**2. Software Requirement Specifications:**

**2.1 Overall Description:**

## **2.1.1 Product Perspective:**

This is a graphics editor that enables the user to input graphical data. Using the editor, the user can also save the information input by him/her into files or open existing files for editing. This editor provides a graphical user - friendly interface to create and edit the files.

## **2.1.2 Product Functions:**

As mentioned previously, the main objective of the editor is to help the user to input graphical data and edit it conveniently. For ease in input and to help the user to traverse through the text easily, the editor provides functionality through the mouse.

## **2.1.3 User Characteristics:**

The editor provides a very easy-to-use interface and does not expect any extra technical knowledge from the user. A basic understanding of all the options provided in the editor would facilitate him in using the editor to the best possible extent. Since it is a mouse-driven interface it is sufficiently easy for any kind of end user to run it.

#### 2.2 Specific Requirements:

## **2.2.1 Software Requirements:**

* An MS-DOS based operating system like Windows 98, Windows 2000 or Windows XP is the platform required to develop the 2D and 3D graphics applications.
* A Visual C/C++ compiler is required for compiling the source code to make the executable file which can then be directly executed.
* A built in graphics library like glut and glut32, and header file like glut.h and also dynamic link libraries like glut and glut32 are required.

**2.2.2 Hardware Requirements:**

The hardware requirements are very minimal and the software can run on most of the machines.

* Processor - Intel 486/Pentium processor or above.
* Processor Speed - 500 MHz or above
* RAM - 64MB or above Storage Space - 2 MB or above
* Monitor resolution - A color monitor with a minimum resolution of 640\*480.

#### 2.3 Supportability:

* Good coding standards must be followed. The naming convention must be such that the names of the variables and functions used should indicate their purpose.
* One or two lines of documentation must be provided along with the functions to indicate what they are trying to achieve. Documentation must be provided for every module.

**2.4 Design Constraints:**

* As the software is being built to run on a DOS platform, which gives access to a maximum of only 640kB of conventional memory, efficient use of the memory is very important.
* As the software needs to be run even on low-end machines the code should be efficient and optimal with the minimal redundancies.
* Needless to say, the editor should also be robust and fast.
* It is assumed that the standard output device, namely the monitor, supports colors.
* One of the assumptions made in the file saving and retrieval process is that the required file is in the current directory.
* The user's system is required to have the C++ compiler of the appropriate version.
* The system is also expected to have a mouse connected since most of the drawing and other graphical operations implemented assume the presence of a mouse.

#### 2.5 Interfaces:

This section deals with the interfaces that must be supported by the application. It includes the user interfaces that are to be implemented by the system.

## **2.5.1 User Interfaces:**

The interface for the editor requires for the user to have a mouse connected, and the corresponding drivers installed. This is because most of the implementation details require and presume the presence of a mouse. For the convenience of the user, there are palettes and icons displayed on the screen.

**ICONS:**

The icons consists of the file saving and opening options. It also has the 'exit' option for termination of the editor's execution.

**PALETTES:**

* Color palette, which displays the different colors available to the user. He/she can pick the required color by clicking on the particular block.
* Shapes palette, which displays the various shapes that can be drawn by the user. This typically consists of line, circle, rectangle and freehand. User can choose the required shape by clicking on the icon representing the shape.
* 2D Transformations palette gives options like translation and rotation for the 2D objects created on the canvas. Again the user has to click on the icon to select the particular transformation.