

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

RAHUL KUMBAR [1SV20CS035]

Under the guidance of

Mr. Renukaradhya P.C B.E., M.Tech.,

Assistant Professor, Dept. of CSE.

Nandhu Kumar
PRINCIPAL
S.E.T. TUMKUR.



Department of Computer Science and Engineering

SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Affiliated To Visvesvaraya Technological University)

Sira Road, Tumakuru - 572106, Karnataka.

2022-23



Sri Shridevi Charitable Trust (R.)

SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

(Recognised by Govt. of Karnataka. Affiliated to VTU, Belagavi and Approved by AICTE, New Delhi)

Sira Road, Tumakuru - 572 106, Karnataka.

Phone: 0816-2212629 | Fax: 0816-2212628 | Email: info@shrideviengineering.org | Web: http://www.shrideviengineering.org



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 Rahul Kumbar [ISV20CS035], 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.

2.

Signature with date



Sri Shridevi Charitable Trust (R.)
SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

(Recognised by Govt. of Karnataka, Affiliated to VTU, Belagavi and Approved by AICTE, New Delhi)

Sira Road, Tumakuru - 572 106. Karnataka.

Phone 0816-2212629 | Fax: 0816-2212628 | Email: info@shrideviengineering.org | Web: http: www.shrideviengineering.org



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

I, Rahul Kumbar [1SV20CS035], 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.

Place: Tumakuru

Date: 04/07/23

Student Name & Signature

RAHUL KUMBAR
[1SV20CS035]

PRINCIPAL
SIET, TUMKUR.

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.

Nandhu Kumar

PRINCIPAL
S.I.T. TUMKUR.