Question:  
“Drive for show, putt for dough”. What is the ideal golf skill to train to improve your overall score? It is common to say that training putting is more important for the overall performance in golf than training driving, which gets a lot of attention in the media.

1. Using PGA tour data, can you confirm that this assumption is true? If not, what is the ideal skill to train to improve your overall score? What would you suggest to newer vs more experienced players?
2. Using your answers from part (a), can you find any undervalued players that you would like to upskill?

Interpretation:  
"Drive for show, putt for dough" is a popular saying in the world of golf that emphasizes the importance of putting (the final stroke on the green) in the context of winning or earning money in the sport. Here's an explanation:

1. "Drive for show": In golf, "driving" refers to the tee shot, the first stroke taken from the tee box at the beginning of each hole. A golfer who can hit long and impressive drives often gets attention and admiration from spectators due to the display of power and skill. However, this part of the game is mainly for show, as it doesn't guarantee success or victory.
2. "Putt for dough": The "putt" refers to the short, delicate strokes taken on the green to guide the ball into the hole. Unlike driving, putting is about precision, accuracy, and control. The saying suggests that while hitting impressive drives may be visually appealing, the real money (or success) in golf comes from the ability to sink putts consistently, as putting is essential for achieving lower scores and ultimately winning tournaments and cash prizes.

In essence, the saying reminds golfers that flashy, powerful drives may grab attention, but it's the skillful and precise putting that leads to victory and financial rewards in the game of golf. It's a metaphorical way of emphasizing the importance of mastering the fundamentals and focusing on what truly matters to achieve success.

# METHODOLOGY:

To determine whether driving distance leads to more wins or if putting skills have a stronger influence on winning in golf, you can perform a statistical analysis. Here are the steps you can follow:

1. **Data Preparation:**
   * Create a dataset that includes the relevant columns: 'DRIVE\_DISTANCE,' 'SG\_P' (Strokes Gained Putting), and '1s' (Wins).
2. **Correlation Analysis:**
   * Calculate the correlation coefficients between 'DRIVE\_DISTANCE' and '1s' (Wins) and between 'SG\_P' and '1s' (Wins).
   * Correlation measures the strength and direction of a linear relationship between two variables. A positive correlation indicates that as one variable increases, the other tends to increase, while a negative correlation indicates an inverse relationship.
3. **Hypothesis Testing:**
   * Perform hypothesis tests to determine if the correlations are statistically significant.
   * Common tests include the Pearson correlation test for 'DRIVE\_DISTANCE' vs. '1s' and 'SG\_P' vs. '1s.'
   * The null hypothesis (H0) could be that there is no significant correlation between the variables, and the alternative hypothesis (Ha) would be that there is a significant correlation.
4. **Regression Analysis (Machine Learning):**
   * Conduct regression analysis to assess the impact of 'DRIVE\_DISTANCE' and 'SG\_P' on the number of wins ('1s').
   * Fit linear regression models, one for 'DRIVE\_DISTANCE' and one for 'SG\_P,' with '1s' as the dependent variable.
   * Evaluate the coefficients of the predictors to see which one has a stronger influence on the number of wins.
5. **Visualizations:**
   * Create scatter plots to visualize the relationship between 'DRIVE\_DISTANCE' and '1s' and between 'SG\_P' and '1s.'
   * Overlay regression lines to visually assess the slope and direction of the relationship.
6. **Statistical Significance:**
   * Check the p-values associated with each predictor in the regression models.
   * A predictor with a lower p-value is considered more statistically significant in explaining the variation in the dependent variable.
7. **Interpretation:**
   * Based on the correlation coefficients, regression coefficients, p-values, and visualizations, draw conclusions about whether driving distance or putting skills have a stronger influence on winning in golf.

Keep in mind that golf performance is influenced by various factors, and this analysis will provide insights into the relationships between these specific variables. Other factors like short game skills, course conditions, and mental aspects also play a role in a golfer's success.

# Stroke Play (Medal Play):

Most PGA Tour events are played using the "Stroke Play" format. Stroke play is the traditional format in professional golf, where each golfer plays every hole, and their total number of strokes taken to complete the round is counted. The golfer with the fewest total strokes at the end of the tournament or round wins.

* In stroke play, each golfer plays every hole, and the total number of strokes taken to complete the round is counted.
* The golfer with the fewest total strokes at the end of the round wins.
* Stroke play is the most common format for professional tournaments and is also used for casual rounds of golf.
* There is no direct competition with other players during the round.

Terms to know:

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| Double Bogey | 2 over PAR |
| Bogey | 1 over PAR |
| PAR | PAR |
| Birdie | 1 Under PAR |
| Eagle | 2 under PAR |
| Albatross/Double Eagle | 3 under PAR |