This thesis deals with the formulation and estimation of the multivariate GARCH model. It mentions the various parameterizations of the multivariate GARCH model and discusses the relationships between them. The necessary and sufficient conditions for covariance stationarity of the multivariate GARCH model are presented, as is the maximum likelihood estimation of the parameters of the model. The thesis also includes estimation of the parameters of the bivariate GARCH(1,1) model for real time series using EViews.