| Case | Program |
|---|---|
| **Integer parameters: Number of objects** | |
| Total number of objects in the population | TagAndRelease.py |
| Number of marked or tagged objects in a population of known size. | MarkedPopulation.py |
| Total number in a population that is serially labelled (i.e. $1^{st}$, $2^{nd}$, $3^{rd}$ etc) | FamilySize.py |
| **Proportion/Fraction type parameter** | |
| One parameter | ProportionParameter.py |
| Difference between two proportions/fractions | DifferenceProportionParameter.py |
| Compare multiple proportions/fractions | MultiProportionParameter.py |
| Multiple fractions vs. dose - logistic response model | ProportionDoseResponse.py |
| **Rate constant type parameters, e.g. Poisson process** | |
| Rare events, no background | RareCounts.py |
| Rare events with background | RareCountsBackgnd.py |
| Multiple observations of rare events | MultiRareCounts.py |
| **Measures of central tendency and spread: The Mean and Standard Deviation of a population** | |
| Standard model:  Gaussian (or normally distributed) noise | MeanStdDev.py |
| Large values or noise or errors occurs more frequently than normal | MeanStdDevFatTailNoise.py |
| Compare two means and/or two variances (Bayesian replacement for 'T'-test and 'F'-test) | DifferenceInMeans.py |
| Compare two means when the raw data is not available: only have summary data | DiffMeansFromStats.py |
| Compare multiple means. Hierarchical model with hyper-parameters. (Bayesian replacement for ANOVA) | MultiMeanHierarchy.py |
| **Non-parametric comparison of populations** | |
| Rank test (Bayesian replacement for Wilcoxen rank test) | RankTest.py+DifferenceInMeans.py |
| Population ID (Classification) | PopulationID.xls |
| **Survival/Decay type data** | |
| Exponential decay in time or space | DecayTimeLength.py |
| General survival (in time or space) | SurvivalWeibull.py |
| **Curve Fitting** | |
| Straight line | LinearRegression.py |
| Polynomial | CurveFitBIC.py |
| Sinusoidal | PeriodicSeries.py |
| **General** | |
| Change/difference in a parameter given two posterior pdfs | DiffPdf.py |