

HIGHER TECHNICAL INSTITUTE  
COURSE IN COMPUTER STUDIES

DIPLOMA PROJECT  
(USER MANUAL)

Development of OpenGL Tutorial for The  
Teaching Needs of HTI Students

CS/392

AL-SELWI ANAS

JUNE 2008

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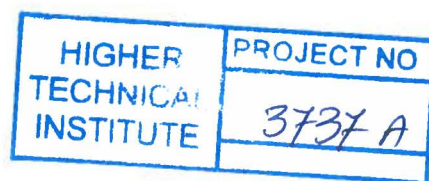
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# Development of OpenGL Tutorial for The Teaching Needs of HTI Students

## DIPLOMA REPORT SUBMITTED TO THE HIGHER TECHNICAL INSTITUTE NICOSIA CYPRUS

In partial fulfillment of the requirements for the  
award of the Diploma in Computer Studies

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**Type of Project:** Multimedia and Web Development



## Introduction

OpenGL is a graphic library to draw 2D or 3D scene which is a subject taught for third year students at the Higher Technical Institute.

Ms. Maria Theodorou, lecturer of graphics and other subjects at HTI, suggested "*Development of an OpenGL Tutorial for Teaching Needs of the HTI Students*" project which is a multimedia system for teaching OpenGL.

The aim of abovementioned project is to develop an online multimedia system as a teaching tool, with the cooperation of the graphics lecturers, in order to help HTI students to have a general look of computer graphics, OpenGL as presented in the class as well as present the subject in a friendly manner.

Since the project is suggested by the graphics lecturer, system requirements and necessary information about OpenGL already exist.

The goal is to build a user-friendly environment with a high level web site as well as to satisfy all the project requirements.

The project is developed using Macromedia Dreamwaver MX, Microsoft FrontPage, PHP, Ulead COOL 3D 3.5, Photoshop CS2, C++ and OpenGL library and is considered as Diploma project of the Academic year 2007-2008 for my graduation.

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## **1. Introducing the System**

OpenGL Tutorial website is a multimedia computer system that teach OpenGL functions implemented in C++ host language using text, pictures, animations, sound, PHP script and navigation bars.

Before you go through OpenGL Tutorial topics, it is recommended to have a basic idea of C++ language. If you do not know C++ language, the system has provided you with C++ tutorial so that you can move on to learn OpenGL API.

OpenGL is a standard specification defining a cross-platform API (Application Programming Interface), for many computer languages, for writing applications that produce 2D and 3D computer graphics. The API consists of over 250 different functions which can be used within a programming language such as C++ to draw complex three-dimensional scenes from simple primitives (points, lines, polygons, images and bitmaps).

Some OpenGL topics and functions have been presented, Primitives, Primitives Attributes, Transformations, Viewing and lighting.

### **1.1 How to Use This Manual**

This manual is written to assist you with some information about the system. You will find information how to install the system, general presentation for the system and some features implemented.