COMPUTER GRAPHICS PROJECT REPORT

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INTRODUCTION

What is Vector Graphics?

Vector graphics is the use of geometrical primitives such as points, lines, curves, and shapes or polygon(s), which are all based on mathematical expressions, to represent images in computer graphics. Vector graphics are based on vectors (also called paths, or strokes) which lead through locations called control points.

Each of these points has a definite position on the x and y axes of the work plan.

Each point, as well, is a variety of database, including the location of the point in the work space and the direction of the vector (which is what defines the direction of the track).

Each track can be assigned a colour, a shape, a thickness and also a fill.

This does not affect the size of the files in a substantial way because all information resides in the structure; it describes how to draw the vector.

OBJECTIVE

To create an interactive graphics editor which supports only vector graphics using BGI graphics library in C.

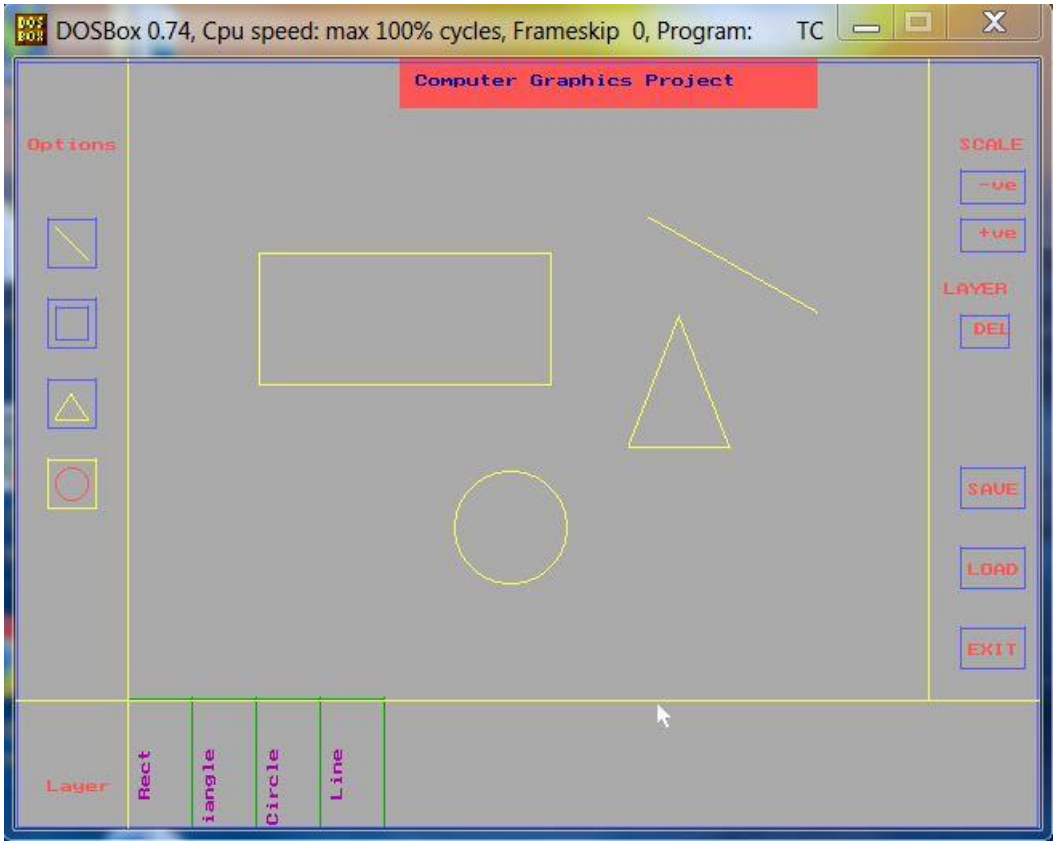
SCOPE

The vector graphics editor created using BGI graphics library in C where the user can create lines and basic shapes using a mouse on a intuitive GUI. The user is also able to transform each created shape in terms of translation, scaling and rotation individually. The boundary colors can also be changed. Multiple shapes on the screen are stacked as layers. Also, one set of on-screen shapes can be saved in the display file which can be retrieved later on.

PROJECT MODULES

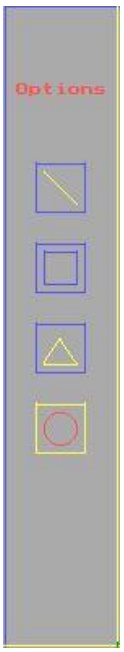
CANVAS

- This is the area where the objects are crated.
- Objects are made through mouse and their formation is achieved by dragging it.
- All the other options including the scaling are done on this zone only.



TOOLBAR PANEL

- The toolbar panel allows to select lines and different shapes on mouse click.
- Straight Line, Rectangle, Square and Circle are available to select.
- There are special scaling segments which increment/decrement the scale or angle of an object on the canvas on mouse click.

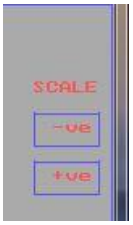


LAYER PANEL

- The layer panel depicts the current object selected on the canvas.
- A new layer is added in the panel whenever a new object is drawn.

SCALING

- There is a facility of even scaling the objects.
- The object can be minimised by clicking on the ‘-‘ button and can be enlarged by clicking on ‘+’.



DELETE, SAVE & LOAD

- Each object can be deleted by selecting its respective layer and then clicking the delete button.
- The is a provision of drawing multiple images by clicking on save and then clicking on the load button.