History:

In the 1980s, developing software that could function with a wide range of graphics hardware was a real challenge. Software developers wrote custom interfaces and drivers for each piece of hardware. This was expensive and resulted in much duplication of effort.

By the early 1990s, SGI (Silicon Graphics, Inc**.**) was a leader in 3D graphics for workstations.

SGI considered that the IRISGL API itself was not suitable for opening due to licensing and patent issues. Also, IRISGL had API functions that were not relevant to 3D graphics. For example, it included a windowing, keyboard and mouse API, in part because it was developed before the X Window System and Sun's NEWS systems were developed.

In addition, SGI had a large number of software customers; by changing to the OpenGL API, they planned to keep their customers locked onto SGI (and IBM) hardware for a few years while market support for OpenGL matured. Meanwhile, SGI would continue to try to maintain their customers tied to SGI hardware by developing the advanced and proprietary IRIS(Open) Inventor and Iris Performer programming APIs.

As a result, SGI released the **OpenGL** standard.

OpenGL standardized access to hardware, pushed the development responsibility of hardware interface programs (sometimes called device drivers) to hardware manufacturers, and delegated windowing functions to the underlying operating system. With so many different kinds of graphics hardware, getting them all to speak the same language in this way had a remarkable impact by giving software developers a higher level platform for 3D-software development.

On the 31st July, 2006 it was announced at [SIGGRAPH](http://en.wikipedia.org/wiki/SIGGRAPH) that control of the OpenGL specification would be passed to the Khronos group.

Conclusion:

This Project on Graphics editor is a small part of application of OpenGL. OpenGL is used in various areas of graphics.

This project results include drawing of different shapes like line, triangle, rectangle, circle, polygon, horizontal and vertical arrows, star shape, ellipse etc. Some operations are also implemented on these shapes like drawing, erasing, translation, rotation, coloring, movement etc.

This project is more or similar to the paint in windows using OpenGL.

Bibliography:

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Grahics Editor with OpenGL:

Project on graphics editor Using OpenGL , a language used to render 2D and 3D graphics .

In this project mainly used c - files are following:

* Main : This is main file of this project which contains all other c files as functions. This combines all the files together.

It contains reshaping functions for shapes, display function, main function, user begin function.

* Variable: This files contains color of shapes, positions in structure. Some display files are written.
* Display: This files contains some display file for writing, reading for file.
* Draw: This is for drawing purpose. It contains basic file which contains maximum, minimum and sign function. Beside these, it also contains drawing algorithms implementation of point, line, triangle, rectangle, circle, dotted line, arrows, star, ellipse.

It also contains clipping code and joining code for combining all functions together.

Graphics Editor with OpenGL (Continued……..)

* Fill: This function contains all filling code for shapes. It includes the edge detecting, scan filling, area filling code in this function.
* Partition: It contains tool box options like shapes, eraser and color box. It also includes the code for menu bar which have new window option.
* Mouse: This function shows all the movement of tool box options with the motion of mouse cursor. Reset the shape and eraser option are also present in this function. It also contains event and text file.
* Key: This function contains all the movement of keys, their color, deciding the direction of keys by pressing the keys.

These functions are implemented in this project which help us make this graphics editor.

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Application:

Graphics Editor is used in many areas:

* Graphics Editor is a program used to draw, color, and edit pictures. You can use this like a digital sketchpad to make simple pictures and creative projects or designs to other pictures, such as those taken with your digital camera.
* Many of these drawing applications have powerful vector-editing tools that resemble the tools and features in professional-grade graphic design applications.
* For its simplicity, it rapidly became one of the most used applications in the early versions of Windows—introducing many to painting on a computer for the first time—and still has strong associations with the immediate usability of the old Windows workspace.
* The program comes with the following options in its Tool Box like

Pencil, Line, Triangle, Rectangle, Circle, Polygon, Arrow horizontal and

Vertical, color tool, eraser.

Introduction:

In computer graphics, graphics software or image editing software is a program or collection of programs that enable a person to manipulate visual images on computer.

Computer graphics can be classified in two distinct categories:

1. Raster Graphics
2. Vector Graphics

Many graphics programs focus exclusively on vector or raster graphics, but there are few that combine them in an interesting way. It is simple to convert from vector graphics to raster graphics, but going the other way is harder. Some software attempts to do this.

Here, this project on graphics editor using OpenGL is almost look like as paint in windows.

OpenGL (Open Graphics Library): is a cross language for rendering 2D and 3D graphics. The OpenGL specification describes an abstract API (Application programming Interference) for drawing 2D and 3D graphics.

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

Graphics Editor also can be used by other editing software such as Adobe Photoshop, piZap, Microsoft Publisher, Picasa and etc. Other software that can be used is animation software, video editor software such as Windows Movie Maker etc.

GRAPHICS EDITOR

USING OPENGL

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