

# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELGAUM-590014**



## **A Computer Graphics and Visualization Mini-Project Report**

**On**

### ***“THREE DIMENSIONAL MODEL OF SOLAR SYSTEM”***

*A Mini-project report submitted in partial fulfilment of the requirements for the award of the degree of **Bachelor of Engineering in Computer Science and Engineering** of Visvesvaraya Technological University, Belgaum.*

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**Kanakapura Road, Udayapura, Bangalore 2016-2017**



## **DAYANANDA SAGAR ACADEMY OF TECHNOLOGY AND MANAGEMENT**

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#### **CERTIFICATE**

This is to certify that the Mini-Project on Computer Graphics and Visualization work entitled “**THREE DIMENSIONAL MODEL OF SOLAR SYSTEM**” has been successfully carried out by **SRINIVAS S IYENGAR (1DT14CS096)** and **SKANDA GHATE (1DT14CS093)**, bonafide students of **Dayananda Sagar Academy of Technology and Management** in partial fulfilment of the requirements for the award of degree in **Bachelor of Computer Science and Engineering** of **Visvesvaraya Technological University, Belgaum** during academic year 2016-2017. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The mini project report has been approved as it satisfies the academic requirements in respect of project work for the said degree.

#### **GUIDES:**

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**1:**

**2:**

**Signature with Date**

## ABSTRACT

In this project, we strive to obtain a 3-Dimensional Model of the Solar System. The principle behind the working of the project is that, we use spheres to create the objects and use images for the textures. We achieve this by taking an image of .JPEG or .JPG form and use certain tools to obtain a Truevision Graphics Adapter (.tga) File. This file format is widely used for 3D model texture mapping. Resizing is done internally when this process occurs; we specify the width and the depth scaling during the conversion.

We use this file to generate textures for the objects. The user-defined functions handle the image loading and displaying of the texture is obtained using API of OpenGL. We use OpenGL for rendering of the object. We achieve this by storing the textures in an array. This array contains all the textures required for rendering the model. We make use of Lighting API of OpenGL to make the model seem better. Menu list is created using the OpenGL API to display individual objects separately. The model is provided with certain operations that can be performed by the viewer, which is executed using the OpenGL API for keyboard operations. With all the data on hand, we create a 3-Dimensional Model of the Solar System.

We make use of C with OpenGL for entire coding purpose along with some features of Windows. The OpenGL Utility is a Programming Interface. We use light functions to add luster, shade and shininess to graphical objects. The toolkit supports much more functionalities like multiple window rendering, callback event driven processing using sophisticated input devices etc.

## **ACKNOWLEDGMENT**

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