Maximum likelihood estimation is one of statistical methods for estimating an unknown parameter. It is often used because of a simple calculation of the estimator and also for characteristics of this estimator, which the method provides under some conditions. In the thesis we prove a consistence of the estimator under conditions of regularity and uniqueness of the root of the likelihood equation. If we add other assumptions we show its asymptotic normality and we expand this result from the one-dimensional parameter to the multi-dimensional parameter. The main result of the thesis lies in exercises, in which we cannot express the maximum likelihood estimator in general, but we can show its existence, uniqueness and asymptotic normality. Moreover we demonstrate the utilization of asymptotic normality of the estimator for asymptotic hypothesis tests and confidence intervals of the parameter.