**NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY**

**(AN AUTONOMOUS INSTITUTION, AFFILIATED TO VISVESVARAYA TECHNOLOGICAL UNIVERSITY,**

**BELGAUM, APPROVED BY AICTE & GOVT.OF KARNATAKA**

**COURSE PROJECT SYNOPSIS**

on

**“SEASONS”**

**Bachelor of Engineering**

**in**

**Information Science and Engineering**

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**ABSTRACT**

The OpenGL specification describes an abstract for drawing 2D and 3D graphics. The API is defined as a number of functions which may be called by the client program, alongside a number of named integer constants. The function definition are superficially similar to those of the C programming language, they are independent.

It is developed in C using OpenGL and implemented in the WINDOWS platform. The graphics package designed here provides an interface for the users for handling display and manipulation of basic picture objects. The interface is user-friendly with icons, menus.

The Mini-project ‘Season’ is going to contain the computer graphics concepts with the OpenGL functions. It is going to contain three weathers (Summer, Winter and Rainy) with live particles such as rain drops for Rainy and Snow for Winter.

The weather Summer is going to contain simple tree with a sun on the top. It also contain clouds and some trees to demonstrate the hot weather of summer. All of the above mention objects will be built using functions of OpenGL and Graphics Library Utility Kit.

The weather Winter will be an animated screen with live snow falling from above. The white snow will fall from randomly generated co-ordinates and will disappear as it touch the ground where the co-ordinates of the land will be. It is also going to contain a X-mas tree to demonstrate Christmas and a Snowman.

The weather Rainy is also going to be an animated one. There will be a live rain Droplets falling from above and disappears as it touches the ground. There is also going to be some Trees and a very green land to demonstrate greenery on rainy season.

The above mentioned Seasons are interchangeable once we run the program , the keyboard buttons can be used to change the season from one to another , for Example a user can press 'R or r' for rainy and so on. Perspective view is implemented for users to view objects as they view in real life.

The particle size like rain drops and snow size can be changed using the Keyboard buttons and the camera position can be changed so the the user experiences the zoom in and zoom out features. All of the above mention objects will be built using functions of OpenGL and Graphics Library Utility ToolKit (GLUT).

**METHODOLOGY**

The OpenGL specification describes an abstract for drawing 2D and 3D graphics. Although it is possible for the API to be implemented entirely in software, it is designed to be implemented mostly or entirely in hardware.

The API is defined as a number of functions which may be called by the client program, alongside a number of named integer constants. The function definition are superficially similar to those of the C programming language, they are independent. As such, OpenGl has many language bindings, some of the most noteworthy being the JavaScript binding WebGL(API based on OpenGL ES2.0);the C bindings WGL ,GLX, CGL; the C binding provided by iOS and the Java and C binding provided by the Android.

In addition to being language-independent, OpenGL is also platform independent. The specification says nothing on the subject of obtaining, managing an OpenGL context, leaving this as a detail of the underlying windowing system. For the same reason, OpenGL is purely concerned with the rendering, providing no APIs related to input, audio, or windowing.