**Welcome to Tic-Tac-Toe in R!**

This tutorial will guide you through how to play this Tic-Tac-Toe game.

The motivation behind creating this game was to introduce R in a fun way to introduce R to those who are interested in coding or who may rely on R or statistical programming languages in the future. It is supposed to be easy to play for R beginners while also allowing players to go into the source code directly to see specifically how this program runs.

**Getting started:**

This game relies on R and performs best when run in RStudio. R can be downloaded here: <https://www.r-project.org/> RStudio can be downloaded here: <https://www.rstudio.com/products/rstudio/download/>

RStudio is made up of 4 panels (source, console, environment, plotting). User inputs occur completely within the RStudio source window (top-left) and the game outputs are viewed in the console and plotting windows.

Finally, this game relies on 2 R packages: *sp* and *rgeos*. If you are seeing error messages like:

These packages will need to be installed on your computer which can be done in RStudio under **Tools > Install packages.**

**Gameplay:**

**Setup:** In this version of Tic-Tac-Toe, you will be playing against a computer. The game is played by running the lines of code in the source window, with occasional user inputs at certain lines. To start, click on the beginning of the code (in the source window) and hit “Run” (can also do Ctrl+Enter on Windows or Command+Enter on Mac) until you reach line that says “#Set difficulty!”. You should be able to see the code executing in the console window and the game board appear in the plotting window. Now the game is setup and ready to go

**1.** When you get to the “Set difficulty!” line, set the computer difficulty. Default difficulty is easy (Difficulty = “Easy”) but can be made more challenging by changing “Easy” to “Medium”, “Hard”, or “Impossible”. Continue running the code until you reach “#Player Move 1”.

**2.** When you reach “#Player Move 1”, tell the computer where you want your first X to be placed. This is done by making “Move\_1” = a number from 1-9.