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# City Bus Route Recommended System based on QR Code Approach

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**ABSTRACT:** The aim of this paper is to automate the process of generating and managing bus details for the bus route. The applications uses QR codes to store the bus details, including bus route, From, To Details. Admin only able to add and update the details about the bus. Users can scan the QR code using a mobile device or a QR code scanner to retrieve the bus details. Bus route generator is a web-based technology that will manage the details of the bus and bus route which is generated by administrative. This project is helpful to bus administration by reducing the paperwork, time consumption and makes the process of getting bus routes as simple and fast. User just scans the QR code and gets the bus routes easily. Overall, the “City Bus Route Recommendation System” project simplifies the process of managing bus details for the bus management and enhances the overall efficiency and convenience of accessing bus information for both passengers and bus staff.

**KEYWORDS:** Dall-E, audio, emotion intelligence, Transformers, hyper-parameters

## I. INTRODUCTION

A bus information system (BIS) provides a variety of useful information, such as an efficient bus path that brings the user from the starting bus stop to the destination bus stop, the current positions of buses that are approaching the designated bus stop, points of interest around the designated bus stop, and so on. Among the information types that BISs provide, an efficient bus path that gets the user to the place the user wants to go is the most valuable information to a traveler who is visiting a strange town. In this paper, we survey algorithms that find efficient bus paths, and design a new algorithm that mitigates the shortcomings of the existing algorithms. Then, we developed a bus travel path recommendation system implementing the algorithm on real bus data for a small city. The recommendation system is a client/server system. The client is a mobile app, whereas the server is a personal desktop computer. The client accepts a starting bus stop and a destination bus stop as user input. If the inputs are valid bus stops, then the app sends them to the server. The server receives the user input, creates a distance matrix, finds the shortest path, finds the bus routes coinciding with the shortest path, adjusts the bus routes, and sends the adjusted bus routes to the client. The client receives the bus routes and displays them on the user interface.

## II. RELATED WORKS

Bojan [4] proposed an intelligent transportation system consisting of three components: the server system, the monitoring system, and the display system. A sensor system receives data from a global positioning system (GPS) and from near field communication (NFC), temperature, and humidity sensors. The monitoring system extracts meaningful information from the raw data collected from the sensor system and provides it to the bus driver. The display system shows bus and travel-related information to commuters at the bus stop. Adachi [5] proposed a wireless sensor network with which the bus information system can provide the present bus location and estimated bus arrival times to users. Bus nodes, bus stop nodes, router nodes, and concentrators are parts of the network. Xu [6] surveyed GPS, remote sensing (RS), and geographic information system (GIS) techniques and proposed an idea to utilize them all in order to represent the real-time status of each bus and bus arrival time on maps. John [7] introduced a smart public transport system consisting of bus modules equipped with a GPS receiver, digital speedometer, telecommunications modem and other server modules, bus stop modules and client apps. This system provides information to users about the current locations of the buses approaching the stop. Kim [8] introduced a security-augmenting scheme for a bus information system. Lin. [9] proposed using a genetic algorithm to find the shortest driving time with diverse scenarios of real traffic conditions and varying vehicle speeds. Wang and Zhang [10] proposed a two-step approach to vehicle detection



for intelligent transportation systems

### III. PROPOSED METHODOLOGY

The proposed system is over come all drawbacks of existing system. In our project we are going to implement a bus route generator using QR code. In this system users can view the bus route details immediately. In this system is helpful to bus administration by reducing the paperwork, time consumption and makes the process of getting bus route and also get information about the as simple and fast.

