Abstract: There are various methods for estimating a density. A group of methods which estimate the density as a function are called nonparametric methods of density estimation. One of such methods is kernel density estimation. This thesis deals with introducing the issue of the kernel density estimation. As an error criteria for kernel density estimation we consider mean squared error MSE and mean integrated squared error MISE. Requiring these errors to be minimal, we describe some methods for choosing the smoothing parameter. These methods are illustrated by their application to data using software *R*.