

# Appendix A

## Summary of Tasks

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# Appendix A

## Summary of Tasks

The following tables provide a list of capabilities available in the reporting, graphical, and statistical tasks in the Analyst Application. In each table, the Dialog column indicates the dialog in which the corresponding capability appears. Capabilities with an entry of *default* in the Dialog column are those that the task produces automatically.

Note that Analyst also provides an online index of its statistical features. You can view the index by clicking on the **Statistics** menu and selecting **Index**.

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### Reporting Tasks

The following tables provide a list of capabilities available in the Analyst Application reporting tasks (**Reports** menu).

**Table A.1.** Capabilities in the List Data Task

Capability	Dialog
Column heading split character	Options
Column heading style	Options
Column values, row identifier	Main
Double spacing	Options
Sequence numbers, row identifier	Options
Single spacing	Options
Sum selected columns	Options
Total number of observations	Options

**Table A.2.** Capabilities in the Tables Tasks

<b>Capability</b>	<b>Dialog</b>
Cell format	Options
Formats for class values and statistics, supplied	Options
Formats for class values and statistics, user-defined	Options
Headings, empty class value combinations	Options
Labels, variables, and statistics	Options
Missing values as valid class levels	Options
Number of spaces, row titles	Options
Ordering, class values	Options
Summary column position	Options
Summary row position	Options
Text, empty cells	Options

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## Graphical Tasks

The following tables provide a list of capabilities available in the Analyst Application graphical tasks (**Graphs** menu).

**Table A.3.** Capabilities in the Bar Chart Tasks

<b>Capability</b>	<b>Dialog</b>
Analysis variable	Options
Bar appearance	Options
Bar outline color and width	Options
Bar text color, size, and font	Options
Frame options	Options
Horizontal bar statistics, display options	Options
Number of bars	Options
Order of bars	Options
Reference lines	Options
Statistic to chart, average	Options
Statistic to chart, cumulative frequency	Options
Statistic to chart, cumulative percent	Options
Statistic to chart, frequency	Options
Statistic to chart, percent	Options

**Table A.3.** (continued)

<b>Capability</b>	<b>Dialog</b>
Statistic to chart, sum	Options
Three-dimensional chart	Main
Two-dimensional chart	Main
Vertical bar statistics, display options	Options

**Table A.4.** Capabilities in the Pie Chart Task

<b>Capability</b>	<b>Dialog</b>
Analysis variable	Options
Frequency variable	Options
Missing values	Options
Number of slices	Options
"Other" slice	Options
Slice and outline colors	Options
Slice angle	Options
Slice explosion	Options
Slice label type and placement	Options
Slice text color, size, and font	Options
Statistic to chart, average	Options
Statistic to chart, frequency	Options
Statistic to chart, percent	Options
Statistic to chart, sum	Options
Three-dimensional chart	Main
Two-dimensional chart	Main

**Table A.5.** Capabilities in the Histogram Task

<b>Capability</b>	<b>Dialog</b>
Bar and outline colors	Display
Bar pattern	Display
Exponential, fitted curve	Fit
Fitted curve colors	Display
Lognormal, fitted curve	Fit
Midpoints for histogram intervals	Display

**Table A.5.** (continued)

Capability	Dialog
Normal, fitted curve	Fit
Number of observations, vertical axis scale	Display
Percent of observations, vertical axis scale	Display
Proportion of observations, vertical axis scale	Display
Weibull, fitted curve	Fit

**Table A.6.** Capabilities in the Box Plot Task

Capability	Dialog
Box and outline colors	Display
Constant, box width	Display
Notches	Display
Point color and symbol	Display
Proportional to $\sqrt{n}$ , box width	Display
Proportional to $\log(n)$ , box width	Display
Proportional to sample size $n$ , box width	Display
Schematic style	Display
Skeletal style	Display

