 1; i <= numberOfPersons; i++) {
        busQueue.push(i);
    }

    int numberOfBuses = 0;
    int personsPerBus = 5;

    // Input the number of buses
    cout << "Enter the number of buses (n): ";
    cin >> numberOfBuses;

    for (int i = 1; i <= numberOfBuses; i++) {
        cout << "Bus " << i << " picks up the following persons: ";
        for (int j = 0; j < personsPerBus && !busQueue.empty(); j++) {
            cout << busQueue.front() << " ";
            busQueue.pop();
        }
        cout << endl;
    }

    // Any remaining persons
    if (!busQueue.empty()) {
        cout << "Remaining persons waiting for the next set of buses: ";
        while (!busQueue.empty()) {
            cout << busQueue.front() << " ";
            busQueue.pop();
        }
        cout << endl;
    }

    return 0;
}
```


System initialization
Drivers request
Queue for drivers
Request from customers
Queue for customers
Using algorithm for arrangement
Service provided

PLAN FOR PRODUCT LAUNCH

PLANNING

Synergize scalable e-commerce

MARKETING

Disseminate standardized metrics

DESIGN

Coordinate e-business applications

STRATEGY

Foster holistically superior methodologies

LAUNCH

Deploy strategic networks with compelling e-business needs

SAFETY MEASURE

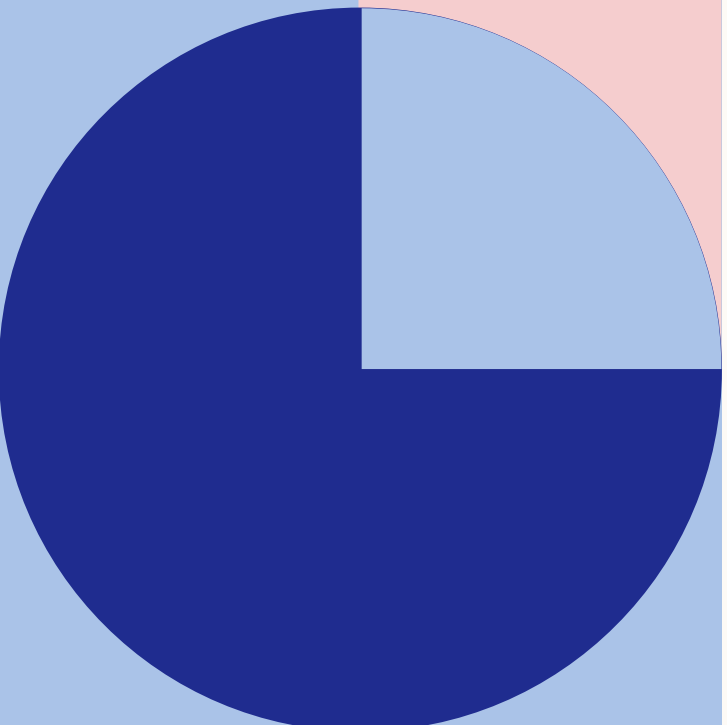
- The program will be integrated with features such that any accidents or any mishappening will be reported to the nearest police station and ambulance will be called .
- The Application will have a report button to avoid any kind of misfortune.

REVENUE MODEL

1. **Commission from E-Rickshaw Operators**: Charge e-rickshaw operators a commission for each ride booked through your platform. This commission can be a percentage of the ride fare, such as 10-15%. Advantages: Provides a direct source of revenue tied to the number of rides facilitated.

2. **Subscription Fees**: Offer subscription plans to e-rickshaw operators for premium services, including enhanced visibility on your platform, priority dispatch, or access to data analytics. Advantages: Predictable monthly income and encourages operators to use your service.

3. **Advertising and Promotions**: Partner with local businesses to display ads or promotions within the e-rickshaws or on your mobile app. Advantages: Additional revenue from advertising and potential to provide discounts to users, attracting more customers.



REVENUE MODEL

4. **Peak Hour Pricing**: Implement dynamic pricing during peak hours or high-demand periods, where users pay slightly higher fares. - Advantages: Maximizes revenue during busy times and helps balance supply and demand.

5. **Data Analytics Services**: - Offer e-rickshaw operators access to valuable data analytics on ride patterns, user preferences, and traffic conditions for a fee. - Advantages: Provides an additional revenue stream and helps operators optimize their services.

6. **Loyalty Programs**:- Introduce a loyalty program for frequent users, where they earn points or discounts for using your service regularly. - Advantages: Encourages customer retention and repeat business

SUMMARY

Thus we have developed a code-based solution to resolve issues stemming from miscommunication and disorganization in transportation. This solution streamlines the process, enhancing efficiency and clarity in coordinating transportation logistics, with best safety measures,ultimately mitigating problems and improving overall transportation management.