Whats’ new in Version 18?

DATA MANAGEMENT
1. **Big Data** — new file format for managing data with many millions of rows.
2. **Censored numeric data type** — for representing left, right and interval-censored data.
3. **Create data and code columns** — for consolidating multiple data columns.
4. **Currency data type** — for representing currency in dollars, Euros, pounds or yen.
5. **New operators** — 17 new operators for use in Statgraphics expressions.
6. **Replace censored values** — specification of replacement values for censored data.

GRAPHICS
1. **Contour plots** — new option to label each contour line.
2. **Demographic maps** — now supports SHP boundary files.
3. **Diamond plot** — dot plot with diamond displaying confidence interval for the mean.
4. **Donut chart** — alternative to piechart.
5. **Heat map** — shows the distribution of a quantitative factor by 2 categorical factors.
7. **Likert plot** — displays survey data recorded on a Likert scale.
8. **Regression models** — shading of area between confidence and prediction limits.
9. **Ribbon plot** — new type of plot for displaying response surfaces.
10. **Time series baseline plot** — for plotting data with upper and lower warning limits.
11. **Tornado and butterfly plots** — for comparing 2 samples of attribute data.

SYSTEM OPERATION
1. **Installation** — new option to deactivate program and move to new computer.
2. **Network installation** — new option to check out individual seats.
3. **R interface** — improved configuration of interface to the R language.
4. **Repeat analysis by** — replication of statistical procedures for multiple data columns.

DESIGN OF EXPERIMENTS & STATISTICAL PROCESS CONTROL
1. **Attribute capability analysis Statlet** — classical and Bayesian estimation.
2. **Capability control charts** — for Cp, Cpk, rate & proportion of nonconforming items.
3. **Capability control chart design** — determination of adequate sample size.
4. **Definitive screening designs** — new designs for fitting models with quadratic terms.
5. **Multivariate capability analysis** — new bootstrap confidence intervals.
6. **Multivariate tolerance limits** — using elliptical regions or Bonferroni approach.
7. **X-bar and R chart** — now available for subgroups with more than 100 observations.

NEW STATLETS
1. **Demographic map visualizer** — dynamic visualization of changes by location.
3. **Sunflower plot** — displays Big Data with sunflowers replacing overlapping points.
4. **Trivariate density** — for displaying multivariate distribution of 3 variables.
5. **Violin plot** — combines box-and-whisker plot with nonparametric density estimate.
6. **Wind rose** — dynamic visualizer of changes in wind speed and direction over time.
OTHER NEW STATISTICAL PROCEDURES

2. Distribution fitting (arbitrarily censored data) – left, right and interval censoring.
3. Equivalence & noninferiority tests – for comparing two independent samples, two paired samples, one mean against a target, or a 2x2 crossover study.
6. Multivariate normality test – tests if data come from a multivariate normal distribution.
7. Orthogonal regression – fits models with errors in both Y and X.
9. X-13ARIMA-SEATS Seasonal Adjustment – for time series data.

CHANGES TO EXISTING PROCEDURES

1. Automatic forecasting – Ljung-Box test for testing residual autocorrelations.
2. Bivariate density plot – overlays points on bivariate density contours.
3. Box-and-whisker plots – optional diamond to display confidence interval for mean.
5. Chi-square tests – specification of minimum frequency before combining classes.
7. Monte Carlo simulation of ARIMA models – option to specify starting values.
8. Subset analysis – new percentile plot and table of percentiles by group.