**Table A.7.** Capabilities in the Probability Plot Task

Capability	Dialog
Exponential, fitted curve	Main
Fitted curve color	Display
Fitted curve style and width	Display
Grid lines at percentiles	Display
Lognormal, fitted curve	Main
Normal, fitted curve	Main
Point color and symbol	Display
Weibull, fitted curve	Main

**Table A.8.** Capabilities in the Scatter Plot: Two-Dimensional Task

Capability	Dialog
Line color	Display
Line style and width	Display
Point color and symbol	Display
Points connected to $y = 0$	Display
Points connected with straight lines	Display
Reference lines	Display

**Table A.9.** Capabilities in the Scatter Plot: Three-Dimensional Task

Capability	Dialog
Point color and symbol	Display
Points connected to $x$ - $y$ plane	Display
Reference lines	Display
Rotation angle	Display
Tilt angle	Display

**Table A.10.** Capabilities in the Contour Plot Task

Capability	Dialog
Bivariate interpolation	Interpolate
Contour line labeling	Display
Interpolation / smoothing	Interpolate
Legend display	Display
Linear interpolation	Interpolate
Number of levels	Display
Partial spline interpolation	Interpolate
Pattern line density and angle	Display
Pattern outline color	Display
Pattern style	Display
Spline interpolation	Interpolate

**Table A.11.** Capabilities in the Surface Plot Task

Capability	Dialog
Bivariate interpolation	Interpolate
Interpolation / smoothing	Interpolate
Linear interpolation	Interpolate
Partial spline interpolation	Interpolate
Reference lines	Display
Rotation angle	Display
Spline interpolation	Interpolate
Surface colors	Display
Surface side walls	Display
Tilt angle	Display

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## Statistical Tasks

The following tables provide a list of capabilities available in the Analyst Application statistical tasks (**Statistics** menu).

**Table A.12.** Capabilities in the Descriptive: Summary Statistics Task

Capability	Dialog
Box-and-whisker plot	Plots
Coefficient of variation	Statistics
Corrected sum of squares	Statistics
Histogram	Plots
Kurtosis	Statistics
Maximum	Statistics
Mean	Statistics
Median	Statistics
Minimum	Statistics
Number of missing observations	Statistics
Number of observations	Statistics
Output appearance	Output
Probability of $t$	Statistics
Range	Statistics



**Table A.12.** (continued)

<b>Capability</b>	<b>Dialog</b>
Skewness	Statistics
Standard deviation	Statistics
Standard error	Statistics
Student's <i>t</i>	Statistics
Sum	Statistics
Uncorrected sum of squares	Statistics
Variance	Statistics

**Table A.13.** Capabilities in the Descriptive: Distributions Task

<b>Capability</b>	<b>Dialog</b>
Box-and-whisker plot	Plots
Descriptive statistics	default
Exponential, fitted distribution	Fit
Extreme observations	default
Histogram	Plots
Lognormal, fitted distribution	Fit
Median	default
Moments	default
Normal, fitted distribution	Fit
Percentiles	default
Probability plot	Plots
Quantile-quantile plot	Plots
Quantiles	default
Sign statistic	default
Signed rank statistic	default
Tests for location	default
Weibull, fitted distribution	Fit

**Table A.14.** Capabilities in the Descriptive: Correlations Task

Capability	Dialog
Confidence ellipses	Plots
Corrected SSCP matrix	Options
Covariances	Options
Cronbach's alpha	Options
Descriptive statistics	Options
Hoeffding's D	Options
Kendall's tau- <i>b</i>	Options
<i>p</i> -values	Options
Pearson correlations	Options
Scatter plots	Plots
Spearman correlations	Options
SSCP matrix	Options

**Table A.15.** Capabilities in the Descriptive: Frequency Counts Task

Capability	Dialog
Bar charts	Plots
Cumulative frequencies	Tables
Cumulative percentages	Tables
Frequencies	Tables
Order, variable levels	Input
Percentages	Tables

