VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belagavi-560014, Karnataka

CGV MINI PROJECT REPORT

ON

"Smart Village Simulation"

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE CGV LAB

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE & ENGINEERING

Submitted By

Pushpraj

(1SV20CS034)

Under the guidance of

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

Assistant Professor, Dept. of CSE.

PRINCIPAL
SIET. TUMKUR.

SHRIDEVI EDUCATION

Department of Computer Science and Engineering

SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Affiliated To Visvesvaraya Technological University)

Sira Road, Tumakuru – 572106, Karnataka.

2022-23

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that, Computer Graphics and Visualization Mini-Project of entitled "Smart Village" has been successfully carried out by Pushpraj [1SV20CS034]. 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,
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5/7/23

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Signature of H.O.D

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

Name of the Examiners	Signature with date
1	.....
2 Renukaradhya P. C	.....

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DECLARATION

I, Pushpraj [1SV20CS034], 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 **"Smart Village"**, 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
PUSHPRAJ
[1SV20CS034]

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ABSTRACT:

The Smart Village project is an interactive computer graphics visualization developed using OpenGL and Computer Generated Visuals (CGV). The project aims to create a virtual village environment where a windmill is rotating, and clouds are passing by, creating a dynamic and realistic atmosphere.The primary focus of the project is to showcase the potential of computer graphics in simulating natural phenomena and creating immersive environments. By utilizing OpenGL, a widely-used graphics library, and CGV techniques, the Smart Village project delivers a visually engaging and interactive experience.

The central element of the project is a detailed 3D model of a windmill, complete with rotating blades.The windmill is designed to mimic the real-world behavior of wind-driven mechanisms, enhancing the authenticity of the virtual environment. Users can
observe the windmill's rotation and study its intricated details up close.

To further enhance the realism, the project incorporates dynamic cloud animations. The clouds move across the virtual sky, casting shadows on the ground and adding a
sense of depth to the scene. The cloud movements are carefully synchronized with the windmill's rotation, creating a harmonious visual composition.In addition to the windmill and clouds, the Smart Village project includes other elements typically found
in a rural setting, such as trees, houses, and a landscape. These elements are rendered with attention to detail,utilizing textures, lighting, and shading techniques to provide a visually appealing and immersive experience.

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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