

NAG Library Chapter Contents

G02 – Correlation and Regression Analysis

G02 Chapter Introduction

Routine Name	Mark of Introduction	Purpose
G02AAF	22	Computes the nearest correlation matrix to a real square matrix, using the method of Qi and Sun
G02BAF	4	Pearson product-moment correlation coefficients, all variables, no missing values
G02BBF	4	Pearson product-moment correlation coefficients, all variables, casewise treatment of missing values
G02BCF	4	Pearson product-moment correlation coefficients, all variables, pairwise treatment of missing values
G02BDF	4	Correlation-like coefficients (about zero), all variables, no missing values
G02BEF	4	Correlation-like coefficients (about zero), all variables, casewise treatment of missing values
G02BFF	4	Correlation-like coefficients (about zero), all variables, pairwise treatment of missing values
G02BGF	4	Pearson product-moment correlation coefficients, subset of variables, no missing values
G02BHF	4	Pearson product-moment correlation coefficients, subset of variables, casewise treatment of missing values
G02BJF	4	Pearson product-moment correlation coefficients, subset of variables, pairwise treatment of missing values
G02BKF	4	Correlation-like coefficients (about zero), subset of variables, no missing values
G02BLF	4	Correlation-like coefficients (about zero), subset of variables, casewise treatment of missing values
G02BMF	4	Correlation-like coefficients (about zero), subset of variables, pairwise treatment of missing values
G02BNF	4	Kendall/Spearman non-parametric rank correlation coefficients, no missing values, overwriting input data
G02BPF	4	Kendall/Spearman non-parametric rank correlation coefficients, casewise treatment of missing values, overwriting input data
G02BQF	4	Kendall/Spearman non-parametric rank correlation coefficients, no missing values, preserving input data
G02BRF	4	Kendall/Spearman non-parametric rank correlation coefficients, casewise treatment of missing values, preserving input data
G02BSF	4	Kendall/Spearman non-parametric rank correlation coefficients, pairwise treatment of missing values
G02BTF	14	Update a weighted sum of squares matrix with a new observation

G02BUF	14	Computes a weighted sum of squares matrix
G02BWF	14	Computes a correlation matrix from a sum of squares matrix
G02BXF	14	Computes (optionally weighted) correlation and covariance matrices
G02BYF	17	Computes partial correlation/variance-covariance matrix from correlation/ variance-covariance matrix computed by G02BXF
G02CAF	4	Simple linear regression with constant term, no missing values
G02CBF	4	Simple linear regression without constant term, no missing values
G02CCF	4	Simple linear regression with constant term, missing values
G02CDF	4	Simple linear regression without constant term, missing values
G02CEF	4	Service routines for multiple linear regression, select elements from vectors and matrices
G02CFF	4	Service routines for multiple linear regression, re-order elements of vectors and matrices
G02CGF	4	Multiple linear regression, from correlation coefficients, with constant term
G02CHF	4	Multiple linear regression, from correlation-like coefficients, without constant term
G02DAF	14	Fits a general (multiple) linear regression model
G02DCF	14	Add/delete an observation to/from a general linear regression model
G02DDF	14	Estimates of linear parameters and general linear regression model from updated model
G02DEF	14	Add a new independent variable to a general linear regression model
G02DFF	14	Delete an independent variable from a general linear regression model
G02DGF	14	Fits a general linear regression model to new dependent variable
G02DKF	14	Estimates and standard errors of parameters of a general linear regression model for given constraints
G02DNF	14	Computes estimable function of a general linear regression model and its standard error
G02EAF	14	Computes residual sums of squares for all possible linear regressions for a set of independent variables
G02ECF	14	Calculates R^2 and C_P values from residual sums of squares
G02EEF	14	Fits a linear regression model by forward selection
G02EFF	21	Stepwise linear regression
G02FAF	14	Calculates standardized residuals and influence statistics
G02FCF	15	Computes Durbin–Watson test statistic
G02GAF	14	Fits a generalized linear model with Normal errors
G02GBF	14	Fits a generalized linear model with binomial errors
G02GCF	14	Fits a generalized linear model with Poisson errors
G02GDF	14	Fits a generalized linear model with gamma errors
G02GKF	14	Estimates and standard errors of parameters of a general linear model for given constraints
G02GNF	14	Computes estimable function of a generalized linear model and its standard error

G02GPF	22	Computes a predicted value and its associated standard error based on a previously fitted generalized linear model.
G02HAF	13	Robust regression, standard M -estimates
G02HBF	13	Robust regression, compute weights for use with G02HDF
G02HDF	13	Robust regression, compute regression with user-supplied functions and weights
G02HFF	13	Robust regression, variance-covariance matrix following G02HDF
G02HKF	14	Calculates a robust estimation of a correlation matrix, Huber's weight function
G02HLF	14	Calculates a robust estimation of a correlation matrix, user-supplied weight function plus derivatives
G02HMF	14	Calculates a robust estimation of a correlation matrix, user-supplied weight function
G02JAF	21	Linear mixed effects regression using Restricted Maximum Likelihood (REML)
G02JBF	21	Linear mixed effects regression using Maximum Likelihood (ML)
G02KAF	22	Ridge regression, optimizing a ridge regression parameter
G02KBF	22	Ridge regression using a number of supplied ridge regression parameters
G02LAF	22	Partial least-squares (PLS) regression using singular value decomposition
G02LBF	22	Partial least-squares (PLS) regression using Wold's iterative method
G02LCF	22	PLS parameter estimates following partial least-squares regression by G02LAF or G02LBF
G02LDF	22	PLS predictions based on parameter estimates from G02LCF