**Table A.16.** Capabilities in the Table Analysis Task

Capability	Dialog
Chi-square statistics	Statistics
Fisher's exact test for $r \times c$ tables	Statistics
Frequencies	Tables
Likelihood ratio chi-square	Statistics
Mantel-Haenszel statistics	Statistics
McNemar's test for $2 \times 2$ tables	Statistics
Measures of agreement	Statistics

**Table A.16.** (continued)

<b>Capability</b>	<b>Dialog</b>
Measures of association	Statistics
Odds ratios for 2×2 tables	Statistics
Order, variable levels	Input
Pearson chi-square	Statistics
Pearson correlation coefficient	Statistics
Percentages	Tables
Simple kappa coefficient	Statistics
Spearman correlation coefficient	Statistics
Weighted kappa coefficient	Statistics

**Table A.17.** Capabilities in the Hypothesis Tests: One-Sample Z-test for a Mean Task

<b>Capability</b>	<b>Dialog</b>
Alternative hypotheses	Main
Bar chart	Plots
Box-and-whisker plot	Plots
Confidence intervals	Tests
Mean comparison value	Main
Normal distribution plot	Plots
Population standard deviation	Main
Population variance	Main
Power analysis	Tests

**Table A.18.** Capabilities in the Hypothesis Tests: One-Sample t-test for a Mean Task

<b>Capability</b>	<b>Dialog</b>
Alternative hypotheses	Main
Bar chart	Plots
Box-and-whisker plot	Plots
Confidence intervals	Tests
Mean comparison value	Main
Power analysis	Tests
<i>t</i> distribution plot	Plots

**Table A.19.** Capabilities in the Hypothesis Tests: One-Sample Test for a Proportion Task

Capability	Dialog
Alternative hypotheses	Main
Bar chart	Plots
Confidence intervals	Tests
Normal distribution plot	Plots

**Table A.20.** Capabilities in the Hypothesis Tests: One-Sample Test for a Variance Task

Capability	Dialog
Alternative hypotheses	Main
Box-and-whisker plot	Plots
Confidence intervals	Tests
Probability distribution plot	Plots
Variance comparison value	Main

**Table A.21.** Capabilities in the Hypothesis Tests: Two-Sample t-test for Means Task

Capability	Dialog
Alternative hypotheses	Main
Bar chart	Plots
Box-and-whisker plot	Plots
Confidence intervals	Tests
Mean comparison value	Main
Means plot	Plots
Power analysis	Tests
Stacked data	Main
$t$ distribution plot	Plots
Unstacked data	Main

**Table A.22.** Capabilities in the Hypothesis Tests: Two-Sample Paired t-test for Means Task

Capability	Dialog
Alternative hypotheses	Main
Bar chart	Plots
Box-and-whisker plot	Plots
Confidence intervals	Tests
Mean comparison value	Main
Means plot	Plots
Power analysis	Tests
$t$ distribution plot	Plots

**Table A.23.** Capabilities in the Hypothesis Tests: Two-Sample Test for Proportions Task

Capability	Dialog
Alternative hypotheses	Main
Bar chart	Plots
Confidence intervals	Tests
Normal distribution plot	Plots
Stacked data	Main
Unstacked data	Main

**Table A.24.** Capabilities in the Hypothesis Tests: Two-Sample Test for Variances Task

Capability	Dialog
Alternative hypotheses	Main
Box-and-whisker plot	Plots
Confidence intervals	Tests
Probability distribution plot	Plots
Stacked data	Main
Unstacked data	Main

**Table A.25.** Capabilities in the ANOVA: One-Way ANOVA Task

<b>Capability</b>	<b>Dialog</b>
Bonferroni <i>t</i> -test	Means
Box and whisker plot	Plots
Duncan multiple-range test	Means
Means comparisons	Means
Means plots	Plots
Power analysis	Tests
R-square statistic	default
Residual plots	Plots
Tests of homogeneity of variance	Tests
Tukey HSD test	Means
Welch's variance-weighted ANOVA	Tests

