# PDAT610G: Module 3 Assignment

**Introduction**

In this assignment, you’ll have an opportunity to write a function in various different ways using Ames Housing dataset. Ames Housing dataset complied by Dean DeCock, Truman State University, describes the sale of individual residential property in Ames, Iowa from 2006 to 2010. The data set contains 2930 observations and 80 variables involved in assessing home values. This dataset is freely available in R and you can obtain it using the following commend.

install.packages("AmesHousing")

library(AmesHousing)

AmesData<-make\_ames( )

Now, AmesData is ready to be analyzed. Make sure to run str(AmesData) to check the structure of the dataset.

**Submission Method**

* Create an R Markdown document containing both your code and any written responses or explanations.
* Make sure to number your answers so that I can easily see which questions you were answering
* The code for any question part should be contained in a single code block.
* When you’re done, knit your code to a PDF file, and submit that file through Blackboard.
* Hint: Sometimes students only test their code by running the individual chunks interactively in R Stu-dio. I’d suggest checking often to make sure your code will knit to a final document. It’s easier to diagnose any knitting problems if you know exactly what you just typed that caused the knitting to break (as opposed to waiting until the end and troubleshooting the whole document).

**Assignment**

Create a new column in the AmesData data frame which has a value of 1 if the house is built in year 2000 or later or 0 if it is built before year 2000 using the following method.

* 1. ifelse(name this column – w3ifelse)

What is the first 10 elements of w3ifelse?

* 1. if-Else and a For loop (name this column – w3for)

What is the first 10 elements of w3for?

* 1. Build your own function and use sapply (name this column - w3apply)

What is the first 10 elements of w3apply?

* 1. Create a column w3diff which is the difference of the two columns w3ifelse and w3apply. DO NOT use a for loop or the apply set of functions for this step. Simple subtraction will work. What is the total sum of this column?