Digitalizing the tickets and Crowd Management at Public Bus Stands

A PROJECT REPORT

Submitted by,

Ms. Parinitha M	**20211CSE0271**
Ms. Chandana S	**20211CSE0268**
Ms. Nethra K	**20211CSE0334**
Ms. Yukthi V	**20211CSE0272**

Under the guidance of,

Dr. Ramesh Sengodan

in partial fulfillment for the award of the degree

of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

At

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY

BENGALURU

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SCHOOL OF COMPUTER SCIENCE ENGINEERING

CERTIFICATE

This is to certify that the Project report **"Digitalizing the tickets and Crowd Management at Public Bus Stands"** being submitted by Parinitha M, Chandana S, Nethra K, and Yukthi V bearing roll number(s) 20211CSE0271, 20211CSE0268, 20211CSE0334, and 20211CSE0272 in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering is a Bonafide work carried out under my supervision.

Dr. Ramesh Sengodan
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16/1/25

Dr. Asif Mohamed H B
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PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE ENGINEERING

DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **Digitalizing the tickets and Crowd Management at Public Bus Stands** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering**, is a record of our own investigations carried under the guidance of **Dr. Ramesh Sengodan, Professor, School of Computer Science Engineering & Information Science, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

Parinitha M	20211CSE0271	Parinitha M
Chandana S	20211CSE0268	Chandana S
Nethra K	20211CSE0334	Nethra K
Yukthi V	20211CSE0272	Yukthi V.

ABSTRACT

This project aims to enhance the efficiency of public transportation systems by developing an Android application which is based on digitalization of the ticketing system and crowd management at the bus stand that improves the efficiency of the public transport system. In this application, user-driver-admin are the three layers, with separate interfaces. It enables users to interact well, drivers to drive smoothly, and administrators to manage resources properly.

The user can book the ticket, trace the exact position of the bus in real time using Firebase, even upload images of bus stands for crowd density analysis. Driver's interface allows the option for location sharing in real time and scanning of ticket for safe and quick entry. Admin interface controls drivers' credentials and also handling alerts on crowd management.

The implemented application features an integrated "Crowd Detection System", using Flask coupled with YOLOv8 for object detection. Every picture uploaded by users is supposed to get processed to account for people inside it by sending an alert to the admins on any detection in cases of overpopulation. Pretty modular in its crowd monitoring way, public safety, resource allocations, among other uses. The project, therefore, using a scalable solution to modernize the public transportation infrastructure of convenience for safety among all stakeholders, seeks to make the ticketing process less cumbersome, maintain real-time tracking, and allow for proactive crowd management.