SAL 603 Final Project Online

Group Work: This can be completed in a group of up to 4 students.

Topic: Your topic can be anything sport related. One person must submit your idea, along with a list of the students in the group to Blackboard as a new thread. I will either reply that the idea is approved, or I will email you to modify the idea based upon scope.

Requirements:

1) Must have concrete Research Question(s) or, in the case of an interactive application, allow a user to answer concrete Research Question(s): 15 points
    a. If you decide to create an interactive application, you will need to research how to do this. However the easiest method is to include the input() statement within a Jupyter Notebook cell: https://www.w3schools.com/python/ref_func_input.asp
2) Must answer all the Research Question(s) in a convincing manner using at least three visualizations.
3) Document where your data came from. All cleaning and transformations must be done within your Python script (Excel is NOT allowed). 15 points
4) Must record your presentation and post online (YouTube or Zoom Recording): 25 points.

Everything must be done within a Jupyter Notebook or a .python script. Each member of the group should submit both the source file and any data that you collected to Blackboard.

Recording:

You must record your presentation and make available on either Zoom as a public recording or upload to YouTube. The length should be less than 15 minutes. You may use any software you choose, including Zoom, but I recommend using https://screencast-o-matic.com/. It is free for videos under 15 minutes. If possible, record both the screen and webcam. Each person in the group must present their part in the video. If the members of your group are remote, each one can record a separate video and then merge them into a single video using the open-source VLC video player. Here's instructions on how to merge multiple videos into one: https://www.techwalla.com/articles/how-to-use-vlc-to-combine-two-clips

Submission:

Submit a link to your talk as a new thread on the Final Project forum on Blackboard. Upload your code to the Final Project assignment in Blackboard.

Class Discussion:

Under the Final Project discussion, create a new thread with the link to your video. The class will be expected to view your video and discuss it. You are to answer any questions the class might have for you. Additionally, you are to ask at least one question from two other classmates under their threads.

Project Ideas

1) Create visualizations that demonstrate the effect that Exit Velocity and Launch Angle have on HR (or other offense metric. This data is available from Statcast via pybaseball: https://github.com/jldbc/pybaseball

2) Create visualizations that demonstrate the effect that release speed and pitch movement (or any of the other advanced Statcast metrics) has on strikes (or other pitching metric). This will probably need to be analyzed by pitch type. Visualize the model appropriately.

4) Create an interactive application that allows a user to visually compare release speed and pitch movement between two pitchers.

5) Create an interactive application that allows a user to visually compare advanced stats between a player and the rest of his/her teammates that play the same position.

6) Analyze an advanced player contribution stat such as win share (WS), box plus/minus (BPM), Wins Above Replacement (WAR), etc, and find which box score stat contributes to most to these contribution stats using visualizations and/or a regression model.

7) Select a previously published paper and attempt to reproduce the findings using current data.

8) Add to an existing research project. You must outline exactly what you did to extend the previous work, and the extra work must all be done in Python.