**CHAPTER-1**

**INTRODUCTON**

Although computer graphics is a vast field that encompasses almost any graphical aspect, we are mainly interested in the generation of images of 2 and 3-dimensional scenes. Computer imagery has applications for film special effects, simulation and training, games, medical imagery, flying logos, etc. Computer graphics relies on an internal model of the scene, that is, a mathematical representation suitable for graphical computations. One such real life scene we found interesting is the working of the Lift-over Bridge or the Bascule Bridge and we have tried to incorporate this in this project.

A Bascule bridge (also called the Draw Bridge) is a movable bridge with a counter weight that continuously balances the span or “Leaf” throughout the entire upward swing in providing clearance for water traffic.

Bascule is basically a French term for ‘seesaw’ and ‘balance’. Lift-over bridges operate using the same principle and are the most common type of movable bridge in existence as they open quickly and require relatively less energy to operate. Although the Bascule Bridge has been in use since ancient times, it was not until the 1850s that engineers developed the ability to move very long, heavy spans quickly for practical purposes. The main advantage of Lift Over bridges are:

* It lifts the bascules and allows the ships and other water way bodies under it.
* The lift over bridge would be having two bascules which seem to be a single block when the bridge is closed. Whenever it is necessary to open the bascules, the bridge would take the help of towers which would be constructed on either side of the bascules. These towers act as supporting strength for the opening and closing bascules.
* The heavy cable helps to lift the bascules and place them back down. These cables also determine the speed at which the bascules should lift up and down across the water bodies.

The whole process of opening the bascules, allowing a ship to pass and bringing them down again for the resumption of road traffic takes only few minutes.