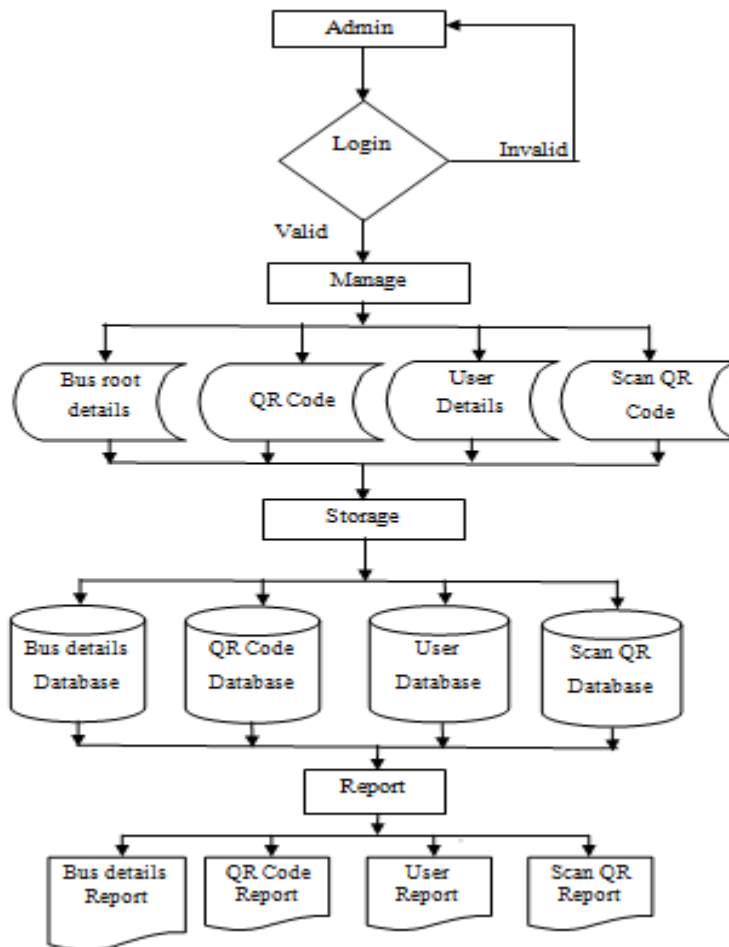


Fig-1 System Architecture

We implement a system called a bus travel path recommendation system (BTPR) that accepts a pair of bus stops (starting and destination) and returns the shortest path between them. The BTPR is a part of the bus information system described in Figure 4. There are two kinds of users: requesters and uploader. An uploader is a bus passenger or a driver in a running bus that periodically sends his current location to the server. A requester is a user who is waiting for a bus. Our BTPR provides the shortest path to the requester. In addition to the shortest path, the BIS provides other information, such as the current locations of the buses approaching a designated bus stop, points of interest around a bus stop, the route of a given bus, and so on

### IV. RESULT & DISCUSSION

The proposed system is a web oriented system and hence it does not provide any reports. The output results are viewed in the web pages itself. Outputs from the computer system are required primarily to communicate the result of processing to users. They are also used to override a permanent copy of the results for later consultation. The output reports and input documents should be documented in terms of data content and approximate layout; it is not





necessary to define the methods of presentation. It is possible to work back for the output data items are derived by calculations or by logical deduction.

