MPA 634  
Data Science and R for Managers  
Homework #15

Functions

The normal distribution is determined by two parameters, the mean and the standard deviation. The standard normal distribution has a mean of 0 and a standard deviation of 1. We are interested in seeing the effect of the mean on location and of the standard deviation on scale. Create a function that compares graphically the distribution of the standard normal with a normal distribution with different values for the mean and standard deviation.

The following steps should help you accomplish this:

1. Create a sequence of x values that give the possible values for your normal distributions.
2. Use ggplot and dnorm to create a plot of the probability density function (pdf) for the standard normal. The geom\_ribbon is helpful when creating this graph.
3. Overlay another plot for a normal distribution that has a specified mean and standard deviation.
4. Create a function that uses arguments minimum, maximum, mu, and sigma that allows you to compare the two distributions.

If you have a little extra time, see if you can make this into a dynamic app by using Shiny.