The thesis describes Value-at-Risk (VaR) and Expected Shortfall (ES) models for measuring market risk. Parametric method, Monte Carlo simulation, and Historical simulation (HS) are presented. The second part of the thesis analyzes Extreme Value Theory (EVT). The fundamental theory behind EVT is built, and peaks-over-threshold (POT) method is introduced. The POT method is then used for modelling the tail of the distribution of losses with Generalized Pareto Distribution (GPD), and is simultaneously illustrated on VaR and ES calculations for PX Index. Practical issues such as multiple day horizon, conditional volatility of returns, and backtesting are also discussed. Subsequently, the application of parametric method, HS and EVT is demonstrated on a sample nonlinear portfolio designed in Mathematica and the results are discussed.