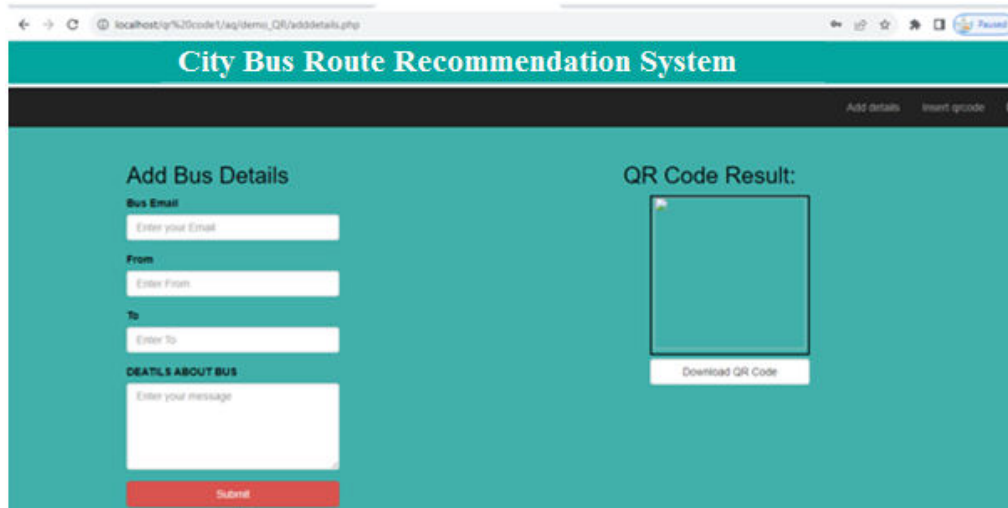


Fig-2 user validation form



Fig-3 QR Code generator

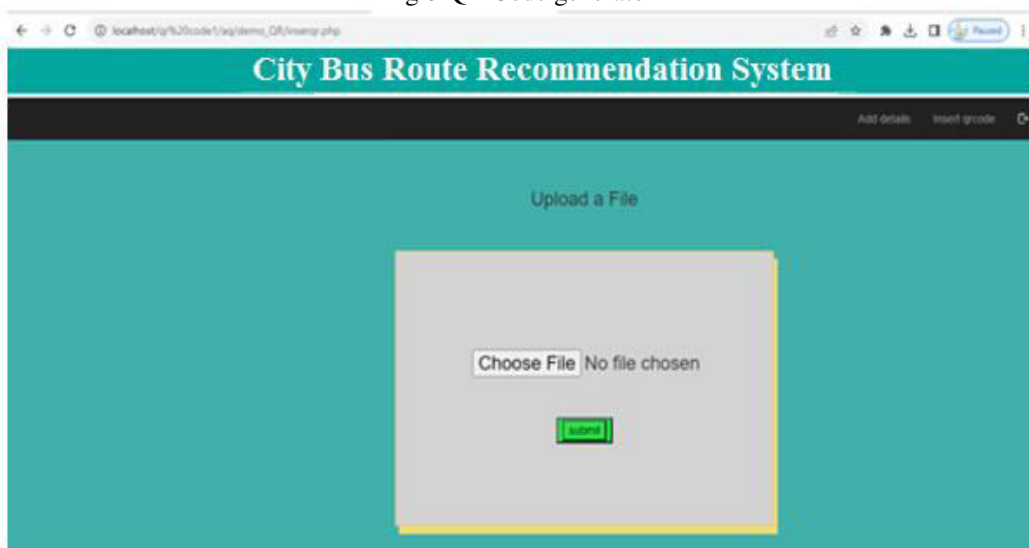


Fig-4 Insert QR Code generator

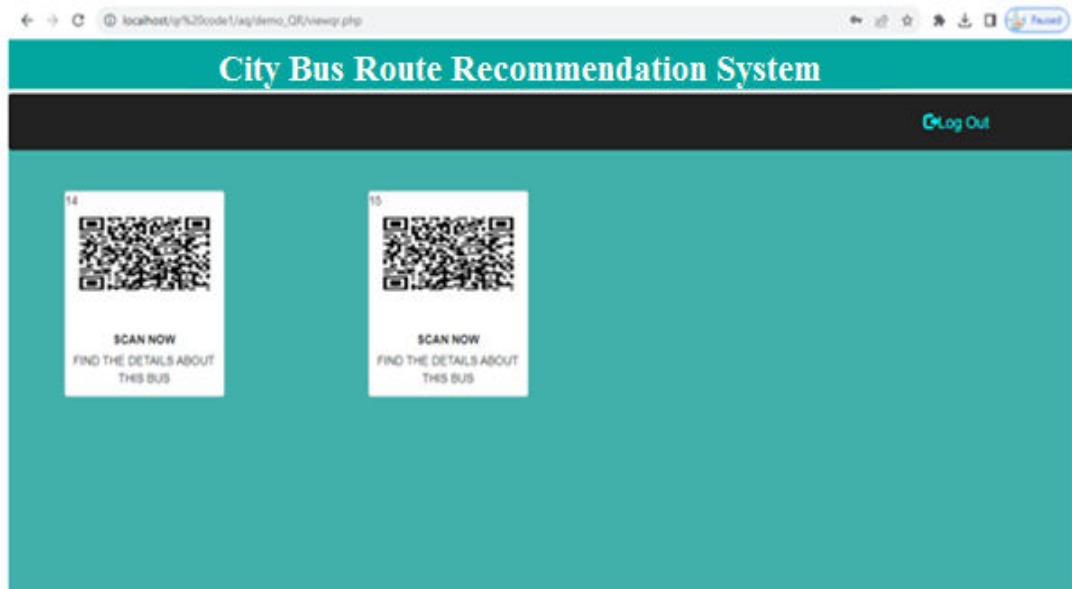


Fig-5 QR Code based recommended comments

#### IV. CONCLUSION

The application works according to the restrictions provided in their respective browsers. The application satisfies the Admin. The speed of the transactions become more enough now. The website creation is the web designing project created for displaying the details about the web portal using the coding languages like HTML & CSS for designing. The interface are so designed and channel the admin can never make any mistake while using the application, till the time either they save or cancel the current operation all other operations are blocked. This project has been successfully developed and interpreted and system was developed according to the admin requirements. The system produces accurate results and it also reduces a lot of overheads, which the manual system faced. The information requirements may still increase.

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