

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
"Jnana Sangama", Belagavi-560014, Karnataka



**CGV MINI PROJECT REPORT**  
**ON**

**"Traffic Control Simulation"**

**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE**  
**CGV LAB**

**BACHELOR OF ENGINEERING**  
**IN**  
**COMPUTER SCIENCE & ENGINEERING**

**Submitted By**

**M P SHISHIR[1SV20CS019]**

**Under the guidance of**

**Mr.Renukaradhya P.C B.E., M.Tech.,**  
Assistant Professor, Dept. of CSE.



**SHRIDEVI**  
**EDUCATION**

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(Affiliated To Visvesvaraya Technological University)  
Sira Road, Tumakuru – 572106, Karnataka.

2022-23



Sri Shridevi Charitable Trust (R.)

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### CERTIFICATE

This is to certify that, Computer Graphics and Visualization Mini-Project of entitled "Traffic Control Simulation" has been successfully carried out by M P SHISHIR[1SV20CS019] in partial fulfillment for the CGV Lab of Bachelor of Engineering in Computer Science & Engineering of the Visvesvaraya Technological University, Belagavi during the academic year 2022-23. It is certified that all the corrections/suggestions indicated for internal assessments have been incorporated in the report. The Mini- Project report has been approved as it certifies the academic requirements in respect of Mini-Project work prescribed for the Bachelor of Engineering Degree.

#### Signature of Guide

**Mr. Renukaradhya P.C** B.E., M.Tech.,  
Assistant Professor,  
Dept. of CSE,  
SIET, Tumakuru.

PRINCIPAL  
SIET, TUMKUR.

#### Signature of H.O.D

**Prof. Dr. Basavesha D** M.Tech, Phd  
Associate Professor & HOD  
..... Dept. of CSE,  
SIET, Tumakuru.

#### Name of the Examiners

1. G. Rishit L

2. Hareesh

#### Signature with date

15/11/23

15/11



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**DECLARATION**

**M P SHISHIR**  
I, ~~MOHAMMED NABIL~~ <sup>19</sup> [1SV20CS019], student of VI semester B.E in Computer Science & Engineering, at Shridevi Institute of Engineering & Technology, Tumakuru, hereby declare that, the Mini-Project work entitled "Traffic Control Simulation", embodies the report of our Mini-Project work carried out under the guidance of Mr. Renukaradhya P.C, Assistant Professor, Department of CSE, SIET, Tumakuru as partial fulfillment of requirements for the CGV Lab in Bachelor of Engineering in Computer Science & Engineering of Visvesvaraya Technological University, Belagavi, during the academic year 2022-23. The Mini-Project has been approved as it satisfies the academic requirements in respect to the Mini-Project work.

*Nenukaradhya P.C*  
PRINCIPAL  
SIET, TUMKUR.

Place: Tumakuru

Date: 04.10.23

Student Name & Signature

**M P SHISHIR[1SV20CS019]**

## ABSTRACT:

Traffic light simulation plays a crucial role in enhancing road safety and optimizing traffic flow. Computer graphics techniques provide a powerful framework for developing realistic and interactive simulations that accurately represent the behavior of traffic lights and their impact on vehicle movement. This abstract presents a computer graphics-based approach to traffic light simulation, focusing on the key components and algorithms involved in creating an immersive and visually appealing virtual environment.

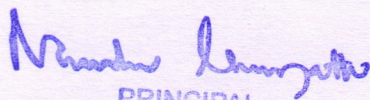
The simulation begins with the modeling of various traffic elements, including vehicles, pedestrians, and the traffic light infrastructure. Realistic vehicle behaviors such as acceleration, deceleration, and lane-changing are implemented using physics-based algorithms. The traffic light system is modeled as an intelligent control system that regulates the flow of vehicles and pedestrians at intersections. Different traffic scenarios and timing patterns are simulated to analyze the impact on traffic congestion and overall efficiency.

Overall, the computer graphics-based traffic light simulation presented in this abstract offers a powerful tool for traffic engineers, urban planners, and researchers to study and improve the performance of traffic light systems. By combining realistic modeling, interactive visualization, and extensive parameter control, the simulation facilitates the development and evaluation of effective traffic management strategies for safer and more efficient transportation networks.

### **Technology used**

Graphics Software: various software packages are available for creating computer graphics, including 3D modeling and animation software,

Computer Hardware: A powerful computer with a good graphics card and sufficient storage capacity is required to run graphics software, C++ and python languages are used in graphics.

  
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