**Table A.26.** Capabilities in the ANOVA: Nonparametric One-Way ANOVA Task

<b>Capability</b>	<b>Dialog</b>
Ansari-Bradley test	Tests
Exact <i>p</i> -values	Tests
Klotz test	Tests
Kruskal-Wallis test	Tests
Median test	Tests
Mood test	Tests
Savage test	Tests
Siegel-Tukey test	Tests
Van der Waerden test	Tests
Wilcoxon test	Tests

**Table A.27.** Capabilities in the ANOVA: Factorial ANOVA Task

<b>Capability</b>	<b>Dialog</b>
Adjusted R-square statistic	default
Bonferroni <i>t</i> -test	Means
Covariance ratio	Plots
Crossed effects	Model
DFFITS	Plots
Duncan multiple-range test	Means
Factorial models	Model
Influence plots	Plots
Interaction effects	Model
Least-squares means	Means
Leverage	Plots
Means comparisons	Means
Means plots	Plots
Model building	Model
Power analysis	Tests
Predicted values	Predictions
Prediction limits	Predictions
R-square statistic	default
Residual plots	Plots
Residual values	Predictions
Residuals, ordinary	Plots
Residuals, standardized	Plots
Residuals, studentized	Plots
Tukey HSD test	Means
Type 1, 2, 3, 4 sum of squares	Statistics
Weighted least squares	Tests

**Table A.28.** Capabilities in the ANOVA: Linear Models Task

<b>Capability</b>	<b>Dialog</b>
Adjusted R-square statistic	default
Bonferroni <i>t</i> -test	Means
Classification effects	Main
Covariance ratio	Plots
Crossed effects	Model
DFFITs	Plots
Duncan multiple-range test	Means
Factorial models	Model
Influence plots	Plots
Interaction effects	Model
Intercept	Model
Least-squares means	Means
Leverage	Plots
Means comparisons	Means
Means plots	Plots
Model building	Model
Multivariate tests	Tests
Nested effects	Model
Parameter estimates	Statistics
Polynomial effects	Model
Power analysis	Tests
Predicted plots	Plots
Predicted values	Predictions
Prediction limits	Predictions
R-square statistic	default
Residual plots	Plots
Residual values	Predictions
Residuals, ordinary	Plots
Residuals, standardized	Plots
Residuals, studentized	Plots
Scatter plots	Plots
Tukey HSD test	Means
Type 1, 2, 3, 4 sum of squares	Statistics
Weighted least squares	Tests



**Table A.29.** Capabilities in the ANOVA: Repeated Measures Task

<b>Capability</b>	<b>Dialog</b>
Ante-dependence covariances, first order	Model
Autoregressive covariances, first order	Model
Chi-square test, likelihood ratio	Statistics
Classification effects	Main
Compound symmetry covariances	Model
Confidence limits, covariance estimates	Statistics
Confidence limits, parameter estimates	Statistics
Covariance structures	Model
Crossed effects	Model
Factorial models	Model
Fitting information	default
Huynh-Feldt covariances	Model
Information criteria summary	Model
Interaction effects	Model
Intercept	Model
Least-squares means	Means
Likelihood ratio test	default
Means plots	Plots
Model building	Model
Nested effects	Model
Parameter estimates	Statistics
Polynomial effects	Model
Predicted plots	Plots
Predicted values	Predictions
Prediction limits	Predictions
Repeated effect	Model
Residual plots	Plots
Residual values	Predictions
Scatter plots	Plots
Subject effect	Model
Toeplitz covariances	Model
Type 1, 2, 3 sum of squares	Statistics
Unstructured covariances	Model
Variance components structure	Model

