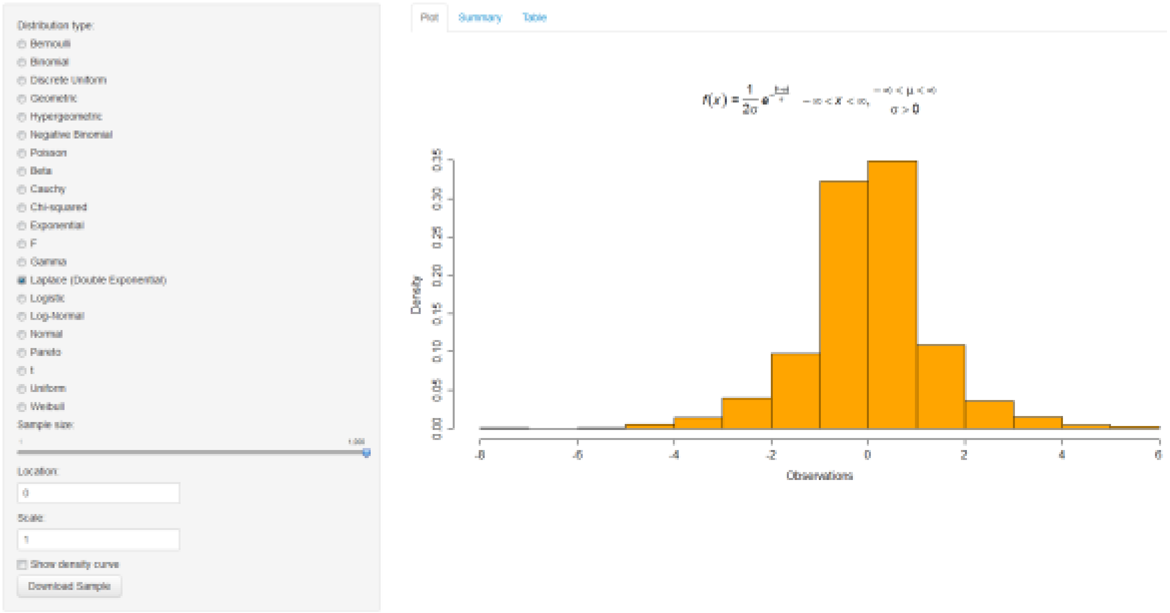
R sampling app version 3

Posted on **May 20, 2013** by **Matt Leonawicz**

Continuing from my previous post, R sampling app version 2 [app], here I expand upon the example Shiny app that was presented, which generates random samples from some common probability distributions. Specifically, I incorporate additional probability density and mass functions.



Distribution type:

- ○ Bernoulli
- ○ Binomial
- ○ Discrete Uniform
- ○ Geometric
- ○ Hypergeometric
- ○ Negative Binomial
- ○ Poisson
- ○ Beta
- ○ Cauchy
- ○ Chi-squared
- ○ Exponential
- ○ F
- ○ Gamma
- ● Laplace (Double Exponential)
- ○ Logistic
- ○ Log-Normal
- ○ Normal
- ○ Pareto
- ○ t
- ○ Uniform
- ○ Weibull

Sample size: 1 – 1,000

Location: 0

Scale: 1

□ Show density curve

Download Sample
Plot
Summary
Table
$f(x)=\frac{1}{2\sigma}e^{-\frac{|x-\mu|}{\sigma}}\quad -\infty<x<\infty,\quad \begin{matrix}-\infty<\mu<\infty\\ \sigma>0\end{matrix}$
Density
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
-8
-6
-4
-2
0
2
4
6
Observations

You can click the image to go to the app page.

See my posts, Mathematical notation in R plots and Mathematical notation in R plots 2, for some examples and conveniently supplied **R** code for displaying the equation of a pdf or pmf on an **R** plot for many common distributions. The code shown in this post for version 3 of the random sampling app will make use of all these **R** expressions, but you won’t see the expressions explicitly, so please see the other posts if you are interested in how they work or just copying them for your convenience.

I have done some cleanup of the scripts. First, here is the code that is run to build the workspace file that will be loaded by the app:

I save this workspace as `samplingApp.RData` and place it in the directory that contains the `ui.R` and `server.R` scripts. Next, we have the `ui.R` script. The most important, though subtle, change is the addition of `uiOutput("dist3")` on account of now including some distributions in the app which take three input arguments when sampling from them. You can see here all 21 of the distributions, 7 discrete and 14 continuous, which have been incorporated into the app.

Finally we have the `server.R` script, which has changed significantly since version 2. I have cleaned it up by alphabetizing things as the number of distributions has grown. Also, I moved much of the code in the top of the script prior to the `shinyServer` call to the workspace file mentioned above. You may have noted there, if you saw my previous posts, that I removed any references to the `formals` command and standardized all of my `r*` random sampling wrapper functions. The reason I made these wrapper functions in the first place, e.g. `rgamma2` instead of just using the original base **R** functions, was because the reactivity of Shiny made it a challenge to work with multiple functions that had formal arguments of the same name. Perhaps there is a better way around this, but this was what I thought to do. Corresponding to the change noted for the `ui.R` script, in the `server.R` script I have added `output$dist3`. Lastly, the `VGAM` package is loaded to allow sampling from the Laplace and Pareto distributions.