ABSTRACT

A 3D graphics-based Ferris Wheel is great for those who start learning computer graphics and visualization. The purpose of this project is to simulate the working of a Ferris Wheel. I have used OpenGL utility toolkit to implement it, which is written in C++ language.

A Ferris wheel is an amusement park ride consisting of a large vertical wheel with places for people to sit or stand spaced evenly around the outer circumference. In operation, the Ferris wheel revolves about a horizontal axis, and the riders are alternatively lifted and then lowered as they are carried around the wheel in a circle.

The Ferris Wheel has control keys which used to control the speed of rotation, clockwise & anti-clockwise movement and also change the number of riders. This project is designed in such a way that one can view it from any directions using the keyboard function.

ACKNOWLEDGEMENT

A unique opportunity like this comes very rarely. It is indeed a pleasure for me to have worked on this project. The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mention of the people whose constant encouragement and guidance has made it possible for me to complete this project.

I consider myself proud, to be part of **Global Academy of Technology** family, the institution which stood by our way in endeavors. I express my deep and sincere thanks to our Principal **Dr. N. Rana Pratap Reddy** for his support. I would be grateful to **Dr. Kavitha C,** Professor and HOD, Dept of CSE who the source of inspiration and of invaluable help in channelizing my efforts in right direction.

I wish to thank my internal guide **Mrs. Bhagyashri R Hanji**, Assistant Professor, Dept of CSE and **Mrs. Sushmitha S**, Assistant Professor, Dept Of CSE for guiding and correcting various documents of mine with attention and care. She has taken lot of pain to go through the document and make necessary corrections as and when needed.

I would like to thank the faculty members and supporting staff of the Department of CSE, GAT for providing all the support for completing the Project work. Finally, I am grateful to my parents and friends for their unconditional support and help during the course of my Project work.

ASHUTOSH RANJAN 1GA16CS033

TABLE OF CONTENTS

LIST OF TOPICS	PAGE NO
1. INTRODUCTION	1
1.1 INTRODUCTION TO COMPUTER GRAPHICS	1
1.2 INTRODUCTION TO OPENGL	2
2. REQUIREMENT SPECIFICATION	4
2.1 SOFTWARE REQUIREMENTS	4
2.2 HARDWARE REQUIREMENTS	4
3. SYSTEM DEFINITION	5
3.1 PROJECT DESCRIPTION	5
3.2 BUILT-IN FUNCTIONS	5
3.3 USER-DEFINED FUNCTIONS	6
3.4 SYSTEM ARCHITECTURE	7
4. IMPLEMENTATION	8
4.1 SOURCE CODE	8
5. TESTING AND RESULTS	17
5.1 TESTING PROCESS	17
5.2 TESTING OBJECTIVES	17
5.3 DIFFERENT TYPES OF TESTING	17
5.4 TEST CASES	18
6. SNAPSHOTS	19
CONCLUSION	23
BIBLIOGRAPHY	24

LIST OF FIGURES

Fig No.	Figure Name	Page No.
Figure 1.1	Components of Graphics Architecture and their working	02
Figure 1.2	OpenGL Library organization	03
Figure 1.3	OpenGL Order of Operations	03
Figure 3.1	System architecture of Ferris Wheel	07
Figure 5.1	Test Cases for the project	18
Figure 6.1	Console Window	19
Figure 6.1	Ferris wheel front view	20
Figure 6.1	Ferris wheel back view	20
Figure 6.1	Ferris wheel top view	21
Figure 6.1	Ferris wheel side view	21
Figure 6.1	Ferris Wheel with maximum number of Cabins	22
Figure 6.1	Ferris Wheel with minimum number of Cabins	22