**Table A.30.** Capabilities in the ANOVA: Mixed Models Task

<b>Capability</b>	<b>Dialog</b>
Classification effects	Main
Confidence level	Options
Confidence limits, covariance parameter estimates	default
Confidence limits, fixed effects estimates	Options
Confidence limits, random effects estimates	Options
Covariance parameter estimates	default
Crossed effects	Model
Estimation methods	Options
Factorial models	Model
Fitting information	default
Fixed effects	Model
Interaction effects	Model
Intercept, fixed effects	Model
Least-squares means	Means
Main effects	Model
Maximum likelihood estimation	Options
Means plots, fixed effects	Plots
Minimum variance quadratic unbiased estimation	Options
Model building	Model
Nested effects	Model
Polynomial effects	Model
Predicted means	Predictions
Predicted value plots	Plots
Predicted values, including random effects	Predictions
Random effects	Model
REML	Options
Residual maximum likelihood estimation	Options
Residual plots	Plots
Satterthwaite method, fixed effects	default
Scatter plots	Plots
Solution, fixed effects parameters	Options
Solution, random effects parameters	Options
Types 1, 2, 3 estimation	Options
Types 1, 2, 3 tests, fixed effects	Tests
Variance components tests	Tests

**Table A.31.** Capabilities in the Regression: Simple Task

<b>Capability</b>	<b>Dialog</b>
Adjusted R-square statistic	default
Coefficient of variation	default
Confidence limits	Plots
Confidence limits for estimates	Statistics
Correlation matrix of estimates	Statistics
Covariance matrix of estimates	Statistics
Covariance ratio	Plots
Cubic model	Main
DFFITS	Plots
Influence plots	Plots
Leverage	Plots
Normal probability-probability plot	Plots
Normal quantile-quantile plot	Plots
Power analysis	Tests
Predicted values	Predictions
Prediction limits	Plots
Quadratic model	Main
R-square statistic	default
Residual plots	Plots
Residual values	Predictions
Residuals, ordinary	Plots
Residuals, standardized	Plots
Residuals, studentized	Plots
Scatter plots	Plots
Standardized regression coefficients	Statistics

**Table A.32.** Capabilities in the Regression: Linear Task

<b>Capability</b>	<b>Dialog</b>
Adjusted R-square model selection	Model
Adjusted R-square statistic	default
Akaike's information criterion	Model
Amemiya's prediction criterion	Model
Asymptotic covariance matrix	Statistics

**Table A.32.** (continued)

<b>Capability</b>	<b>Dialog</b>
Backward elimination model selection	Model
Bayesian information criterion	Model
Coefficient of variation	default
Collinearity analysis	Statistics
Confidence limits for estimates	Statistics
Correlation matrix of estimates	Statistics
Covariance matrix of estimates	Statistics
Covariance ratio	Plots
DFFITS	Plots
Durbin-Watson statistic	Statistics
Forward model selection	Model
Heteroscedasticity test	Statistics
Influence plots	Plots
Intercept	Model
Leverage	Plots
Mallows' Cp model selection	Model
Mallows' Cp statistic	Model
Maximum R-square improvement model selection	Model
Minimum R-square improvement model selection	Model
Multivariate statistics	Statistics
Normal probability-probability plot	Plots
Normal quantile-quantile plot	Plots
Partial correlations	Statistics
Power analysis	Tests
Predicted values	Predictions
Prediction limits	Plots
R-square model selection	Model
R-square statistic	default
Residual plots	Plots
Residual values	Predictions
Residuals, ordinary	Plots
Residuals, standardized	Plots
Residuals, studentized	Plots
Scatter plots	Plots
Schwarz's bayesian criterion	Model

**Table A.32.** (continued)

<b>Capability</b>	<b>Dialog</b>
Semi-partial correlations	Statistics
Standardized regression coefficients	Statistics
Stepwise model selection	Model
Stepwise regression	Model
Tolerance values for estimates	Statistics
Type 1 sum of squares	Statistics
Type 2 sum of squares	Statistics
Variance inflation factors	Statistics
Weighted least squares	Tests

