

Incanter Cheat Sheet

Functions and Macros Overview

Documentation (<http://incanter.org/docs/api>)

`doc find-doc source (clojure.contrib.repl-utils)`

Charts and Plots (incanter.charts)

XY Plots

Create:	<code>xy-plot scatter-plot</code>
Add data:	<code>add-lines add-points</code> <code>add-function</code>
Appearance:	<code>clear-background set-alpha</code> <code>set-background set-title</code> <code>set-x-label set-y-label</code>
Annotate:	<code>add-points add-polygon, add-text</code>
View:	<code>view</code>
Save PNG:	<code>save</code>

Category Charts

Create:	<code>bar-chart line-chart</code>
Add data:	<code>add-category</code>
Appearance:	<code>clear-background set-alpha</code> <code>set-background set-title</code> <code>set-x-label set-y-label</code>
View:	<code>view</code>
Save PNG:	<code>save</code>

Histograms

Create:	<code>histogram</code>
Add data:	<code>add-histogram add-lines</code> <code>add-function</code>
Appearance:	<code>clear-background set-alpha</code> <code>set-background set-title</code> <code>set-x-label set-y-label</code>
View:	<code>view</code>
Save PNG:	<code>save</code>

Box Plots

Create:	<code>box-plot</code>
Add data:	<code>add-box-plot</code>
Appearance:	<code>clear-background set-alpha</code> <code>set-background set-title</code> <code>set-x-label set-y-label</code>
View:	<code>view</code>
Save PNG:	<code>save</code>

Misc. Plots

Create:	<code>qq-plot trace-plot</code> <code>bland-altman-plot</code>
Appearance:	<code>clear-background set-alpha</code> <code>set-background set-title</code> <code>set-x-label set-y-label</code>
View:	<code>view</code>
Save PNG:	<code>save</code>

Math (incanter.core)

Operations:	<code>plus minus mult div exp log</code> <code>log10 log2 pow sqr sq sum prod</code> <code>abs</code>
Trigonometry:	<code>cos sign tan acos asin atan</code>
Special fns:	<code>beta gamma regularized-beta</code> <code>incomplete-beta</code>
Misc. fns:	<code>choose factorial</code> <code>sum-of-squares solve-quadratic</code>

Matrices (incanter.core)

Create:	<code>matrix diag identity-matrix</code> <code>symmetric-matrix</code> <code>bind-columns bind-rows</code> <code>to-matrix</code>
Properties:	<code>dim ncol nrow rank</code> <code>condition matrix?</code>
Selection:	<code>sel diag group-by</code>
Element-wise ops:	<code>plus minus mult div exp log</code> <code>log10 log2 pow sin cos tan</code> <code>asin acos atan abs</code>
Matrix ops:	<code>mmult kronecker solve trace</code> <code>det</code>
Transformation:	<code>trans vectorize</code> <code>half-vectorize to-list</code> <code>to-vect</code>
Decomposition:	<code>decomp-cholesky</code> <code>decomp-eigenvalue decomp-lu</code> <code>decomp-qr decomp-svd</code>
View:	<code>view</code>
Save to file:	<code>save</code>

Data Sets (incanter.core)

Create:	<code>dataset read-dataset (in-</code> <code>canter.io) get-dataset (incan-</code> <code>ter.datasets)</code>
Properties:	<code>dim ncol nrow dataset?</code>
Selection:	<code>sel group-by</code>
Transformation:	<code>to-matrix</code>
View:	<code>view</code>
Save to file:	<code>save</code>

Probability (incanter.stats)

PDF:	<code>pdf-beta pdf-binomial pdf-chisq</code> <code>pdf-exp pdf-f pdf-gamma</code> <code>pdf-neg-binomial pdf-normal</code> <code>pdf-poisson pdf-t pdf-uniform</code>
CDF:	<code>cdf-beta cdf-binomial cdf-chisq</code> <code>cdf-empirical cdf-exp cdf-f</code> <code>cdf-gamma cdf-neg-binomial</code> <code>cdf-normal cdf-poisson cdf-t</code> <code>cdf-uniform</code>
Quantile:	<code>quantile quantile-normal</code> <code>quantile-t</code>
Sampling:	<code>sample sample-beta sample-binomial</code> <code>sample-chisq sample-dirichlet</code> <code>sample-exp sample-gamma</code> <code>sample-inv-wishart sample-mvn</code> <code>sample-neg-binomial sample-normal</code> <code>sample-poisson sample-t</code> <code>sample-uniform sample-wishart</code>

Statistics (incanter.stats)

Summary:	<code>mean variance sd skewness</code> <code>kurtosis median cumulative-mean</code> <code>tabulate detabulate</code>
Association:	<code>covariance correlation</code>
Tests:	<code>chisq-test t-test permutations</code> <code>bootstrap</code>
Regression:	<code>linear-model</code>

I/O (incanter.io)

Read Data: `read-dataset`

Write Data: `save`

Bayesian Inference (incanter.bayes)

Sampling: `sample-model-params`
`sample-multinomial-params`
`sample-proportions`

Plots: `trace-plot` `histogram`

Optimization (incanter.optimize)

`non-linear-model` `gradient` `hessian` `derivative`
`integrate`

Censored Data (incanter.censored)

`censored-mean-lower` `censored-mean-two-sided`
`censored-mean-upper` `censored-variance-lower`
`censored-variance-two-sided`
`censored-variance-upper` `truncated-variance`