From the advent of computer graphics is rendering of cast shadows one of the basic methods to evoke an atmosphere and give an observer a realistic impression. It has been a very difficult task solved by specialized machines in the order of minutes not only in the past but also in the present. However, thanks to rapid progress of dedicated graphics hardware, it is easy now to master it even for interactive graphics. It has moved from simple geometric excuses on planar receivers to convincing shadow imitations. The aim of this thesis is to develop a graphical environment capable of comparing visual and efficiency properties of different methods specialized for shadow casting and subsequently implement some of them. Two algorithms have been chosen. The first one is a simple algorithm specialized for rendering shadows on planar receivers, the second one is an advanced algorithm called shadow volumes. Both are implemented in a basic and enhanced version and capable of achieving rates from tens to thousands of FPS.