**Table A.33.** Capabilities in the Regression: Logistic Task

<b>Capability</b>	<b>Dialog</b>
Association of predicted probabilities and observed responses	default
Backward elimination model selection	Model
Best subset model selection	Model
CI displacement	Plots
Classification effects	Main
Classification table	Statistics
Conditional odds ratios	Statistics
Confidence limits	Statistics
Correlation matrix of estimates	Statistics
Covariance matrix of estimates	Statistics
Crossed effects	Model
Deviance residuals	Plots
DFBetas	Plots
Difference in chi-square residuals	Plots
Difference in deviance residuals	Plots
Dispersion parameter	Statistics
Factorial models	Model
Fit statistics	default
Forward model selection	Model
Goodness-of-fit statistics	Statistics
Influence plots	Plots

**Table A.33.** (continued)

<b>Capability</b>	<b>Dialog</b>
Interaction effects	Model
Leverage	Plots
Likelihood ratio	default
Odds ratio estimates	default
Pearson residuals	Plots
Polynomial effects	Model
Predicted values	Predictions
Prior probabilities	Statistics
Probability cutpoints	Statistics
Profile likelihood limits	Statistics
Residual plots	Plots
Residual values	Predictions
Response profile	default
ROC curve	Plots
Standardized estimates	default
Stepwise model selection	Model
Wald limits	Statistics

**Table A.34.** Capabilities in the Multivariate: Principal Components Task

<b>Capability</b>	<b>Dialog</b>
Analysis of correlation matrix	Statistics
Analysis of covariance matrix	Statistics
Analysis of uncorrected matrices	Statistics
Principal component scores	Save Data
Principal components plot	Plots
Scree plot	Plots

**Table A.35.** Capabilities in the Multivariate: Canonical Correlation Task

<b>Capability</b>	<b>Dialog</b>
Canonical redundancy statistics	Statistics
Canonical variable plot	Plots
Canonical variable scores	Save Data
Correlations of regression coefficients	Statistics
Number of canonical variables	Statistics
Partial correlations	Statistics
Partial variables	Variables
Regression analysis	Statistics
Semi-partial correlations	Statistics
Squared multiple correlation	Statistics
Standard error of coefficients	Statistics
Standardized regression coefficients	Statistics
<i>t</i> statistic and probability	Statistics

**Table A.36.** Capabilities in the Survival: Life Tables Task

<b>Capability</b>	<b>Dialog</b>
Censoring values	Main
Confidence intervals	Methods
Hazard function plots	Plots
Life table method	Methods
Probability density function plots	Plots
Product-limit estimation method	Methods
Strata endpoints	Plots
Survival estimates	default
Survival function plots	Plots

**Table A.37.** Capabilities in the Survival: Proportional Hazards Task

Capability	Dialog
Backward elimination model selection	Model
Best subset model selection	Model
Censoring values	Main
Confidence limits of hazard ratio	Methods
Correlations of parameter estimates	Methods
Covariances of parameter estimates	Methods
Failure time ties, Breslow approximate likelihood method	Methods
Failure time ties, discrete logistic model method	Methods
Failure time ties, Efron approximate likelihood method	Methods
Failure time ties, exact conditional probability method	Methods
Forward model selection	Model
Global hypothesis test	default
Stepwise model selection	Model
Survival function plots	Plots

The Sample Size tasks provide sample size and power calculations for several types of analyses and study designs. Power curves are available with each task. The types of sample size analyses available in the Analyst Application are as follows:

- one-sample  $t$ -test
- one-sample confidence interval
- one-sample equivalence
- paired  $t$ -test
- paired confidence interval
- paired equivalence
- two-sample  $t$ -test
- two-sample confidence interval
- two-sample equivalence
- one-way ANOVA



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