This bachelor's thesis firstly defines the basic terms and then describes the ROC curve. Thesis deals with meaning of the ROC curve, its properties and construction with a graphic representation. Subsequently, the expression of the ROC curve and its area for normal, exponential and uniform distribution is derived in the work, also with a graphical representation. Then, it is related to statistical testing. At the end, there are described the empirical expression of the ROC curve and its application to real data processed in the Python programming language.